SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND SECTION 4(f) EVALUATION PERRIS VALLEY LINE RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

Federal Transit Administration
and
Riverside County Transportation Commission

Prepared by:

Kleinfelder
5015 Shoreham Place
San Diego, California 92122
(858) 320-2000

and

STV Incorporated
9130 Anaheim Place, Suite 210
Rancho Cucamonga, California 91730
(909) 484-0660

December 1, 2010
Revised: February, 2012

The proposed Perris Valley Line project is located in western Riverside County, extending approximately 24 miles between the cities of Riverside and Perris. The proposed project would extend commuter rail service into the Interstate 215 corridor.

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation

Submitted Pursuant to: Federal 42 USC 4332(2) C and 49 USC 303

Federal Transit Administration Region 9
and
Riverside County Transportation Commission

This Page Intentionally Left Blank

TABLE OF CONTENTS

ACRONYMS ix
EXECUTIVE SUMMARY ES-1
1.0 PROPOSED PROJECT 1-1
1.1 INTRODUCTION 1-1
1.2 IDENTIFICATION OF THE PROPOSED PROJECT 1-2
1.3 PROJECT AREA AND BACKGROUND 1-2
1.4 PROJECT PURPOSE AND NEED 1-9
1.5 PROJECT GOALS AND OBJECTIVES 1-10
1.6 REGIONAL AND LOCAL PLANNING CONTEXT 1-11
1.7 PROJECT DETAILS 1-15
1.7.1 Track Improvements 1-19
1.7.2 Stations and Layover Facility 1-20
1.7.3 Culvert Replacement and Extension 1-51
1.7.4 Bridge Replacements 1-51
1.7.5 Grade Crossings 1-51
1.7.6 Communication Systems 1-52
1.7.7 Noise Barriers 1-53
1.7.8 Landscape Walls 1-53
1.7.9 Construction 1-65
1.7.10 Operations 1-66
1.7.11 Maintenance 1-67
1.7.12 Freight Usage 1-67
1.8 ACQUISITIONS AND RELOCATIONS 1-68
1.9 ENVIRONMENTAL PERMITS 1-81
2.0 PROJECT ALTERNATIVES 2-1
2.1 INTRODUCTION 2-1
2.1.1 FTA Responsibilities 2-1
2.1.2 RCTC Responsibilities 2-1
2.2 DESCRIPTION AND EVALUATION OF ALTERNATIVES 2-2
2.2.1 No Project Alternative 2-11
2.2.2 Express Bus Alternative 2-11
2.2.3 New Commuter Rail Alternatives 2-12
2.3 COMPARISON OF ALTERNATIVES 2-14
2.4 SELECTION OF THE LOCALLY PREFERRED ALTERNATIVE 2-21
3.0 ENVIRONMENTAL EVALUATION 3-1
3.1 LAND USE AND ZONING 3.1-1
3.1.1 Regulatory Setting 3.1-1
3.1.2 Affected Environment 3.1-5
3.1.3 Environmental Consequences/Impacts 3.1-8
3.1.4 Mitigation Measures 3.1-11
3.2 AGRICULTURAL RESOURCES 3.2-1
3.2.1 Regulatory Setting 3.2-1
3.2.2 Affected Environment 3.2-3
3.2.3 Environmental Consequences/Impacts 3.2-4

TABLE OF CONTENTS (Continued)

3.2.4 Mitigation Measures 3.2-11
3.3 AIR QUALITY 3.3-1
3.3.1 Regulatory Setting 3.3-1
3.3.2 Affected Environment 3.3-10
3.3.3 Environmental Consequences/Impacts 3.3-16
3.3.4 Mitigation Measures 3.3-37
3.4 NOISE AND VIBRATION 3.4-1
3.4.1 Noise Regulatory Setting 3.4-5
3.4.2 Noise Affected Environment 3.4-13
3.4.3 Noise Environmental Consequences/Impacts 3.4-24
3.4.4 Noise Mitigation Measures 3.4-33
3.4.5 Vibration Regulatory Setting 3.4-39
3.4.6 Vibration Affected Environment 3.4-44
3.4.7 Vibration Environmental Consequences/Impacts 3.4-47
3.4.8 Vibration Mitigation Measures 3.4-50
3.5 TRAFFIC AND PARKING 3.5-1
3.5.1 Regulatory Setting 3.5-1
3.5.2 Affected Environment 3.5-2
3.5.3 Environmental Consequences/Impacts 3.5-21
3.5.4 Mitigation Measures 3.5-38
3.6 AESTHETICS 3.6-1
3.6.1 Regulatory Setting 3.6-1
3.6.2 Affected Environment 3.6-2
3.6.3 Environmental Consequences/Impacts 3.6-9
3.6.4 Mitigation Measures 3.6-18
3.7 CULTURAL RESOURCES AND SECTION 106 COMPLIANCE 3.7-1
3.7.1 Regulatory Setting 3.7-1
3.7.2 Affected Environment 3.7-2
3.7.3 Environmental Consequences/Impacts 3.7-6
3.7.4 Mitigation Measures 3.7-9
3.8 HAZARDS AND HAZARDOUS MATERIALS 3.8-1
3.8.1 Regulatory Setting 3.8-1
3.8.2 Affected Environment 3.8-2
3.8.3 Environmental Consequences/Impacts 3.8-9
3.8.4 Mitigation Measures 3.8-16
3.9 UTILITIES AND SERVICE SYSTEMS 3.9-1
3.9.1 Regulatory Setting 3.9-1
3.9.2 Affected Environment 3.9-4
3.9.3 Environmental Consequences/Impacts 3.9-6
3.9.4 Mitigation Measures 3.9-13
3.10 SECTION 4(F) EVALUATION AND PARKLANDS 3.10-1
3.10.1 Regulatory Setting 3.10-1
3.10.2 Affected Environment 3.10-3
3.10.3 Environmental Consequences/Impacts 3.10-8
3.10.4 Mitigation Measures 3.10-14
3.11 ENVIRONMENTAL JUSTICE AND SOCIOECONOMICS 3.11-1

TABLE OF CONTENTS (Continued)

3.11.1 Regulatory Setting 3.11-1
3.11.2 Affected Environment 3.11-2
3.11.3 Environmental Consequences/Impacts 3.11-10
3.11.4 Summary 3.11-11
3.11.5 Mitigation Measures 3.11-12
3.12 SAFETY AND SECURITY 3.12-1
3.12.1 Regulatory Setting 3.12-1
3.12.2 Affected Environment 3.12-2
3.12.3 Environmental Consequences/Impacts 3.12-4
3.12.4 Mitigation Measures 3.12-8
3.13 AMERICANS WITH DISABILITIES ACT COMPLIANCE 3.13-1
3.13.1 Regulatory Setting 3.13-1
3.13.2 Affected Environment 3.13-7
3.13.3 Environmental Consequences/Impacts 3.13-8
3.13.4 Mitigation Measures 3.13-8
3.14 BIOLOGICAL RESOURCES 3.14-1
3.14.1 Regulatory Setting 3.14-1
3.14.2 Affected Environment 3.14-4
3.14.3 Environmental Consequences/Impacts 3.14-24
3.14.4 Mitigation Measures 3.14-34
3.15 GEOLOGY AND SOILS 3.15-1
3.15.1 Regulatory Setting 3.15-1
3.15.2 Affected Environment 3.15-7
3.15.3 Environmental Consequences/Impacts 3.15-20
3.15.4 Mitigation Measures 3.15-21
3.16 WATER QUALITY 3.16-1
3.16.1 Regulatory Setting 3.16-1
3.16.2 Affected Environment 3.16-5
3.16.3 Environmental Consequences/Impacts 3.16-5
3.16.4 Mitigation Measures 3.16-6
3.17 FLOODPLAINS 3.17-1
3.17.1 Regulatory Setting 3.17-1
3.17.2 Affected Environment 3.17-3
3.17.3 Environmental Consequences/Impacts 3.17-6
3.17.4 Mitigation Measures 3.17-7
3.18 PALEONTOLOGICAL RESOURCES 3.18-1
3.18.1 Regulatory Setting 3.18-1
3.18.2 Affected Environment 3.18-2
3.18.3 Environmental Consequences/Impacts 3.18-3
3.18.4 Mitigation Measures 3.18-5
3.19 INDIRECT AND CUMULATIVE EFFECTS 3.19-1
3.19.1 Regulatory Setting 3.19-1
3.19.2 Affected Environment 3.19-3
3.19.3 Environmental Consequences/Impacts 3.19-5
3.19.4 Mitigation Measures 3.19-10
4.0 AGENCY COORDINATION 4-1

TABLE OF CONTENTS (Continued)

4.1 FEDERAL AGENCIES 4-1
4.2 STATE AGENCIES 4-1
4.3 REGIONAL/LOCAL AGENCIES 4-1
4.4 OTHER 4-1
5.0 PUBLIC OUTREACH 5-1
5.1 AGENCY COORDINATION 5-1
5.2 PUBLIC SCOPING 5-1
5.3 PUBLIC COMMENT PROCESS 5-1
5.3.1 Initial NEPA Process 5-2
5.3.2 CEQA Process 5-2
5.3.3 Current NEPA Process 5-3
6.0 REPORT PREPARATION 6-1
6.1 LEAD AGENCY 6-1
6.2 REPORT PREPARERS 6-1
7.0 REFERENCES 7-1
8.0 INDEX 8-1

TABLE OF CONTENTS (Continued)

TABLES

Table ES.2-1 Impacts and Mitigation for the Proposed Project ES-7
Table 1.7-1 Perris Valley Line - Opening Year (2014) Operations 1-66
Table 1.8-1 PVL Parcel Acquisitions 1-70
Table 1.9-1 Agency Actions and Approvals 1-81
Table 2.3-1 Comparison of Alternatives 2-17
Table 3.2-1 Summary of Farmland Conversion Impact Rating Scores 3.2-10
Table 3.3-1 Ambient Air Quality Standards 2009 .... 3.3-4
Table 3.3-2 SCAQMD Air Quality Significance Thresholds 3.3-5
Table 3.3-3 Toxic Air Contaminant (TAC) Threshold 3.3-6
Table 3.3-4 Regional Criteria Pollutants Attainment Status 2009 .... 3.3-12
Table 3.3-5 2006-2008 Air Quality Summary for Project Area Monitoring System 3.3-13
Table 3.3-6 2008 Emission Inventory for Riverside County - South Coast Air Basin (Tons per Day) 3.3-15
Table 3.3-7 2012 Net Change in Operational Emissions (in pounds per day) 3.3-26
Table 3.3-8 Local Area Carbon Monoxide Dispersion Analysis 3.3-31
Table 3.3-9 Parking Lot Carbon Monoxide Analysis 3.3-32
Table 3.3-10 Calculated Risk at Point of Greatest Concentration 3.3-33
Table 3.3-12 PVL Predicted Daily Construction Emissions (lbs) 3.3-35
Table 3.4-1 Typical Range of L_{dn} in Populated Areas 3.4-2
Table 3.4-2 City of Riverside – Exterior Noise Standards 3.4-8
Table 3.4-3 Land Use Categories and Metrics for Transit Noise 3.4-13
Table 3.4-4 Allowable Transit Noise Level Increases(L_{dn} and L_{eq} in dBA) 3.4-13
Table 3.4-5 Summary of Noise Measurements (2002) 3.4-16
Table 3.4-6 Summary of Noise Measurements (2005) 3.4-21
Table 3.4-7 Noise Monitoring Locations for Detailed Noise Assessment 2009 .... 3.4-22
Table 3.4-8 Summary of Short-Radius Curve Locations 3.4-26
Table 3.4-9 Detailed Noise Impact Assessment Category 2 Land Uses for Riverside 3.4-27
Table 3.4-10 Detailed Noise Impact Assessment Category 2 Land Uses for Perris 3.4-29
Table 3.4-11 Detailed Noise Impact Assessment Category 3 Land Uses 3.4-30
Table 3.4-12 Proposed Noise Barrier Locations 3.4-35
Table 3.4-13 Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for General Assessment 3.4-43
Table 3.4-14 Summary of Vibration Measurements (2005) 3.4-45
Table 3.4-15 Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Riverside 3.4-47
Table 3.4-16 Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Perris 3.4-48
Table 3.4-17 Predicted Levels of Ground-Borne Vibration, Category 3 (Institutional) Land Uses 3.4-48
Table 3.5-1 Level-of-Service Descriptions 3.5-1
Table 3.5-2 AM and PM Analysis-Hour Ridership 3.5-21

TABLE OF CONTENTS (Continued)

Table 3.5-3	Modal Split of Passengers for the AM Peak Period (PM peak period modal splits are reversed)	3.5-22
Table 3.5-4	Auto-Trip Generation (Number of Vehicles)	3.5-22
Table 3.5-5	Hunter Park Station Options 2012 Future Levels of Service with the Project	3.5-25
Table 3.5-6	Moreno Valley/March Field Station 2012 Future Levels of Service with the Project	3.5-32
Table 3.5-7	Downtown Perris Station 2012 Future Levels of Service with the Project	3.5-33
Table 3.5-8	South Perris Station 2012 Future Levels of Service with the Project	3.5-37
Table 3.5-9	2012 Future Levels of Service and Mitigation Measures	3.5-41
Table 3.7-1	National Register of Historic Place (NRHP) Listed or Eligible Resources	3.7-4
Table 3.7-2	Archaeological Resources within the APE	3.7-5
Table 3.10-2	NRHP Listed or Eligible Resources	3.10-8
Table 3.10-3	PVL Project Effects on 4(f) Resources	3.10-10
Table 3.12-1	Existing Grade Crossings Perris Valley Line Corridor, Riverside County, California	3.12-3
Table 3.14-1	Cores and Linkages related to PVL	3.14-11
Table 3.14-2	MSHCP Cell Number Conservation Criteria	3.14-12
Table 3.14-3	Narrow Endemic and Criteria Area Survey Plant Species	3.14-25
Table 3.14-4	Jurisdictional Areas of Impact	3.14-29
Table 3.14-5	Proposed Culvert Improvements	3.14-33
Table 3.15-1	SJBL Alignment Soil Mapping Units Soil Survey of Western Riverside Area California (Natural Resource Conservation Service (NRCS), 2008)	3.15-9
Table 3.15-2	Summary of Significant Faults	3.15-15
Table 3.15-3	Approximate Distance to Nearest Faults (Miles)	3.15-16
Table 3.16-1	Surface Water Beneficial Uses within the Project Area	3.16-3
Table 3.16-2	Groundwater Beneficial Uses within the Project Area	3.16-3

TABLE OF CONTENTS (Continued)

FIGURES

Figure ES.2-1 Regional and Vicinity Map ES-5
Figure 1.7-1 Perris Valley Line Corridor Mile Posts 1-17
Figure 1.7-2 SJBL Track Improvements 1-23
Figure 1.7-3 Citrus Connection 1-25
Figure 1.7-4 Citrus Connection Engineering Site Plan 1-27
Figure 1.7-5 Typical Views of Platform and Canopy Structure 1-29
Figure 1.7-6 Hunter Park Station Options 1-31
Figure 1.7-7 Hunter Park Station Palmyrita Avenue Engineering Site Plan 1-33
Figure 1.7-8 Hunter Park Station Columbia Avenue Option Engineering Site Plan 1-35
Figure 1.7-9 Hunter Park Station Marlborough Avenue Option Engineering Site Plan 1-37
Figure 1.7-10 Moreno Valley/March Field Station 1-39
Figure 1.7-11 Moreno Valley/March Field Station Engineering Site Plan 1-41
Figure 1.7-12 Downtown Perris Station 1-43
Figure 1.7-13 Downtown Perris Station Engineering Site Plan 1-45
Figure 1.7-14 South Perris Station 1-47
Figure 1.7-15 South Perris Station Engineering Site Plan 1-49
Figure 1.7-16 Layover Facility 1-55
Figure 1.7-17 Layover Facility Engineering Site Plan 1-57
Figure 1.7-18 Bridge and Culvert Improvement Locations 1-59
Figure 1.7-19 San Jacinto River Bridges 1-61
Figure 1.7-20 PVL Grade Crossing Improvements and Closures 1-63
Figure 1.8-1 Citrus Connection Parcel Acquisition 1-71
Figure 1.8-2 Hunter Park Station Parcel Acquisition 1-73
Figure 1.8-3 Moreno Valley/March Field Station Parcel Acquisition 1-75
Figure 1.8-4 South Perris Station and Layover Facility Parcel Acquisition 1-77
Figure 1.8-5 Street Improvements Parcel Acquisition 1-79
Figure 2.2-1 2004 Alternatives Analysis - Express Bus Alternative 2-3
Figure 2.2-2 2004 Alternatives Analysis - Commuter Rail Alternative with New Connection to UP RIL 2-5
Figure 2.2-3 2004 Alternatives Analysis - Commuter Rail Alternative with Highgrove Turnback 2-7
Figure 2.2-4 Locally Preferred Alternative Commuter Rail with Citrus Connection 2-9
Figure 3.2-1 Agricultural Resources 3.2-5
Figure 3.2-2 Agricultural Resources 3.2-7
Figure 3.4-1 Common Indoor and Outdoor Noise Levels 3.4-3
Figure 3.4-2 Allowable Transit Noise Increases 3.4-11
Figure 3.4-3 Noise and Vibration Monitoring Locations - North 3.4-17
Figure 3.4-4 Noise and Vibration Monitoring Locations - South 3.4-19
Figure 3.4-5 Noise Barrier Locations 3.4-37
Figure 3.4-6 Typical Vibration Levels 3.4-41
Figure 3.5-1 Hunter Park Station Options Traffic Study Locations 3.5-5
Figure 3.5-2 Moreno Valley/March Field Station Traffic Study Locations 3.5-7
Figure 3.5-3 Downtown Perris Station Traffic Study Locations 3.5-9

TABLE OF CONTENTS (Continued)

Figure 3.5-4 South Perris Station Traffic Study Locations 3.5-11
Figure 3.6-1 Scenic Vista Locations 3.6-5
Figure 3.6-2 Scenic Routes 3.6-7
Figure 3.6-3 Landscape Wall Locations 3.6-15
Figure 3.8-1 Areas of Potential Environmental Concern 3.8-7
Figure 3.9-1 Communication Tower Locations 3.9-7
Figure 3.9-2 Typical Radio Antenna Tower 3.9-9
Figure 3.9-3 Typical Microwave Antenna Tower 3.9-11
Figure 3.10-1 Parklands and Section 4(f) Resources within ½ Mile of SJBL 3.10-5
Figure 3.11-1 Environmental Justice Communities 3.11-7
Figure 3.13-1 Typical Station Features for ADA Mobility 3.13-5
Figure 3.14-1 Multiple Species Habitat Conservation Plan Cores and Linkages 3.14-7
Figure 3.14-2 Multiple Species Habitat Conservation Plan Criteria Cells 3.14-9
Figure 3.14-3 Stephens' Kangaroo Rat Habitats and Reserves 3.14-15
Figure 3.14-4 Habitat and Vegetation Types 3.14-17
Figure 3.14-5 Habitat and Vegetation Types at Station Sites 3.14-19
Figure 3.14-6 Habitat and Vegetation Types at Station Sites 3.14-31
Figure 3.15-1 PVL Corridor Geology 3.15-3
Figure 3.15-2 PVL Corridor Soils 3.15-11
Figure 3.15-3 Regional Faults 3.15-13
Figure 3.15-4 Liquefaction Potential 3.15-17
Figure 3.17-1 FEMA Zones for FIRM Panels C0065G, C0727G, and C0731G 3.17-9
Figure 3.17-2 FEMA Zones for FIRM Panel C1440G 3.17-11
Figure 3.19-1 2012 Projects Near PVL Corridor 3.19-7

APPENDICES

Appendix A 2004 Draft EA Comment Matrix
Appendix B Agricultural Resources: Farmlands Conversion Impact Rating (NRCS-CPA-106)
Appendix C Environmental Justice Data
Appendix D Grade Crossing Modifications Table
Appendix E Agency Communication Log

TECHNICAL REPORTS (located on attached CD)

A San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis
B Air Quality Technical Report
C Noise and Vibration Technical Report
D Traffic Technical Report
E Habitat Assessment Report
F Jurisdictional Determination
G Hazardous Materials Corridor Study – SJBL Segment
H Phase I ESA
I Zeta Tech Report

ACRONYMS AND ABBREVIATIONS

AA	Alternatives Analysis
AADT	Annual Average Daily Traffic
AB	Assembly Bill
ABA	Architectural Barriers Act
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AE	Applied EarthWorks, Inc.
AGR	Agricultural Supply
ALUC	Airport Land Use Commission
A-PA	Alquist-Priolo Earthquake Fault Zoning Act
APE	Area of Potential Effects
APN	Assessor Parcel Number
APZ	Accident Potential Zone
AQMP	Air Quality Management Plan
AREMA	American Railway Engineering and Maintenance-of-Way Association Manual
AST	Above Ground Storage Tank
AT&SF	Atchison Topeka & Santa Fe Railroad
ATR	Automatic Traffic Recorder
BFE	Base Flood Elevation
BG	Block Group
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFFP	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CDWR	California Department of Water Resources
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CETAP	Community and Environmental Transportation Acceptability Process
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CGP	Construction General Permit
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CO	Carbon Monoxide
CP	Control Point

ACRONYMS AND ABBREVIATIONS (Continued)

CPA	Conservation Program Application
CPUC	California Public Utilities Commission
CWA	Clean Water Act
DAMP	Drainage Area Management Plan
dB	Decibel
dBA	A-Weighted Decibel
DEA	Draft Environmental Assessment
DEER	Determination of Eligibility and Effects Report
DTSC	Department of Toxic Substances Control
EDR	Environmental Database Report
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EOP	Emergency Operations Plan
EMWD	Eastern Municipal Water District
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GBV	Ground-Borne Vibration
GCOR	General Code of Operating Rules
GHG	Greenhouse Gas
GO	General Order
GWP	Global Warming Potential
GWR	Groundwater Recharge
HAP	Hazardous Air Pollutants
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HMBP	Hazardous Materials Business Plan
HMCS	Hazardous Materials Corridor Study
HOV	High-Occupancy Vehicle
I-215	Interstate 215
IB	Inbound side of track
ICBO	International Conference of Building Officials

ACRONYMS AND ABBREVIATIONS (Continued)

IND	Industrial Service Supply
IS	Initial Study
JPA	Joint Powers Authority
LAFCO	Local Area Formation Commission
LA Union Station	Los Angeles Union Station
L_{dn}	Day-night average sound level
L_{eq}	Equivalence sound level
$L_{eq(h)}$	Hourly value of equivalence sound level
LOS	Level-of-Service
LPA	Locally Preferred Alternative
MARB	March Air Reserve Base
MBTA	Migratory Bird Treaty Act
MDP	Master Drainage Plan
MEP	Maximum Extent Practicable
MFA	Myra L. Frank & Associates, Inc.
MLD	Most Likely Descended
MND	Mitigated Negative Declaration
MP	Mile Post
mph	Miles per hour
MPO	Metropolitan Planning Organization
MSAT	Mobile-Source Air Toxics
MSHCP	Multiple Species Habitat Conservation Plan
MS4	Municipal Separate Storm Sewers
MUN	Municipal and Domestic Supply
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCSS	National Cooperative Soil Survey
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NNL	National Natural Landmarks
NOA	Notice of Availability
NOP	Notice of Preparation
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

ACRONYMS AND ABBREVIATIONS (Continued)

O_3	Ozone
OB	Outbound side of tracks
OSD	Official Soil Description
Pb	Lead
PM_{10} and $PM_{2.5}$	Particulate Matter
PRC	Public Resources Code
PRPA	Paleontological Resources Preservation Act
PROC	Industrial Process Supply
PTC	Positive Train Control
PVL	Perris Valley Line
PVRWRF	Perris Valley Regional Water Reclamation Facility
Qaf	Artificial fill soil
RCA	Western Riverside County Regional Conservation Authority
RCFCWCD	Riverside County Flood Control and Water Conservation District
RCDEH	Riverside County Department of Environmental Health
RCHCA	Riverside County Habitat Conservation Agency
RCIP	Riverside County Integrated Project
RCLIS	Riverside County Land Information System
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
REC-1	Water Contact Recreation
REC-2	Non-contact Recreation
ROC	Reactive Organic Compounds
ROW	Right-of-way
RPUD	Riverside Public Utilities Department
RPUSA	Riverside Public Utilities Service Area
RTA	Riverside Transit Agency
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SARWQCB	Santa Ana Regional Water Quality Control Board
SB	Senate Bill
SBCM	San Bernardino County Museum
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCRRA	Southern California Regional Rail Authority
SEA	Supplemental Environmental Assessment
SF	Single-Family

ACRONYMS AND ABBREVIATIONS (Continued)

SFHA	Special Flood Hazard Area
SOHP~~O~~	State Office of Historic Preservation ~~Office~~
SIP	State Implementation Plan
SJBL	San Jacinto Branch Line
SKR	Stephens' Kangaroo Rat
SPWN	Spawning, Reproduction, and/or Early Development
SR-60	State Route 60
SR-74	State Route 74
SWRCB	State Water Resources Control Board
SO_2	Sulfur Dioxide
SSO	State Safety Oversight
SSPP	System Safety Program Plan
SWPPP	Storm Water Pollution Prevention Plan
TACs	Toxic Air Contaminants
TCE	Temporary Construction Easement
TCWG	Transportation Conformity Working Group
TeG	Terrace Escarpments
TLMA	Riverside County Transportation & Land Management Agency
TSM	Transportation Systems Management
UBC	Uniform Building Code
UCR	University of California Riverside
UP RIL	Union Pacific Riverside Industrial Lead
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
VdB	Vibration Decibels
VMT	Vehicle Miles Traveled
vph	Vehicles per hour
WARM	Warm Freshwater Habitat
WILD	Wildlife Habitat
WMWD	Western Municipal Water District

This Page Intentionally Left Blank

EXECUTIVE SUMMARY

The Executive Summary identifies the type of document, the proposed project including location, project alternatives, the purpose of the Environmental Assessment (EA), and summary of impacts and mitigation for the proposed Perris Valley Line (PVL) project.

ES.1.0 DOCUMENT IDENTIFICATION

This is a Supplemental Environmental Assessment (SEA) prepared for the Perris Valley Line PVL project. The Federal Transit Administration (FTA) is the lead agency for this SEA, prepared in accordance with the National Environmental Policy Act (NEPA) and FTA guidelines.

The study area for this project is an existing transportation corridor located in western Riverside County, California. Situated approximately 70 miles east of Los Angeles, the study corridor extends approximately 24 miles southeast from the city of Riverside to south of the city of Perris. Three incorporated cities in the study area include Riverside, Moreno Valley, and Perris. The proposed project, the PVL, would extend Southern California Regional Rail Authority (SCRRA) commuter rail service from the city of Riverside to south of the city of Perris in western Riverside County, California. In the city of Riverside, the PVL would link to the existing Burlington Northern Santa Fe (BNSF) to connect to the existing Riverside Downtown Station, approximately three miles. From the BNSF, the PVL would operate on a new rail segment, known as the "Citrus Connection," that would be constructed on property to be acquired between the BNSF and the San Jacinto Branch Line (SJBL). The eastern end of the "Citrus Connection" would link with the existing 21-mile SJBL corridor to south of the city of Perris. It is anticipated that the PVL would offer commuter rail service starting in ~~2012~~2014.

The anticipated start of construction in 2011 and opening year of PVL service in 2012 were revised following public circulation of the Draft SEA to 2012 and 2014, respectively. The analyses were reviewed and it was determined the schedule revisions do not result in any substantive changes that warrant revising the analyses; therefore, these analyses remain valid. It should be noted that the revised construction year and opening year are reflected throughout the document as appropriate.

In 2004, a Draft Environmental Assessment (Draft EA) was prepared and circulated for comment. Comments were received, but a Final EA to address those comments was not published. In 2008, the Riverside County Transportation Commission (RCTC) selected the Commuter Rail with New Connection to BNSF at Citrus Street Alternative ("Citrus Connection") as the Locally Preferred Alternative (LPA). Because of the length of time that has elapsed since the Draft EA was circulated, and because the LPA has changed, FTA has directed the preparation of this SEA to replace the previously prepared Draft EA in its entirety.

The SEA reflects the Purpose and Need, as well as Goals and Objectives that were evolved through the San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis (AA) (STV Incorporated, 2004). Public input gathered in response to the AA and Draft EA has also guided the development of modal options considered.

The proposed project is the subject of an EA because it is an action for which the significance of impacts on the environment, and social and economic considerations is not clearly established. According to NEPA regulations, an EA is a concise public document prepared to determine whether the proposed action has the potential to cause significant environmental effects (40 Code of Federal Regulations (CFR) 1508.9(a)). This SEA has been prepared to determine the probable impacts of the PVL. The purpose of this SEA is to:

- Provide sufficient evidence and analysis to determine whether an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI) should be prepared;
- Aid FTA's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary.

The SEA will assist FTA in determining the significance of environmental impacts resulting from the PVL project, which the FTA has previously approved as qualifying under the FTA Small Starts category of the New Starts program (49 United States Code [USC] Section 5309). This qualification/approval is based on the preliminary estimates that the project is expected to cost less than 250 million dollars and require less than 75 million dollars in federal funding. RCTC has made application for the maximum amount of Small Starts funding (less than 75 million dollars), and the balance of the project would be paid through Proposition A bond proceeds. Proposition A is a key funding source for transportation improvements and projects. Proposition A has funded municipal transportation projects, improved bus service, and initiated plans for a rail system that continues to be expanded today.

The Draft SEA was available for public review (December 1, 2010 through January 6, 2011), comments were received and addressed, and are included in the Final SEA (see Volume 1). And, with implementation of mitigation measures, no significant environmental impacts are anticipated due to the proposed project. Therefore, FTA anticipates issuing a FONSI for the proposed project. ~~The SEA will be available for public review and comment for a 30-day period. At the conclusion of the public review period, the SEA will be revised to reflect changes in the proposed action or mitigation measures in response to comments received on the SEA, and any impacts resulting from the changes. If it is determined that the proposed project would not have a significant impact to the environment, then a FONSI will be issued. If it is determined that the proposed project could have a significant impact to the environment, an EIS will be prepared.~~

Comments received on the 2004 Draft EA are summarized in Appendix A. In addition, references are provided that direct the reader to the appropriate section in this SEA where that topic is discussed. In accordance with 23 CFR 771.119(h) this Final SEA is being made for public review prior to FTA's consideration to issue a FONSI. ~~In recognition that comments were made on the Draft EA in 2004, this SEA contains a table of those comments provided in Appendix A. The table identifies public comments received by topic area and directs the reader to the appropriate section in this SEA. Note that no new public scoping was undertaken as part of this updated SEA. Another comment period will be announced by FTA, and specific comments received during this new comment period will be addressed in the Final SEA.~~

The SEA is comprised of seven primary chapters, as follows:

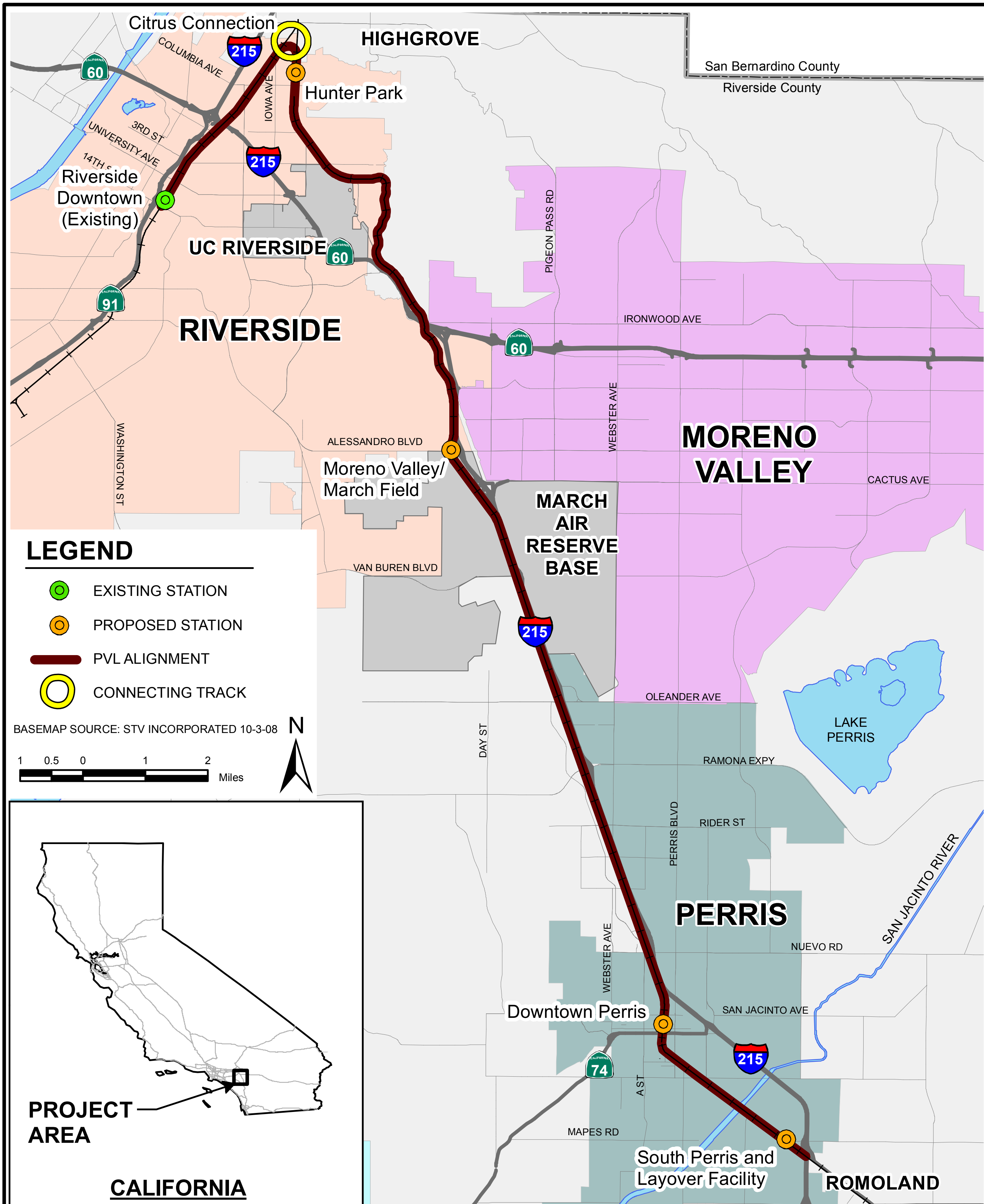
Chapter 1.0 – Proposed Project
Chapter 2.0 – Alternatives
Chapter 3.0 – Environmental Evaluation
Chapter 4.0 – Agency Coordination
Chapter 5.0 – Public Outreach
Chapter 6.0 – Report Preparation

Chapter 7.0 – References

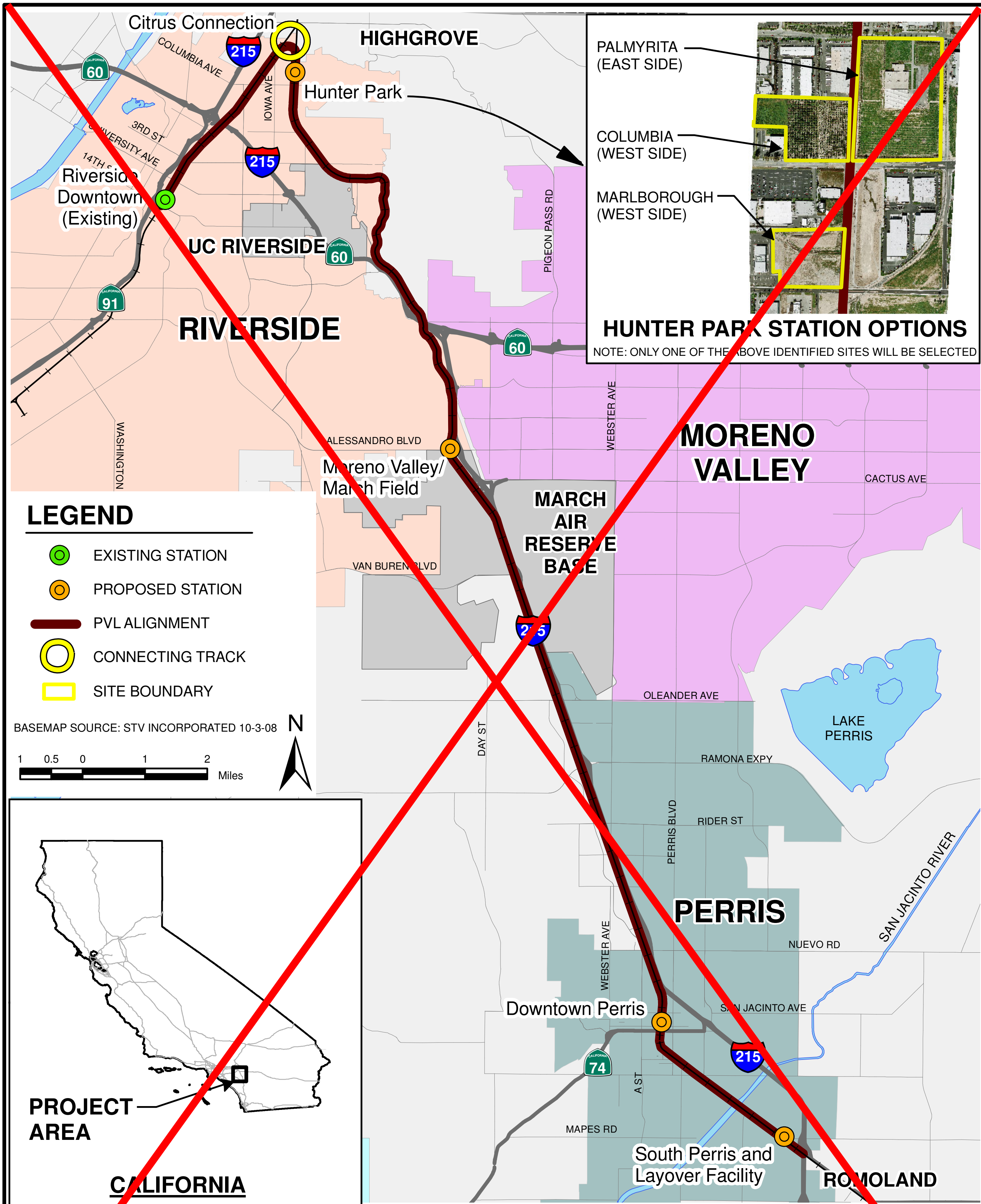
ES.2.0 PROPOSED PROJECT

The RCTC proposes to extend commuter rail service from the existing Riverside Downtown Station to south of the city of Perris in western Riverside County, California. This new rail extension, known as the PVL, would be operated by the SCRRA, the operators of the SCRRA/Metrolink commuter rail system in southern California. The PVL would be created by connecting the BNSF railroad right-of-way (ROW) to the former Atchison Topeka & Santa Fe Railroad SJBL, which is now owned by RCTC. A new connection, as shown on Figure ES.2-1, would be created to streamline operations using a curved segment of new connecting rail on parcels to be acquired north of Citrus Street in the city of Riverside.

This Page Intentionally Left Blank



PROJECT NO.	92666	**REGIONAL AND VICINITY MAP**	FIGURE
DRAWN:	12/19/11		**ES.2-1**
DRAWN BY:	JP	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
CHECKED BY:	RM		
FILE NAME:	92666vicES1.MXD		



PROJECT NO.	92666
DRAWN:	1/11/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666vicES.MXD

REGIONAL AND VICINITY MAP

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
ES.2-1

Four Americans with Disabilities Act (ADA) compliant stations with park and ride facilities would be provided at Hunter Park, Moreno Valley/March Field, Downtown Perris and South Perris. A Layover Facility for overnight storage of trains would also be provided near the South Perris station. Replacement and rehabilitation of existing rail and railroad ties would be undertaken along with installation of a nine-mile segment of bypass track along the I-215 corridor. There would be replacement of two bridges, one over the San Jacinto River (MP 20.70) and the other at the San Jacinto River Overflow Channel (MP 20.80). Existing grade crossings along the SJBL will be improved and some will be closed as part of the PVL project. Along the SJBL corridor, there would be culvert replacement at designated locations. Construction of communication towers and landscape walls would also occur at designated locations within the corridor.

The SEA evaluates potential environmental consequences of the proposed PVL project, and recommends mitigation measures, as necessary, for each environmental resource category, as identified in Table ES.2-1 and described in greater detail in Chapter 3.0. The environmental evaluations are based on preliminary engineering drawings.

Table ES.2-1
Impacts and Mitigation for the Proposed Project

Environmental Impact	Mitigation Measures
Land Use and Zoning	
None	N/A
Agricultural Resources	
None	N/A
Air Quality	
None	N/A
Noise and Vibration	
Noise • Noise impacts are predicted at areas along the SJBL in Riverside north of the UCR campus. • Noise impacts are predicted for seven residential buildings and one church in the UCR area of Riverside.	**NV-1:** ~~As shown on Figure 3.4-5, N~~Nnoise barriers shall be ~~provided~~ constructed at the following locations (based on 30% Design Drawings): o NB 1: 10' high and 530' long between Sta. 264+00 and Sta. 269+30 o NB 2: 13' high and 570' long between Sta. 269+30 and Sta. 275+00 o NB 3: 9' high and 680' long between Sta. 283+00 and Sta. 289+40 o NB 4: 12' high and 600' long between Sta. 289+40 and Sta. 295+40 o NB 5: 8' high and 530' long between Sta. 297+70 and Sta. 303+00 o NB 6: 8' high and 800' long between Sta. 303+00 and Sta. 311+00 o NB 7: 10' high and ~~700~~800' long between Sta. 322+00 and Sta. 330+00 o NB 8: 11' high and 320' long between Sta. 331+00 and Sta. 334+20 o NB 9: 13' high and 950' long between Sta. 323+40 and Sta. 332+40 o NB 10: 13' high and 250' long between Sta. 332+80 and Sta.

Environmental Impact	Mitigation Measures
	334+80 o NB 11: 9' high and 310' long between Sta. 336+00 and Sta. 339+10 o NB 12: 9' high and 310' long between Sta. 339+10 and Sta. 342+20 o NB 13: 13' high and 380' long between Sta. 342+20 and Sta. 346+00 **NV-2:** Based on the topography and engineering constraints at seven residential locations and St. George's Episcopal Church (eight properties total), the use of noise barriers will not provide adequate noise reduction. Improving the sound insulation of these properties by replacing windows facing the tracks with new sound-rated windows, as well as caulking and sealing gaps in the building envelope, eliminating operable windows and installing specially designed solid-core doors, will reduce noise to below the FTA impact criteria, and to less than significant levels. Sound insulation for eight properties shall be provided at the following locations: o Northeast corner of the grade crossing at West Blaine Street (619 West Blaine Street) o Northeast corner of the grade crossing at Mount Vernon Avenue (116 East Campus View Drive) o Southwest corner of the grade crossing at Mount Vernon Avenue (first home on Mount Vernon Avenue) o Northeast corner of the grade crossing at Citrus Street (1027 Citrus Street) o Northeast corner of the grade crossing at Spruce Street (first two homes on Kentwood Drive) o Southeast corner of the grade crossing at Spruce Street (first home on Glenhill Drive) o St. George's Episcopal Church
Vibration • Vibration impacts at specific locations in the UCR area.	**NV-3:** *Ballast Mats*: A ballast mat consists of a rubber (such as shredded rubber tires), cork or other type of resilient elastomer pad that is placed under the normal ballast, ties, and rail. The ballast mat shall be placed on a concrete or asphalt layer to be most effective. Ballast mats can provide 5 to 12 dB attenuation at frequencies above 25 to 30Hz. **NV-4:** *Resiliently Supported Ties (Under-Tie Pads)*: This treatment consists of resilient rubber pads placed underneath concrete ties. A resiliently supported tie system consists of concrete ties supported by rubber pads. The rails are fastened directly to the concrete ties using standard rail clips. * Implementation by RCTC of either one of the above described vibration mitigation measures ~~described above~~ (NV-3 or NV-4) between Sta. 263+00 and 275+00 will eliminate the 2 VdB impact predicted in the UCR area of Riverside (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of ~~Hyatt~~Highland Elementary School).

Environmental Impact	Mitigation Measures
Traffic and Parking	
Traffic impacts would be expected at ~~eight~~ three intersections: Cactus Avenue at Old 215, SR-74 at D Street, ~~San Jacinto Avenue at C Street, San Jacinto Avenue at D Street, San Jacinto Avenue at Redlands Avenue,~~and Bonnie Drive at southbound I-215 ramps~~, SR-74 at northbound I-215 off-ramp, and SR-74 at Sherman Road~~.	**TP-1:** *Cactus Avenue at Old 215 (for Moreno Valley/March Field Station)* Reduce north/southbound Old 215's maximum green time to 15 seconds during the PM (5-6 PM) analysis hour. This will reduce delays for westbound Cactus Avenue's through movement from ~~244~~240 to ~~119~~116 seconds, and improve the overall intersection LOS from LOS F with ~~152~~146 seconds of delay to LOS E with ~~76~~72 seconds of delay, while maintaining LOS C for Old 215. **TP-2:** *SR-74 (4th Street) at D Street (for Downtown Perris Station)* Reduce the maximum green time for the east/westbound SR-74 left-turn phase to 14 seconds during the PM (5-6 PM) analysis hour. The levels of service for north and southbound D Street's through/left-turn movements, and the overall intersection, will be improved beyond future levels of service without the project during the PM analysis hour with this mitigation measure. ~~**TP-3:**~~ ~~*San Jacinto Avenue at C Street (for Downtown Perris Station)*~~ ~~Reconfigure the intersection with two-way stop control on San Jacinto Avenue. Restripe northbound C Street to provide one left/through shared lane and one right-turn lane. These modifications will reduce the delays for the westbound left-turn movement and the overall intersection to LOS C during the PM analysis hour.~~ ~~**TP-4:**~~ ~~*San Jacinto Avenue at D Street (for Downtown Perris Station)*~~ ~~Install a new traffic signal. With this measure, all movements at this intersection will operate within LOS D during both the AM and PM analysis hours.~~ **TP-3~~5~~:** *Bonnie Drive at southbound I-215 ramps (for South Perris Station)* Install a new traffic signal. This will improve eastbound Bonnie Drive's right-turn movement from LOS F to LOS B during the PM (5-6 PM) analysis hour and left-turn movement from LOS F to LOS C during the AM (6-7 AM) and PM analysis hours. * RCTC shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the ~~five~~ three above-mentioned intersections will be eliminated (out of the ~~eight~~ six locations where significant impacts are expected). At the remaining three locations where significant impacts are expected (San Jacinto and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other projects ~~initiatives~~ (unrelated to the PVL) as part of the future condition without the project. Therefore, no mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these

Environmental Impact	Mitigation Measures
	three locations by other projects ~~initiatives~~ (unrelated to the PVL) does not occur prior to the opening year of the PVL, the installation of traffic signals at these additional locations ~~shall~~ will be ~~required~~ incorporated as ~~part of the~~ PVL project features. **TP-4~~6~~:** RCTC shall develop a traffic management plan in consultation with local jurisdictions to minimize impacts to existing traffic levels of service. At a minimum, the traffic management plan ~~will~~ shall address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors ~~(see HHM-3)~~.
Aesthetics	
Potential to affect nighttime views during construction at the grade crossings.	**AS-1:** ~~In order~~ T~~t~~o ~~limit~~ minimize light spill over into residential areas during construction, light attenuating barriers or directed lighting ~~will~~ shall be used.
Cultural Resources and Section 106 Compliance	
• Undiscovered cultural resources may be impacted by construction. • Unanticipated cultural resources and human remains may be unearthed during construction activities.	**CR-1:** A qualified archaeologist and a Native American monitor ~~will~~ shall monitor ground disturbing construction activities between MP 3.50 and 4.50, and between MP 5.60 and 6.50. The monitors shall also be present at the Citrus Connection, South Perris Station and Layover Facility where excavation is anticipated to be greater than four feet. These monitors ~~will~~ shall have the authority to temporarily halt or divert construction equipment to examine potential resources, assess significance, and offer recommendations for the procedures deemed appropriate to either further investigate or mitigate any adverse impacts. CA-RIV-2384, CA-RIV-4497/H and AE-CB-2 sites ~~will~~ shall be avoided during project construction through the establishment of ESA and delineated by exclusionary fencing. **CR-2:** In the event cultural resources are encountered during construction, ground-disturbing activity shall cease in the immediate area. A qualified archaeologist shall be retained to examine the materials encountered, assess significance, and recommend a course of action to further investigate and/or mitigate adverse impacts to those resources that have been encountered. Treatment measures for any newly identified NRHP-eligible archaeological sites would be negotiated among FTA, RCTC, the SOHP, and interested parties, in accordance with 36CFR800.13(b). ~~If project construction activities exceed the depth of past agricultural impacts (4 feet), monitoring would be required at the following locations: the Citrus Connection, South Perris Station, and Layover Facility, as well as two of the three potential locations for the Hunter Park Station (Columbia Avenue Station option and the Palmyrita~~

Environmental Impact	Mitigation Measures
	~~Avenue Station option). Part-time monitoring shall be conducted by a qualified archaeologist during the construction phase to determine whether significant buried cultural deposits are present. The monitor shall have the power to temporarily halt or divert construction equipment in order to examine potential resources, assess their significance, and offer recommendations for the procedures deemed appropriate to either further investigate or mitigate adverse impacts to those cultural resources that have been encountered~~. **CR-3:** In the ~~unlikely~~ event that unanticipated ~~of the accidental~~ discovery of human remains occurs during project construction, the procedures outlined in §15064.5(e) of the CEQA Guidelines shall be strictly followed. These procedures specify that~~,~~ upon discovery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains can occur. The county coroner must be contacted to determine if the remains are Native American. If the remains are determined to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall identify the Most Likely Descendent (MLD). The MLD shall make recommendations for the appropriate treatment and disposition of the remains and any associated grave goods in accordance with PRC §5097.98.
Hazards and Hazardous Materials	
Potential to encounter contaminated soil during construction.	**HHM-1:** ~~Where s~~Soil contamination is suspected~~, appropriate sampling is required prior to disposal of excavated soil. Characterization of the soil is necessary prior to any ground-disturbing activities. Contaminated soil will be properly disposed at an off-site facility. The~~ at the following ~~sites will be characterized for possible soil contamination before excavation and/or construction activities begin~~locations: • 6400 Fischer Road, Riverside - diesel AST release • 13260 Highway 215, Riverside – gasoline UST release • 2 South D Street, Perris - gasoline UST release • 24 D Street, Perris - gasoline UST release • 101 and 102 South D Street, Perris - gasoline UST release and waste oil release • 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release. Prior to construction ~~S~~soil characterization ~~activities including~~shall occur and includes sampling and analysis, and drilling ~~will~~ shall be coordinated with and under the guidance of the Riverside County Department of Environmental Health. RCTC ~~will~~ shall contract with a qualified environmental consultant to determine if the soil has been sampled, characterized and disposed of properly according to state and federal regulations. **HHM-2:** If the Palmyrita Avenue site is selected for the Hunter Park Station, but is not properly remediated prior to acquisition, RCTC ~~will~~ shall require the ~~potentially~~ responsible party to remove and remediate

Environmental Impact	Mitigation Measures
	hazardous conditions and materials pursuant to the requirements of the local, state, and federal regulations. If, prior to acquisition, the current property owner does not complete proper remediation, RCTC ~~will~~ shall perform the remediation in accordance with a Health and Safety Plan, and in accordance with the required protocols for the removal and disposal of hazardous materials. Because of the potential for soil contamination, sampling and disposal plans ~~will~~ shall be implemented ~~prior to~~ Pre-C~~c~~onstruction according to a site-specific hazardous materials investigation work plan. **HHM-3:** ~~Before~~ Prior to construction ~~activities commence,~~ RCTC ~~will develop~~shall prepare a traffic management plan. The traffic management plan shall be prepared in consultation with local jurisdictions to ~~minimize impacts to existing emergency response or evacuation routes. At a minimum, the traffic management plan would address: detours~~determine detour routes,~~;~~ ~~coordination with other construction projects (if applicable);~~ length and timing of any ~~street~~ closures,~~;~~ temporary access routes, signage, ~~length and timing of any grade crossing closures;~~ coordination with police, ~~and~~ fire departments, and nearby schools regarding changes in emergency access routes~~; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors (see TP-6)~~. An additional component of the plan shall be coordinating with local emergency response agencies to identify emergency evacuation routes in the event of a wildland fire near PVL facilities. This traffic management plan is the same as the traffic management plan required by Mitigation Measure TP-4. **HHM-4:** ~~Before construction activities commence, RCTC will develop a traffic management plan. The contractor will also work with local jurisdictions to minimize impacts to existing emergency response or evacuation routes for wildland fires. At a minimum, the traffic management plan will address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and would contain contact information for RCTC and the project contractors~~See Mitigation Measure HHM-3 above.
Utilities and Service Systems	
None	N/A
Section 4(f) Evaluation and Parklands	
None	N/A
Environmental Justice and Socioeconomics	
None	N/A
Safety and Security	
None	N/A
Americans with Disabilities Act Compliance	
None	N/A

Environmental Impact	Mitigation Measures
Biological Resources	
• Impacts to habitat within both USACE and CDFG jurisdictional areas may occur in areas where culvert work would take place. • Potential impacts to threatened or endangered species.	**BR-1:** The~~A~~ project biologist shall prepare and conduct ~~a training session for all~~pre-construction training for project personnel prior to any ~~grading/construction~~ground disturbing activities. At a minimum, the training shall include a description of the target species of concern, its habitats, the general provisions of the ESA and the MSHCP, the need to adhere to the provision of the MSHCP, the penalties associated with violating the provisions of the ESA, the general measures that are being implemented to conserve target species of concern as they relate to the project, any provisions for wildlife movement, and the access routes to and from project site boundaries within which the project activities must be accomplished. **BR-2:** Equipment storage, fueling and staging areas ~~will~~ shall be located to minimize the risks of direct drainage into riparian areas or other environmentally sensitive habitats. The project specific SWPPP ~~will~~ shall identify appropriate construction related BMPs (such as drip pans, straw wattles, and silt fence) to control anticipated pollutants (oils, grease, etc.). **BR-3:** Stockpiling of materials ~~will~~ shall be limited to disturbed areas without native vegetation, areas to be impacted by project development or in non-sensitive habitats. These staging areas ~~will~~ shall be approved by the project biologist, and shall be located more than 500 feet from environmentally sensitive areas. **BR-4:** “No-fueling zones” ~~will~~ shall be established ~~within a minimum of~~at least 10 meters (33 feet) from drainages and fire sensitive areas. **BR-5:** The ~~qualified~~ project biologist ~~will~~ shall monitor construction activities at a minimum of three days per week throughout the duration of the project to ~~assess if practicable~~ensure mitigation measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. Construction monitoring reports ~~will~~ shall be completed ~~with applicable conditions~~describing field conditions and construction activities. The project biologist ~~will~~ shall be empowered to halt work activity if necessary to confer with RCTC ~~staff~~ to ensure the proper implementation of species habitat and habitat protection measures. **BR-6:** To avoid attracting predators that may prey upon protected species, the project site ~~will~~ shall be kept clean of trash and debris. Food related trash items ~~will~~ shall be ~~enclosed~~ disposed of in ~~a~~ sealed containers and removed from the site with regular trash removal, at least weekly. Pets of project personnel ~~will~~ shall not be allowed on site. **BR-7:** If dead or injured listed species are located, initial notification must

Environmental Impact	Mitigation Measures
	be made within three working days, in writing to the USFWS Division of Law Enforcement in Torrance California, and by telephone and in writing to the applicable jurisdiction, Carlsbad Field Office of the USFWS, and the CDFG. ~~Ontario office.~~ **BR-8:** Narrow Endemic Plants have the potential to occur in the areas near the San Jacinto River. If Narrow Endemic Plants are identified 90% of the population ~~will~~ shall be preserved, as required in the MSHCP. **BR-9:** There is a potential to impact western spadefoot toads with the work on the San Jacinto River Bridge and Overflow Channel Bridge. A pre-construction survey for western spadefoot toads shall be conducted within 30 days prior to site disturbance to determine if western spadefoot toads are present within the designated construction area. Should western spadefoot toads be identified within the construction area, the project biologist shall prepare a relocation program that shall be approved by RCA and implemented prior to ground-disturbing activities in the area. ~~will determine if toads are present within the designated construction area. Should spadefoot toads be identified within the construction area, an approved mitigation program will be implemented~~. **BR-10:** The MSHCP requires both protocol surveys and preconstruction surveys for burrowing owls. Pre-construction surveys shall be conducted within 30 days prior to ground disturbance to avoid direct take. If owls are found to be present, the following measures will be implemented; prior to burrowing owl nesting season, passive relocation will occur and active burrows will be destroyed; after burrows are destroyed, artificial burrows will be created in suitable habitat that is contiguous with the foraging habitat of affected owls; a monitoring plan will be implemented to monitor the success of the mitigation program. ~~If owls are identified during the preconstruction survey, the appropriate action will be determined. The appropriate action could include avoidance and passive or active relocation efforts~~. **BR-11:** If nests are identified at the billboards located on the I-215 corridor, then a ~~qualified~~ project biologist ~~must~~ shall determine if the nests are active. If the biologist determines a nest to be active, appropriate buffers ~~will~~ shall be used until the birds have fledged and the nest ~~will~~ shall be removed with the approval of regulatory agencies. **BR-12:** There is a potential for impacts to southwestern willow flycatchers in the southern area of the Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (~~end of April to early September~~May 15^{th} to July 17^{th}) [~~(~~Santa Ana Watershed Association (SAWA), 2004~~9~~]~~)~~. **BR-13:** There is a potential for impacts to least Bell's vireo in the southern

Environmental Impact	Mitigation Measures
	area of Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be conducted ~~completed~~ outside the bird breeding season (~~end of March to the end of September~~April 10th to July 31st) (SAWA, 200~~9~~4). **BR-14:** The project is within the SKR Fee area. RCTC ~~will~~ shall pay~~, to the SKR fund managed by Riverside Habitat Conservation Agency, the required~~ $500 per acre to the SKR for development outside the existing right-of-way. This fee shall be paid at the time of the grading permit submittal. The fee will include sites for the Citrus Connection, ~~fee for developing the~~ Hunter Park Station, ~~Downtown Perris Station,~~ South Perris ~~Station~~, and Layover Facility (approximately 65 acres). **BR-15:** There is a potential for impacts to California horned lark in the area of the South Perris Station option and the Layover Facility if the agricultural fields are allowed to fallow. To avoid potential impacts to nesting birds, the ground preparation work ~~will~~ shall be conducted outside of the bird nesting season (March 1st to July 31st) (County of Santa Barbara, 2009) and maintained to ensure that no birds then use the area for nesting prior to construction. **BR-16:** There is a potential for impacts to the coastal California gnatcatcher within the Box Springs ~~Canyon~~ Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be conducted ~~completed~~ outside the bird breeding season (~~mid~~ February 15th to ~~mid September~~August 30th) (SAWA, 2004). **BR-17:** ~~Jurisdictional areas associated with the replacement of culverts would result in impacts to habitat within both USACE and CDFG jurisdictional areas.~~ Prior to any construction ~~these~~ impacts to jurisdictional areas, RCTC shall obtain ~~would require~~ permit approval from the USACE, CDFG and the RWQCB. The mitigation for jurisdictional area impacts will be to purchase mitigation credits at a 1:1 ratio (total of 0.41 acres) from a local mitigation bank.~~ratios are finalized by the USACE and CDFG during permitting for the project. The permitting application is not deemed complete until the CEQA document is adopted by RCTC~~.
Geology and Soils	
None	N/A
Water Quality	
None	NA
Floodplains	
None	N/A

Environmental Impact	Mitigation Measures
Paleontological Resources	
Undiscovered paleontological resources may be encountered during construction.	**P-1:** Ground-disturbing activities shall be monitored by a qualified paleontologist at the ~~following locations: portions of the SJBL alignments,~~ Moreno Valley/March Field Station, Downtown Perris Station, South Perris Station, and Layover Facility, as well as two of the three potential locations for the Hunter Park Station (Columbia Avenue Station option and the Palmyrita Avenue Station option) where excavation is anticipated to be deeper than four feet. The monitor shall have the ~~power~~ authority to temporarily halt or divert construction equipment to allow for ~~the~~ removal of specimens. The monitor shall be equipped to salvage any fossils unearthed during project construction, and shall be prepared to collect sediment samples that are likely to contain the remains of small fossil invertebrates and vertebrates. To ~~fully~~ mitigate adverse impacts to any paleontological resources encountered during construction, ~~all~~ recovered specimens shall be identified, prepared for permanent preservation, and curated at the San Bernardino County Natural History Museum with permanent retrievable paleontological storage. ~~Finally, a~~A report of findings ~~which~~ that includes an itemized inventory of specimens shall ~~be prepared and submitted to RCTC along with confirmation of the~~accompany the recovered specimens for curation and storage. **P-2:** In the event ~~that unanticipated~~ paleontological resources are encountered during ~~the proposed PVL project~~ construction, ~~all~~ ground-disturbing activity shall cease in the immediate area. ~~until the services of a~~A qualified paleontologist ~~are~~ shall be retained~~. The paleontologist shall~~ to examine the ~~findings~~materials encountered, assess ~~their~~ significance, and ~~offer recommendations for the procedures deemed appropriate~~ recommend a course of action to ~~either~~ further investigate and/or mitigate adverse impacts to those resources that have been encountered.
Indirect and Cumulative Effects	
None	N/A

ES.3.0 PURPOSE AND NEED

As part of the overall transportation planning process and to assess the benefits and impacts of establishing commuter rail service along the SJBL, RCTC, in cooperation with the FTA, conducted an AA in 2004. The AA is the process for reaching a broad consensus on what type of improvement(s) best meet locally defined Goals and Objectives for a specified study area. The goal of the AA is to identify transportation and community related needs within the study area and develop transit solutions to meet those needs.

The Purpose and Need for the proposed project, as established in the FTA-sponsored AA process, was developed based upon understanding of the transportation conditions, problems, and issues in the study area that would need to be addressed by a major transportation investment.

ES.3.1 Purpose

Based on the analysis and discussion provided in the AA, it is clear that the study corridor requires an improved and/or upgraded transportation system that does not solely rely on the ever growing and increasingly congested roadway system. The purpose of transportation improvements is to provide alternatives to help alleviate traffic congestion on the freeway segment and arterials in the study area, thus improving the mobility of people and goods. The improvements should also provide or improve linkages to the overall transportation system, support the achievement of regional air quality goals, and avoid environmental and community impacts to the extent possible.

ES.3.2 Need

Currently, the major transportation facilities in the corridor, the I-215 and SR-60 freeways, are experiencing unsatisfactory levels of service. A major bottleneck occurs where the two routes merge between Riverside and Moreno Valley. These freeways are forecasted to continue with unsatisfactory levels of service, even with the several programmed roadway improvements that include a range of capacity improvements. It is not expected that existing roadway facilities would be able to keep pace with the projected demand resulting from population, employment and development growth in the study corridor.

ES.4.0 ALTERNATIVES CONSIDERED

The AA identified five alternatives (No Project Alternative, Express Bus Alternative, and three new Commuter Rail Alternatives), as defined below.

ES.4.1 No Project Alternative

The No Project Alternative was defined as implementation of the planned long-range improvements to the existing highway network, along with the continuation of current commuter rail and freight services on existing routes. The existing Metrolink commuter rail service from Riverside to the Los Angeles – Union Station would continue, as would Metrolink service to Orange County. BNSF, which operates along the SJBL under agreement with RCTC, would continue freight service. This alternative would not provide a different mode of passenger transportation between Riverside and Perris, and would not meet the transportation goals of the

RCTC. The No Project Alternative is required by NEPA and provides a baseline against which the effects of the Build alternatives are analyzed.

ES.4.2 Express Bus Alternative

To evaluate whether more efficient use of existing facilities and transit services could address the transportation problems in the study area (the purpose of a transportation systems management option), an Express Bus Alternative was developed. The Express Bus Alternative was defined as service that would begin in Perris in the morning period, near the intersection of SR-74 and I-215. It would operate northward from Perris on I-215, within HOV lanes wherever available. All stops along I-215 were proposed to include park and ride facilities. To operate, the express buses would enter and exit HOV lanes by crossing mixed-flow lanes. At the Alessandro station, the service would run on local streets to a proposed Box Springs express bus station. The service would then return to I-215/SR60 until exiting to connect to the transit hub at the University of California-Riverside. Local roads would be used to connect to the Riverside Downtown Metrolink Station; there would also be service to the Riverside Transit Agency Downtown Bus Terminal in downtown Riverside. The express bus service would be coordinated to reach the Riverside Downtown Metrolink Station during peak periods such that connections could be made to departing (AM) and arriving (PM) trains. The afternoon schedule would be similar, but reversed.

This alternative was not selected because the several crossings of mixed-flow traffic resulted in significant increases in travel time and the performance of the alternative was deemed insufficient to meet the needs of commuters in the corridor, therefore not meeting the Purpose and Need established for the project.

ES.4.3 New Commuter Rail Alternatives

Three new commuter rail alternatives were evaluated in the AA. Presented in Chapter 2, these alternatives are known as the Commuter Rail with New Connection to Union Pacific Riverside Industrial Lead (UP RIL) Alternative, the Commuter Rail with Highgrove Turnback Alternative, and the Commuter Rail with New Connection to BNSF at Citrus Street Alternative ("Citrus Connection"). The differences among the three commuter rail alternatives pertain to the different connection options to connect the SJBL to the BNSF for service to the Riverside Downtown Station.

The UP RIL Alternative was originally the LPA, and was presented as such in the Draft EA. However, subsequent to the Draft EA, the UP RIL Alternative was dropped from consideration due to difficulties with acquisition of the UP RIL. Further, as noted in the 2004 Draft EA, this alternative resulted in significant vibration impacts, and had displacement impacts that neither of the other commuter rail alternatives would induce.

The Highgrove Turnback Alternative was eliminated in the AA due to a required reverse move and the Federal Railroad Administration (FRA) safety check, along with train capacity constraints, which resulted in it being unable to meet the project's Purpose and Need.

RCTC adopted the "Citrus Connection" as the LPA in April 2008. Among the reasons for adopting this alternative (as compared to the UP RIL Alternative), and described in Chapter 2, are: minimizing the impacts to the community by reducing business relocation; decreasing the cost of ROW acquisitions; and providing better service to the Highgrove and Hunter Park areas. This alternative most closely meets the Purpose and Need, and Goals and Objectives, established for the project in the AA.

ES.5.0 PUBLIC COMMENT ON THE SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Notification of the SEA's 30-day public review period will be published in newspapers within the study area. The notification will outline a brief description of the proposed project; locations where the SEA is available for review; the 30-day period during which comments can be submitted; and how and where comments may be submitted.

In addition to the publication of the notification in area newspapers, notifications will be mailed by RCTC to property owners who are most likely to be affected by the proposed project. All notices state where copies of the SEA may be reviewed. The SEA is also available for review on both the PVL website: www.perrisvalleyline.info and the RCTC website: http://www.rctc.org/.

This Page Intentionally Left Blank

1.0 PROPOSED PROJECT

1.1 INTRODUCTION

The Riverside County Transportation Commission (RCTC) proposes to extend commuter rail service from the existing Riverside Downtown Station to south of the city of Perris in western Riverside County, California. This new rail extension, known as the Perris Valley Line (PVL), will be operated by the Southern California Regional Rail Authority (SCRRA), the operators of the SCRRA/Metrolink commuter rail system in southern California.

This Supplemental Environmental Assessment (SEA) is being prepared for the Federal Transit Administration (FTA), who is the lead agency to comply with the National Environmental Policy Act (NEPA) requirements. This document will provide a project update to the Draft EA originally prepared and distributed in 2004. The SEA reflects the Purpose and Need, as well as Goals and Objectives that were evolved through the 2004 Alternatives Analysis (AA). Public input gathered in response to the AA and Draft EA has also guided the development of modal options considered. Since the completion of the AA and Draft EA, the proposed project has been more clearly defined, and the LPA has changed. In 2008, RCTC selected the Commuter Rail with New Connection to BNSF at Citrus Street Alternative (“Citrus Connection”) as the LPA.

FTA has directed the preparation of this SEA to revise the previously prepared Draft EA because of the length of time that has elapsed and the selection of a different LPA. Accordingly, this SEA replaces the 2004 Draft EA in its entirety. ~~Note that no new public scoping was undertaken as part of the updated SEA.~~ The Draft SEA was available for public review (December 1, 2010 to January 6, 2011), comments were received and addressed, and are included in the Final SEA (see Volume 1). This Final SEA has been made for public review pursuant to 23 CFR 771.119(h). ~~A new 30-day public comment period will be initiated with this SEA.~~

This SEA will assist FTA in determining the significance of environmental impacts resulting from the PVL project, which the FTA has previously approved as qualifying under the FTA Small Starts category (49 United States Code [USC] Section 5309). This qualification/approval is based on the preliminary estimates that the project is expected to cost less than 250 million dollars and require less than 75 million dollars in federal funding. RCTC has made the application for federal funding, and the balance would be paid through Proposition A bond proceeds. Proposition A is a key funding source for transportation improvements and projects. In the past, Proposition A has funded municipal transportation projects, improved bus service, and initiated plans for a rail system that continues to be expanded today.

~~If i~~It is anticipated ~~determined~~ that the PVL would not result in a significant impact to the environment with implementation of mitigation measures, and a Finding of No Significant Impact (FONSI) will be prepared to conclude the process and formally document the decision. The final determination will be made after the public availability period for the Final SEA ends. ~~If FTA determines that there may be environmental impacts from the proposed project, an Environmental Impact Statement (EIS) may be required.~~

A California Environmental Quality Act (CEQA) document has been prepared separately for this project with RCTC as the CEQA lead agency. The CEQA document, an Environmental Impact

Report (EIR) was circulated for public and agency review and comment on April 5, 2010. After comments were received and addressed, the Final EIR was certified on July 25, 2011. Additionally, it should be noted that an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared previously and circulated for public review and comment in January 2009. After careful consideration of public comments received, RCTC decided to discontinue the IS/MND process and instead prepare an EIR.

1.2 IDENTIFICATION OF THE PROPOSED PROJECT

The proposed PVL project is located in the western Riverside County region of southern California. The project is approximately 70 miles east of Los Angeles, and the study area includes the cities of Riverside, Moreno Valley, and Perris. The study area includes an existing transportation corridor which extends approximately 24 miles southeast from Riverside to south of Perris.

The proposed project would extend commuter rail service from the existing Riverside Downtown Station to south of the city of Perris, providing an extension of the existing SCRRA/Metrolink commuter rail service from Los Angeles Union Station (LA Union Station). The PVL would be created through the use of existing rail rights-of–way (ROW) with a short new rail connection, as described below.

In the city of Riverside, the PVL would connect to the existing Riverside Downtown Station from the existing Burlington Northern Santa Fe (BNSF) ROW, an approximately three-mile segment of rail currently operating with freight and commuter service. From the existing BNSF ROW, the PVL would operate on a new curved rail segment, known as the Citrus Connection, which would connect the BNSF and the San Jacinto Branch Line (SJBL). The Citrus Connection would be constructed on property to be acquired, located north of Citrus Street and Springbrook Wash, in Riverside. The eastern end of the Citrus Connection would link to the existing 21-mile SJBL alignment to extend south of Perris. The PVL project would be supplemented with limited acquisition of properties to create support facilities, including station areas and a Layover Facility. It is anticipated that the PVL project would offer commuter rail service starting in ~~2012~~ 2014 with stations at Hunter Park (~~one of three evaluated locations~~Marlborough site has been selected), Moreno Valley/March Field, Downtown Perris, and South Perris, and a Layover Facility. This schedule revision does not result in any substantive changes that warrant revising any of the existing analyses.

1.3 PROJECT AREA AND BACKGROUND

Existing conditions within the project corridor include established rail lines that were constructed in the 19th century. Originally known as the Atchison Topeka & Santa Fe Railroad (AT&SF), the existing BNSF railroad mainline was constructed between 1885 and 1888 by the Santa Ana & Los Angeles Railway Company. This line originally extended southwest from Highgrove and Riverside to Santa Ana in Orange County where it connected with existing lines in Los Angeles (Myra L. Frank & Associates, Inc. [MFA], 2003).

Before the construction of the BNSF mainline, the segment of the alignment now known as the SJBL was constructed in two segments over a six year period. The California Southern Railroad completed construction of the first segment between Highgrove and Perris in 1882 to serve as part of its San Bernardino to National City mainline. The second segment between Perris and San Jacinto was completed in 1888 (MFA, 2003). Both the current BNSF ROW and SJBL ROW are within their same respective corridors as originally constructed in the late 1880s.

Connecting the San Jacinto Valley with major coastal cities such as Los Angeles and San Diego by railroad contributed to the success of local agricultural economies. Farmers and ranchers built sidings along the SJBL to load produce and other farm products directly onto the trains. In addition to transporting agricultural goods, the railroad also provided passenger service to Los Angeles (Applied EarthWorks, Inc. [AE], 2009).

Later, the SJBL was acquired by AT&SF and then by RCTC in 1993. Through its operating agreement with RCTC, BNSF (AT&SF's successor) provides limited freight service to customers along the SJBL, primarily along the Interstate 215 (I-215) corridor. Both the SJBL and the BNSF lines are currently used for freight operations. The BNSF mainline also accommodates Inland Empire – Orange County trains operated by SCRRA/Metrolink.

Currently, western Riverside County is linked to the coastal counties by three direct commuter rail routes via a station stop at the Riverside Downtown Station. Both the Riverside Line and the 91 Line connect to Los Angeles Union Station. The Inland Empire – Orange County Line parallels the 91 Line and then turns south to destinations in Orange County. These three existing SCRRA/Metrolink commuter rail lines would serve (link to) the proposed PVL via the Riverside Downtown Station, providing improved access between the study area and the adjacent coastal counties served by SCRRA/Metrolink.

The 1993 acquisition by RCTC of the entire length of the SJBL presents the opportunity to utilize the SJBL for an extension of the existing commuter rail service into the study area. Additionally, it should be noted that RCTC is a member agency of SCRRA/Metrolink. In the capacity of a member agency of SCRAA/Metrolink and the project proponent, RCTC has previously donated $26,000 to Riverside to study the potential for "quiet zones" at the grade crossings in Riverside.

University of California, Riverside Station

The University of California, Riverside (UCR) Station was previously evaluated in the Draft EA and California Environmental Quality Act (CEQA) IS/MND which was publicly circulated in 2004 and 2009, respectively. The UCR Station would have been located within the SJBL ROW along Watkins Drive in Riverside. In response to input from the surrounding neighborhood, the station would have provided for passenger drop-off and pick-up only ("kiss and ride"), but no parking. However, further input from the neighborhood during the public review and comment period for the CEQA IS/MND resulted in the removal of the UCR Station as part of the PVL. It should be noted, the General Plan for the City of Riverside does identify a station in the UCR neighborhood.

Highgrove Option

The concept of a Metrolink Station in the Highgrove area has been raised by members of the public throughout RCTC's commuter rail planning process. In response, RCTC studied the concept on a number of occasions between 1994 and 2010. The ~~studies~~ evaluations consistently reaffirm that a Highgrove a~~A~~rea s~~S~~tation is not a ~~viable~~ feasible option for the PVL project. Below is an explanation of why the Highgrove area station is not feasible.

During the planning period for the proposed project, site conditions have changed at the commenter's Highgrove area station site. The previously undeveloped 34± acres of private land now has an approved Parcel Map and Design Review (Planning Case P06-1506 and P06-1508) from the City of Riverside (November 2007) for development of the Citrus Business Park. Improvements to the property will include constructing four new industrial buildings (509,787 square feet). Access was approved via Citrus Street; emergency access is via Villa Street.

With public access to the site limited to Citrus Street, access across Springbrook Wash is the only way to access the two designated parcels north of the Wash. This area, north of the wash, was approved for two industrial buildings as part of the approval for the Citrus Business Park. The approved access is from a new crossing constructed on the western portion of the site, adjacent to the BNSF right-of-way. Since the approval of the Citrus Business Park, the two industrial buildings south of Springbrook Wash have been constructed. As such, the existing condition for the commenter's proposed Highgrove station site consists of two industrial buildings with access from Citrus Street and a crossing at Springbrook Wash at the western boundary of the property adjacent to the BNSF.

The proposed PVL project would construct the Citrus Connection on the two parcels north of Springbrook Wash. As discussed in the environmental document, the Citrus Connection would connect the BNSF main line with the SJBL/RCTC ROW via a short curved track to be constructed. This would replace the two industrial buildings proposed for this northern area.

In addition to the approved Citrus Business Park, the City of Riverside is scheduled to start construction of a railroad grade separation at Iowa Street on the BNSF main line. The planned grade separation would allow Iowa Street to be raised over the BNSF main line between Palmyrita Street and Spring Street. Citrus Street would remain in the current configuration but only a right turn in/right turn out would be allowed to and from Iowa Street.

It should also be noted that construction has started on the Spring Mountain Ranch development, along the northern section of Pigeon Pass Road. The Riverside County Transportation Department (RCTD) is currently studying alternatives for roadway alignment through the development to connect Pigeon Pass Road with the City of Riverside. Currently, neither Center Street nor Villa Street (Highgrove area) connects to the east to provide access to the Spring Mountain Ranch area. The closest connection for Pigeon Pass Road would be at Marlborough Street which allows access to the Hunter Park Station. These alignments will continue to be studied by RCTD.

~~Starting~~ The planning history began in 1988 when~~,~~ RCTC initiated studies of potential station sites on the BNSF mainline to serve future commuter rail service to Orange County. As a result, RCTC decided to purchase passenger rail operating rights on the BNSF. As the Metrolink system expanded within Riverside County existing stations were reaching capacity and various station selection studies were undertaken. Unlike other Metrolink member agencies, RCTC takes responsibility to fund the capital and operating costs for Metrolink Stations within the county. As such, RCTC takes into account ~~both~~ capital, operation, and maintenance costs when evaluating station locations.

Commuter rail station siting and selection considerations are based on a number of factors, including projected ridership and revenue; operational requirements; geographic spacing in relation to other stations; right of way requirements and availability; local conditions such as surrounding land use and traffic circulation; and rail configuration. Additionally, both the BNSF and the CPUC prefer the Marlborough Station location over the Highgrove site. The BNSF is concerned the Highgrove station location would cause increased congestion on the main line and not be a feasible option (Project Meeting, February 25, 2009). The CPUC identifies the Marlborough Station as the preferred location because of the existing roadway access. The Highgrove station would require two new grade crossings while Marlborough would not require any (email communication, Bill Lay, CPUC to Francisco Duarte, STV Incorporated, February 2, 2011) ~~The Highgrove Area Station fails to adequately meet these considerations~~.

From an engineering perspective, the Highgrove area station is infeasible for the reasons enumerated below:

Prior to planning the PVL project, RCTC received public input concerning the construction of~~ng~~ transit facilities in the Highgrove area. The desired facilities included locating a station on the BNSF mainline near Citrus and Villa Streets. RCTC has revisited the feasibility of this option numerous times in the past (1994, 1999, 2003, 2007, and 2009). In general, the concerns ~~initially~~ identified by RCTC in early ~~studies~~ evaluations have not changed over the years. During a January 2006 evaluation, RCTC identified ~~five~~ the following key reasons to decline development of a Metrolink commuter rail station at Highgrove area on the BNSF ~~which are listed below. The findings included~~:

1) Public preference was to expand existing stations (38%) compared to construction of brand new stations (only 6% of the public wanted a Highgrove option when compared to three other station sites);

2) Constrained Operating Environment – Highgrove weekday volume ranks the lowest in comparison to the current train volumes for the five existing RCTC Metrolink stations. The closest station (existing Riverside Downtown Station) to the Highgrove area is only 3.7 miles away. The Riverside Downtown Station train volume is more than 4 times that of a potential Highgrove option. Riverside Downtown serves three commuter lines while Highgrove would serve just one line.

~~3) A feasibility study was performed for Highgrove to determine current and projected ridership forecasts. The results indicated that ridership is very low compared to actual trips at the existing stations.~~

~~4) Highgrove serves a limited number of commuter trains combined with low ridership and high capital costs. Construction of a Highgrove option was estimated to be $15M - $20M with annual operating costs estimated at $200K - $250K. RCTC determined this would not be cost effective.~~

~~5~~3) It was determined that the opportunity to have a station site on the RCTC owned SJBL alignment, at a location just south of the Highgrove area (Hunter Park region), would be a better solution instead of ~~needing to~~ purchasing~~e~~ property from BNSF.

The Hunter Park Station would also allow for commuters from the east within the Spring Mountain Ranch development the shortest access via Marlborough Avenue or Palmyrita Street (which connects to the development directly). Neither Citrus Avenue nor Villa Street connect east across the SJBL/RCTC and Union Pacific ROW to allow access to a station from the east.

Subsequently, after the January 2006 presentation, members of the public requested additional ~~studies~~ evaluations to determine the viability of the Highgrove s~~S~~tation option as part of the PVL project. In February 2009 RCTC requested STV Incorporated to prepare a Highgrove Station Site Plan Study. The results of this study indicated 13 impediments to the construction of a Highgrove Station. On September 19, 2009, Barney Barnett submitted a letter rebutting STV Incorporated's study. STV Incorporated prepared a response to Mr. Barnett's rebuttal by letter dated January 11, 2010. A summary of STV's response is outlined below:

- (1) Reconfiguration of the Villa Street grade crossing ~~and~~ would be necessary. This would include extensive and costly safety and engineering enhancements to address a number of potential vehicular and pedestrian safety issues. In addition, the City of Riverside will not allow regular truck and vehicular access from Villa Street to the northern parcels in the Parcel Map and Design Review document dated November 8, 2007 (Planning Cases P06-1506 and P06-1508) that would cause adverse impacts the existing adjacent residential neighborhood. The CPUC indicated, in a project email, dated February 2, 2011, between Bill Lay, CPUC and Francisco Duarte, STV Incorporated, that the CPUC would be opposed to a station at Highgrove because it would be necessary to improve two grade crossings when no grade crossings would require improvements at Hunter Park.

- (2) Extending Spring Street westward through an existing vacant residential property and creating a new vehicular and pedestrian grade crossing creates risks of train and vehicular/pedestrian collisions and is not feasible for the same reasons as accessing the site from Villa Street. In addition, the CPUC has reviewed the Highgrove alternative and prefers the Hunter Park Station (Marlborough alternative) because of the close proximity of the two sites and existing crossings provide access to the Hunter Park Station (Marlborough alternative). The CPUC implementation practice for General Order Number 88-B is to not allow the construction of new at-grade crossings when not absolutely necessary. The CPUC views new at-grade crossings at Spring Street or over the Citrus Connection track as not absolutely necessary because of the option for a station to be located at Hunter Park (email communication, Bill Lay, CPUC to Francisco Duarte, STV Incorporated, February 2, 2011).

- (3) The existing topography and evidence of substantial ponding on either sides of the crossing within the right-of-way (ROW) indicate serious drainage and visibility problems that would need to be addressed by extensive excavation and grading. Such work would add substantial construction and operational/maintenance costs and would also introduce new impacts to soils, geology and air quality during excavation. Thus, it's not "environmentally friendly" as commenter claims.

- (4) Diverting traffic into the Villa Street neighborhood to access the station parking on the northern parcels is not viable because the City of Riverside will not allow regular truck and vehicular access from Villa Street to the northern parcels. This limitation was stated as a condition of approval in the Parcel Map and Design Review document dated November 8, 2007 (Planning Cases P06-1506 and P06-1508). The City of Riverside indicated that Villa Street could only be used for emergency access into the site.

- (5) The original estimate in the 2009 Site Plan Study of 7 acres of available land for parking was based upon utilizing only the parcel north of the Citrus Connection track. Due to further design development and moving the Citrus Connection track further north to avoid the Springbrook Wash conservation easement, the northern parcel area available for parking has been reduced. STV Incorporated has reevaluated the available land for parking and included a portion of the parcel south of the Citrus Connection track in parking land area calculation netting approximately 9.3 acres total available land for parking. Although, considering the size, shape and configuration of the parcels available, a less than efficient parking plan would be the result. The actual area available for parking in the Citrus Connection area is slightly less than the Marlborough alternative containing 9.5 acres. The current total area north of Springbrook Wash is 16.47 acres. This 16.47 acres would then have the Citrus Connection track through the center of it which would allow for a "usable" area of 6.6 acres. Access to the approximately 6.6 acres on the north parcel would be dependent upon a vehicular undercrossing beneath the Citrus Connection track due to the access restrictions at Villa Street discussed above. The land area needed for an undercrossing would severely restrict the 6.6 acres available.

- (6) RCTC cannot limit access to the western driveway to only Metrolink passengers. The existing western driveway is shared access with the current property owner of the parcels (currently an existing industrial warehouse use) south of the Springbrook Wash forcing passenger traffic to mix with semi-truck traffic, creating an unsafe condition for access to the station parking. Per an easement in the Covenants Codes & Restriction's for the purchase of the property by RCTC, access from this western driveway must be maintained for the owner of existing warehouse development. Any parking facilities located within the parcel area south of the Citrus Connection track are limited by the California Department of Fish and Game 50 foot' setback from the Springbrook Wash due to Condition 22 of the Agreement Regarding Proposed Stream or Lake Alteration imposed on the subject property dated 5/30/08.

- (7) The only viable location for disabled parking is immediately adjacent or in the near vicinity of the platform and the ticket vending machine which would be in the western drive and does not fit due to the placement of the adjacent warehouse building. The alternative is to place the disabled parking north of the Springbrook Wash which would impose an unreasonable travel distance (in excess of 800 feet) from the closest parking spaces to the ticket vending machine and platform for disabled passengers.

- (8) BNSF representatives have stated that they prefer not to have a platform in their ROW in this location due to operational congestion and track capacity because of the high volume of freight traffic on their Main Line (Project Meeting, February 25, 2009).

- (9) The Highgrove station would require an inner-track fence to separate the station track (4th track) from the three BNSF Main Line tracks for safety reasons. This would move the 4th track further east, thus requiring a design modification to the Citrus

Connection curve increasing the degree of the curve causing decreased train speed, higher wheel noise, and higher maintenance due to the increased wear on the track. In addition, the minimum width with required clearances (approximately 44 feet) would force the platform to encroach into the driveway. Per an easement in the Covenants, Codes & Restrictions (CC&R's) for the purchase of the property by RCTC, access from this western driveway must be maintained for the owner of the warehouse development on the southern parcels.

- (10) There is adequate bus service to the area proposed for the Highgrove station alternative, but there would be no on-site bus drop-off area near the platform because of the constrained space between the platform and the existing open access driveway. Bus passengers would be dropped off curb-side on either Iowa Avenue or Citrus Street.

- (11) Reconfiguration of Citrus Street would be required. It is agreed that the Citrus Street connection to Iowa Avenue will remain unchanged. Because of the length of the platform and the required distance (150') from the switch for the Citrus Connector track, reconfiguration, including real property acquisition on the east side of the street, would be required to move Citrus Street eastward where it curves adjacent to the BNSF Main Line ROW. This would result in an increase in project cost related to the property acquisition and the road reconfiguration. These costs would not be required for the Hunter Park station location.

- (12) A possible option to attempt to accommodate a station in the Highgrove location just south of the Citrus Connection is for RCTC to purchase the western-most building and property of the existing warehouse development, demolish the building, and convert the property to on-site bus drop-off, disabled parking, and kiss-and-ride (drop off area with no parking) drop-off. This option presents traffic and congestion challenges due to the single entry and exit for passenger vehicles and buses. This would also require the demolition of the newly constructed industrial buildings at the site. Additionally, the vehicular access issues discussed above for the parcels north of the Citrus Connection would remain unchanged due to restrictions from the City of Riverside and CPUC.~~and extensive safety and engineering enhancements is costly and poses potential vehicular and pedestrian safety issues. There is limited parking capacity available at the Highgrove site; bus and public access to the site has moderate to severe traffic congestion implications to the neighborhood. The site plan also reveals potential impacts to environmental justice issues that would require acquisition of real estate. Platform configuration is not feasible in terms of location, operational congestion, track capacity, and public access specifically for handicapped patrons. Additionally, Citrus Street would need to be reconfigured, and access from Iowa Avenue, due to the planned grade separation, would require stairs and an elevator to access the station. The latest study indicates an estimated cost increase of about $6M in construction ($12M in project costs) in addition to the estimated construction cost for the Hunter Park area station, which is $7.2 million ($14.4 project cost). ROW acquisition cost is not included in this estimate~~.

As a result of additional study subsequent to the Site Plan Study prepared by STV Incorporated dated 2/27/09, the difference in cost to locate a station at this Highgrove site is now estimated at an additional $35 Million to $45 Million.

Many commenters suggested that the "existing" depot in Highgrove could be used as a station site to avoid the cost of constructing a new station. However, there is no existing Highgrove depot. The Highgrove depot was originally located just south of Center Street and was demolished in 1953. The former depot location is located approximately 2,300 north of Citrus Street and adjacent to where the BNSF mainline and the SJBL currently connect. This proposed location would only allow for access to the BNSF mainline and not the proposed PVL project because the PVL project does not travel that far north. Additionally, this area is a low income minority area that would be significantly impacted by moving services north of Villa Street.

For all the above stated reasons, the Highgrove Station option was not included as a component of the PVL project or as a feasible alternative, and therefore is not evaluated further within this SEA.

1.4 PROJECT PURPOSE AND NEED

RCTC developed a Purpose and Need, as well as Goals and Objectives, for the PVL through the *San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis* (AA), an FTA-sponsored AA process (STV Incorporated, 2004). The AA is the process for reaching a broad consensus on what type of improvement(s) best meet locally defined Goals and Objectives for a specified study area. The Purpose and Need established through the AA was developed based upon understanding of the transportation conditions, problems, and issues in the study area that would need to be addressed by a major transportation investment.

The AA identified that the purpose of proposed transportation improvements is to provide alternatives to help alleviate traffic congestion on the freeway segment and arterials in the study area, thereby improving the mobility of people and goods. The improvements should also provide or improve linkages to the overall transportation system, support the achievement of regional air quality goals, and avoid environmental and community impacts to the extent possible.

As described above, the primary transportation facilities in this corridor include I-215, a limited access freeway with a segment that runs from Riverside to Perris in a south/southeasterly direction, and a limited use rail freight line, the SJBL. Both I-215 and SJBL run approximately parallel to one another for the length of the corridor. The SJBL is an existing non-highway transportation ROW that is significantly underutilized from a passenger transportation perspective. As noted in the AA, and the planning studies discussed below (see Section 1.6, Regional and Local Planning Context), opportunities to use this existing ROW have been explored in the past with general conclusions that it has the potential to relieve pressure on existing and forecasted congestion on the regional transportation network. The I-215/SJBL alignment is in need of an improved transportation system independent of the ever growing and increasingly congested roadway system. The needs of the I-215/SJBL alignment were developed through outreach to the public, affected communities, stakeholders and concerned individuals. The needs identified are listed below:

- Reduce roadway congestion;
- Provide transit travel options to growing population and employment centers;
- Coordinate transportation planning and community development; and
- Improve use of underutilized transportation resources.

Transportation movement occurs primarily via the heavily congested I-215 freeway, which overlaps State Route 60 (SR-60) between Riverside and Moreno Valley. Current and planned freeway improvements cannot fully accommodate forecasted demand. In addition, potential freeway expansion beyond currently planned improvements would have substantial impacts on adjoining neighborhoods (STV Incorporated, 2004).

The northern end of the study area is served by SCRRA/Metrolink commuter rail service to San Bernardino, Los Angeles and Orange counties. The study corridor includes a railroad ROW (the SJBL) that could provide a transit alternative to I-215, avoiding the freeway bottleneck and congestion. This potential commuter rail service provides an opportunity for transferring some patrons to a transit mode within the study corridor, and provides the opportunity for extending commuter rail service further south and east into Riverside County.

1.5 PROJECT GOALS AND OBJECTIVES

Four goals and complementary objectives were established by RCTC for the I-215/SJBL alignment based on the corridor's issues and the potential for a transit system to achieve or help achieve the project Purpose and Need. The Goals and Objectives are:

Goal 1 – Improve the Transportation System with Alternate Travel Choices

Objective:

- Reduce highway congestion in the corridor;
- Improve the attractiveness of public transit as a commuter alternative to the automobile by making it available, reliable, and convenient to use;
- Establish and expand the regional transit network within and beyond the study corridor; and,
- Promote a seamless regional transit system.

Goal 2 – Promote Community/Transit Oriented Development

Objective:

- Strengthen the older urban communities as centers of economic opportunity;
- Broaden the range and availability of public transportation alternatives between the various urban areas along the corridor for a variety of trip purposes;

- Encourage transit-friendly communities, at higher densities;
- Foster transit-oriented development around transit stations; and,
- Provide improved mobility opportunities to the transit dependent.

Goal 3 – Minimize Adverse Environmental Impacts

Objective:

- Contain residential, commercial, and industrial “sprawl” development;
- Conform to the State Implementation Plan (SIP) as required by the Clean Air Act (CAA) Amendments of 1990;
- Minimize impacts to the natural and human-made environment; and,
- Minimize the need for new ROW, thereby reducing land use impacts to the study corridor.

Goal 4 – Invest and Deploy Resources Effectively and Efficiently

Objective:

- Invest resources efficiently;
- Improve the productivity and cost-effectiveness of transit services in the corridor;
- Enhance and build upon the existing public transportation system within the corridor; and,
- Select investments that build upon underused and abandoned transportation resources.

1.6 REGIONAL AND LOCAL PLANNING CONTEXT

State and local planning efforts applicable to the project corridor anticipate an increasing need for transportation alternatives and also specify, in some cases, the PVL as a potential solution to projected transportation needs. The transportation needs are associated with the forecasted growth in population and employment, and the accompanying increases in congestion. The studies and reports described below for the I-215/SJBL alignment and the region have underscored the need for diversifying transportation service. These studies and reports support the conclusion that there is not sufficient capacity on the existing transportation network to meet the demands of the corridor, even with planned increases in roadway capacity and bus service. The studies and reports include:

Regional Transportation Plan and Regional Transportation Improvement Program – Southern California Association of Governments

The Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) are the responsibility of the Southern California Association of Governments (SCAG), the Metropolitan Planning Organization (MPO) for southern California, and are required by statewide and metropolitan planning rules and regulations. The plans examine demographic, economic, and transportation trends and needs within a specified planning area in order to develop an ongoing strategy for implementing transportation investments to meet identified needs. The PVL is included in both the RTP (adopted 2008) and RTIP (adopted 2008). The PVL is also included in the 2011 Federal Transportation Improvement Program (FTIP), which was formerly referred to as RTIP and was adopted in 2010.

The RTP is an update to the previous Regional Transportation Plan (2004) and presents an assessment of the overall growth and economic trends in the SCAG region through the year 2035. The RTP is necessary to receive state and federal funding, and is consistent with federal and state requirements. The RTP is the culmination of a multi-year effort focusing on maintaining and improving the transportation system through a balanced approach. This balanced approach considered transportation system preservation, operation and management; improved coordination between land use decisions and transportation investments; and strategic expansion of the system to accommodate future growth.

The RTIP is a listing of all funded transportation projects proposed over a six-year period (Fiscal Years 2008/09 – 2013/14) for the SCAG region. All projects included in the 2008 RTIP are consistent with the current RTP policies, programs, and projects. Key projects related to the study corridor include county-wide SCRRA/Metrolink improvements, reconstruction and upgrade of the SJBL for passenger rail service between Riverside and Perris (Perris Valley Line), corridor and capacity improvements for the I-215, I-15 and SR-91, and the Mid County Parkway which will provide a 16-mile parkway to improve regional east-west mobility between the San Jacinto and Perris areas.

The PVL project is included in the current 2008 RTP, which was found to meet air quality conformance by Federal Highway Administration (FHWA)/FTA on June 5, 2008. The project is also in the 2011 FTIP, which was found to meet air quality conformance by FHWA/FTA on December 14, 2010.

Riverside County Integrated Project – Riverside County Planning Department

Riverside County Planning Department developed the Riverside County Integrated Project (RCIP) which includes a comprehensive, three-part, integrated program balancing the housing, transportation, and economic needs of a large population with the existing environment and available natural resources. RCIP accommodates continued growth by integrating the Riverside County General Plan with transportation and environmental issues. The three parts of the RCIP are the Riverside County General Plan (adopted 2003), the Multiple Species Habitat Conservation Plan (MSHCP) (adopted 2003), and the Community and Environmental Transportation Acceptability Process (CETAP). The transportation component of the RCIP broadly examines opportunities on how the existing and future transportation system can contribute to and alleviate expected pressures from forecasted traffic volumes on the network. Benefits from alternative modes of transportation are identified and include transit improvements that can generate opportunities for economic development in established urban centers by attracting compatible land use activities. Rail transit is envisioned as a travel option that can contribute to higher quality living environments by reducing auto dependency, concentrating compatible land uses, and relieving pressure to develop open space.

City of Riverside General Plan 2025 – City of Riverside (2007)

The major principles underlying this General Plan are focusing future development near existing transportation corridors ensuring land uses are supported by an efficient local roadway network; embracing innovative solutions to congestion on freeways and regional arterials; supporting alternative modes of transportation such as walking, biking and transit; and ensuring that transportation options are maximized for all community members as necessary components of an effective and safe circulation system for Riverside. Circulation and mobility strategies must be comprehensive to overcome the City's long-term transportation challenges. This General Plan — and its two keystone elements, Land Use and Urban Design and Circulation and Community Mobility — provide such comprehensive strategies. The Land Use and Urban Design Element of the General Plan focuses on incorporating “smart growth” principles into planning and development decisions, and focusing development in already urbanized parts of the City rather than spreading growth to the urban fringes. The Circulation and Community Mobility Element of the General Plan acknowledges the need for alternative modes of transportation, and emphasizes the City’s support for the extension of SCRRA/Metrolink 91 to create the PVL.

City of Perris General Plan 2030 – City of Perris (2005)

This General Plan is a 30-year guide for local government decision on growth, capital investment, and physical development in the city of Perris. Due to the interrelationship of urban and rural activities (employment, housing and services), and the low average density of existing land uses, the private automobile is the dominant mode of travel within the city of Perris. As the population grows, city roads will become increasingly congested. As a result, it is important to encourage increased ridership on public transit systems and increased use of alternative modes of transportation. The public transit system alternatives for City of Perris include: fixed route public transit systems, common bus carriers, and other local agency transit and paratransit services.

The Land Use Plan broadly describes the types of land uses and intensity of physical development that will be accommodated in the city of Perris through the year 2030. The Downtown Specific Plan discusses the future development of a commuter rail station planned for the old Perris Depot area, providing a new spur to Riverside, Los Angeles and Orange Counties, and expanding commuting options for residents of Perris. Implementation of the Downtown Specific Plan including related infrastructure improvements is anticipated to improve the appearance of Downtown. The purpose of the Circulation Element of the General Plan is to provide for a safe, convenient and efficient transportation system for the city. In order to meet this objective, the Circulation Element has been designed to accommodate the anticipated transportation needs based on the estimated intensities of various land uses within the region. The rail system plan would extend service between the cities of Riverside and Perris along the San Jacinto Branch Line to the city of Hemet. The city of Perris rail line would continue to be used for freight activity along the BNSF and would share the line with future Metrolink service.

Perris Commuter Rail Extension Patronage Estimate (2000)

This study estimated the potential for long distance commuter rail ridership from the southwestern area of Riverside County to Downtown Riverside via the Riverside Metrolink

Station and then beyond to Los Angeles by way of existing Metrolink ROW and track. The study did not examine shorter trips between communities in southwestern Riverside County. The study concluded that the proposed commuter rail service would grow to more than 3,800 daily weekday trips by 2020.

Union Pacific Riverside Branchline Improvement Study, Boyle Engineering for Riverside County Transportation Commission (2000)

This study examined the viability of acquisition of the Union Pacific Riverside Industrial Lead (UP RIL) by RCTC to provide service into the Riverside Downtown Station from the SJBL. Several track improvements and new track connections were examined. Two new connecting tracks were proposed: one at the crossing of the UP RIL and SJBL near Rustin Avenue, and the other connects the UP to the BNSF at the Riverside Downtown Station.

San Jacinto Branchline Commuter Rail Study, Boyle Engineering and Barton-Aschman Associates, Inc. for Riverside County Transportation Commission (1995)

This study examined the viability of commuter rail service along the SJBL ROW for commuters in Riverside, Moreno Valley, Perris, Hemet and San Jacinto. The commuter rail implementation plan consisted of 38 miles of railroad ROW upgrades between Riverside and Hemet/San Jacinto on the SJBL.

Development Plan and Negative Declaration for the construction of Phase I of the proposed Perris Multimodal Facility (2006)

The city of Perris prepared a CEQA document (2005) that analyzed the environmental impacts of the first phase of a proposed multimodal facility that will initially serve buses, and later, commuter rail service. A NEPA Categorical Exclusion was also prepared for FTA in 2006 because of federal grant funds directed to the Riverside Transit Agency (RTA) for the facility.

Final Environmental Impact Statement: I-215 Improvements, California Department of Transportation (2001)

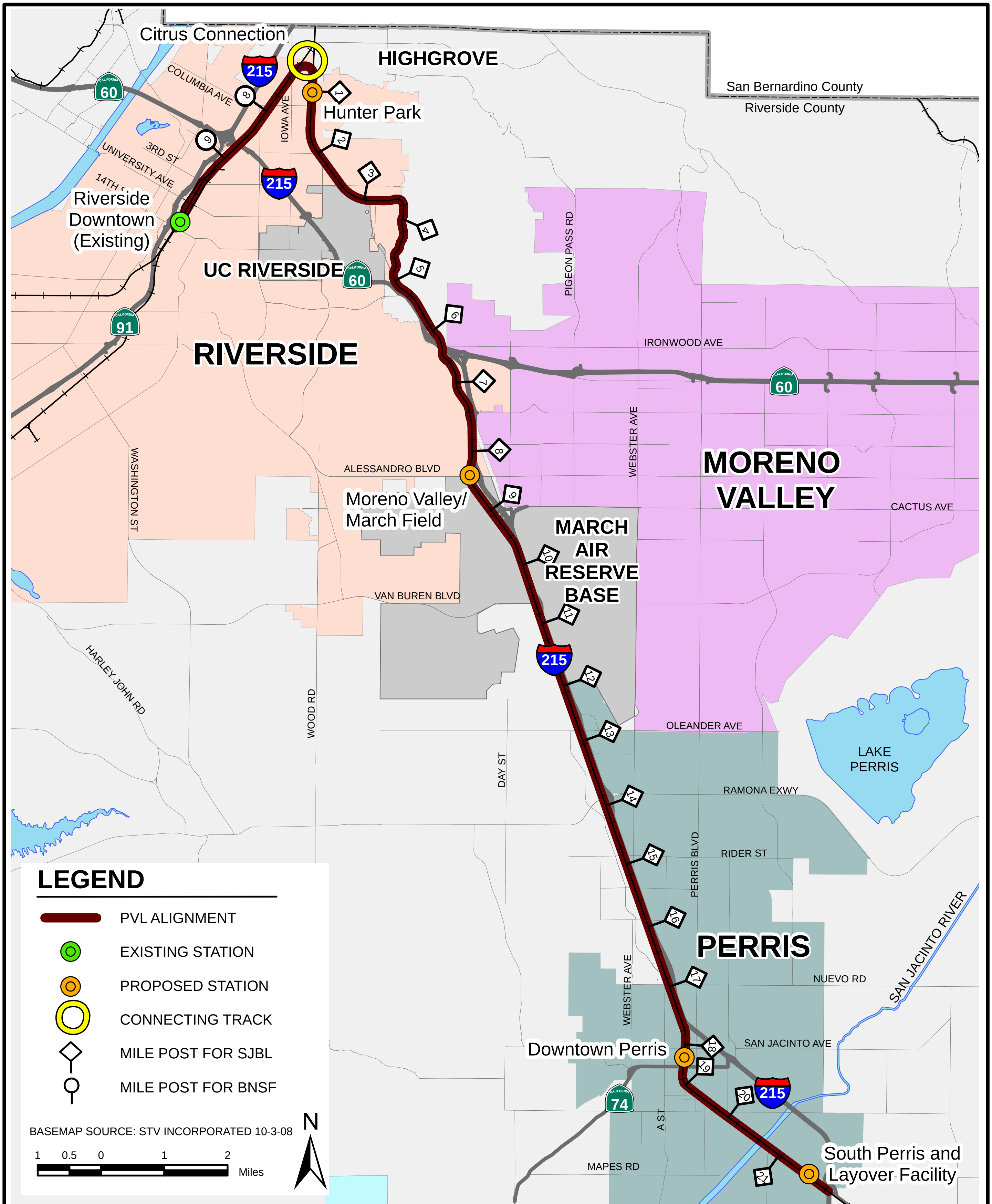
This Final Environmental Impact Statement (FEIS) evaluated improvements on I-215 and short segments of SR-60 and SR-91 in the cities of Riverside and Moreno Valley. The selected High Occupancy Vehicle (HOV) Alternative included one HOV lane in each direction between University Avenue on I-215 in Riverside and Day Street on SR-60 in Moreno Valley. This joint Federal Highway Administration (FHWA) and RCTC study was undertaken to implement improvements on approximately six miles of I-215 and portions of SR-60 and SR-91. Improvements from this project extend from north of the Eucalyptus interchange to north of the Columbia Avenue interchange on I-215; south of the Mission Inn Avenue interchange to the West Junction of I-215/SR-60 with SR-91; Main Street in the city of Riverside to the East Junction of I-215/SR-60 and to Frederick Street in the city of Moreno Valley on SR-60. The HOV Alternative required acquisition of additional ROW. This alternative would establish HOV connectivity between the existing HOV roadway on I-215 from University Avenue to east of the East Junction on SR-60 in the city of Moreno Valley. The HOV alternative was adopted into the RTP and the RTIP.

It should be noted that the I-215 Improvements project identified the highway improvements that would maximize throughput with the existing freeway corridor. Even with the proposed improvements, congestion would remain severe and would not meet the forecasted demand.

1.7 PROJECT DETAILS

RCTC proposes to extend commuter rail service approximately 24 miles from the existing Riverside Downtown Station to south of the city of Perris. The proposed PVL project would consist of the existing BNSF and SJBL alignments and corridor Mile Posts (MP) locations are shown in Figure 1.7-1. This commuter rail service is identified as the PVL, and it would be an extension of the SCRRA/Metrolink 91 line from the existing Riverside Downtown Station along a portion of the BNSF mainline and would connect to the SJBL using the proposed Citrus Connection. For the opening year of ~~2012~~2014, the PVL would include installation and rehabilitation of track; construction of four stations and a Layover Facility; improvements to existing grade crossings and select~~ed~~ culverts; installation of new traffic signals, replacement of two existing bridges along the SJBL at the San Jacinto River; and construction of communication towers and landscape walls. (In the context of the PVL project, the term “landscape wall” describes a free-standing, masonry block walls to be deployed for reasons other than noise mitigation. A landscape wall will be constructed as part of the PVL project at Highland and Hyatt Elementary Schools. Additionally, RCTC will fund another landscape wall at Nan Sanders Elementary School. See Section 1.7.8 for additional details.)

This Page Intentionally Left Blank



PROJECT NO.	92666
DRAWN:	4/22/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666mpEA.MXD

PERRIS VALLEY LINE
CORRIDOR MILE POSTS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
1.7-1

Project features include:

- Construction of a new 2,000 foot long rail segment (Citrus Connection) between the BNSF and the SJBL;
- Replacement and rehabilitation of existing rail and railroad ties (as necessary) over approximately 11.8 miles of existing track;
- Installation of two set-out tracks totaling approximately 1,300 feet in length;
- Construction of four Americans with Disabilities Act (ADA)-compliant commuter rail stations;
- Installation of a new 9.4-mile long bypass track along the I-215 corridor;
- Replacement of two bridges (San Jacinto River located at MP 20.70, and San Jacinto River Overflow Channel located at MP 20.80);
- Construction of a Layover Facility, including four 1,200-foot long storage and servicing tracks;
- Closure and improvements to existing grade crossings along the SJBL;
- Installation of traffic signals;
- Culvert replacement at designated locations;
- Construction of communication towers;
- Construction of ~~a~~ landscape walls at Highland Elementary School and Hyatt Elementary School and provision for one at Nan Sanders Elementary School; and
- Street improvements at designated locations.

1.7.1 Track Improvements

All track improvements will occur within the existing SJBL ROW, with the exception of the Citrus Connection Track. Work would meet SCRRA/Metrolink commuter rail standards. This work will include replacement of wood ties with concrete ties and new ballast (as necessary). In order to more accurately describe the improvements to the track, the alignment is broken down into the following segments with the identified changes, as shown on Figure 1.7-2:

- Citrus Connection: To connect the BNSF to the SJBL, a new approximately 2,000-foot long track would be constructed, as shown on Figure 1.7-3 and Figure 1.7-4.
- MP 1.40 to MP 5.10 (approximately Marlborough Avenue to Poarch Road): This 3.8-mile segment of track would be upgraded with new concrete ties, new welded rail, and new ballast as required.

- MP 5.1~~2~~0 to MP 7.00 (approximately Poarch Road to Box Springs Boulevard): Wooden ties would be replaced as needed and new ballast added over this approximate 1.8-mile segment of track.

- MP 7.00 to approximately MP 7.50 (approximately Box Springs Boulevard to Eastridge Avenue): This approximately 0.5-mile segment of track would be upgraded with new concrete ties and new welded rail.

- MP 7.50 to MP 16.90 (approximately Eastridge Avenue to Nuevo Road): An approximate 9.4-mile long segment of second track, identified as a by-pass track, would be constructed on the I-215 side of the existing SJBL track within the existing RCTC ROW. This track would be constructed with new concrete ties and new welded rail. The existing track would remain for freight service only, but would be moved slightly where the ROW passes underneath roadway overpasses. This change is required to allow for enough clearance for both tracks and the supports for the roadway overpasses.

- MP 16.90 to MP 18.20 (approximately Nuevo Road to San Jacinto Avenue): This approximate 1.3-mile segment of track would be upgraded with new concrete ties and new welded rail.

- MP 18.20 to approximately MP 19.00 (approximately San Jacinto Avenue to D Street/8th Street): This approximate 0.8-mile segment of track would be relocated so that the PVL would align with the new platforms at the Perris Multimodal Transit Facility. The new track would be constructed of new concrete ties and new welded rail, approximately 18 feet from the existing track, and the existing track would be removed.

- MP 19.00 to MP 22.00 (approximately D Street/8th Street to I-215): This approximate 3.0-mile segment of track would be upgraded on the existing alignment with new concrete ties, new welded rail, and new ballast.

1.7.2 Stations and Layover Facility

Stations

Based on projected ridership, RCTC is proposing four stations for the opening year of ~~2012~~ 2014 including a Hunter Park Station (~~one of three studied locations~~Marlborough site has been selected), Moreno Valley/March Field Station, Downtown Perris Station, and South Perris Station.

Each of the proposed stations built as part of the PVL project would be constructed with a 680-foot long side platforms, and ADA-compliant in accordance with federal law and SCRRA/Metrolink design standards (see Section 3.13, ADA Compliance). The "typical" platform is constructed of concrete with steps up and ADA-compliant walkways from the surrounding grade to reach track elevation. In addition to the platform, there would be a trackside canopy structure, ticket kiosks, schedule information, a shelter comprised of mast-supported roof planes (sloped to facilitate drainage), and decorative fencing to direct riders to the appropriate areas for either boarding or disembarking from trains as shown on Figure 1.7-5. All parking areas would be at-grade. It is important to note that the platform location is designed so when the train is stopped in the station, the distance from the front axle of the train is a minimum of 60 feet from the nearest pedestrian/vehicular crossing, and the end of the platform is a minimum 120 feet from the crossings as well. Each station is described below in greater detail.

For ~~2012~~2014, the four proposed stations are:

- Hunter Park Station, as illustrated on Figure 1.7-6, ~~would~~ was considered to be located at one of three proximate site options, shown on Figure 1.7-7, Figure 1.7-8, and Figure 1.7-9. The Palmyrita Station option ~~is~~ was proposed for the east side of the SJBL main track at Iowa Avenue between Palmyrita and Columbia Avenues. The Columbia and Marlborough Station options ~~have been~~were identified along the west side of the main track, with entry and exit from Columbia and Marlborough Avenues, respectively. Selection of the Palmyrita Station option would have required a new main track to be constructed east of the existing SJBL, between Citrus Street and Marlborough Avenue, to accommodate the station. Any of these station options would accommodate parking for approximately 480 vehicles and cover approximately 8 acres including landscaping. Each of the three options were evaluated in the Draft SEA, subsequently, RCTC during the development of the Final SEA has selected the Marlborough site to be the Hunter Park Station.

  The environmental setting and existing site conditions for each of the three proximate sites is described below. The Palmyrita site is now developed with a warehouse building. The Columbia site currently hosts industrial facilities and a citrus orchard. The citrus orchard at the Columbia station site is bordered on two sides by commercial buildings. Low levels of pesticides were detected in the soil at this site and any off-site soil disposal would need to be managed as hazardous waste.

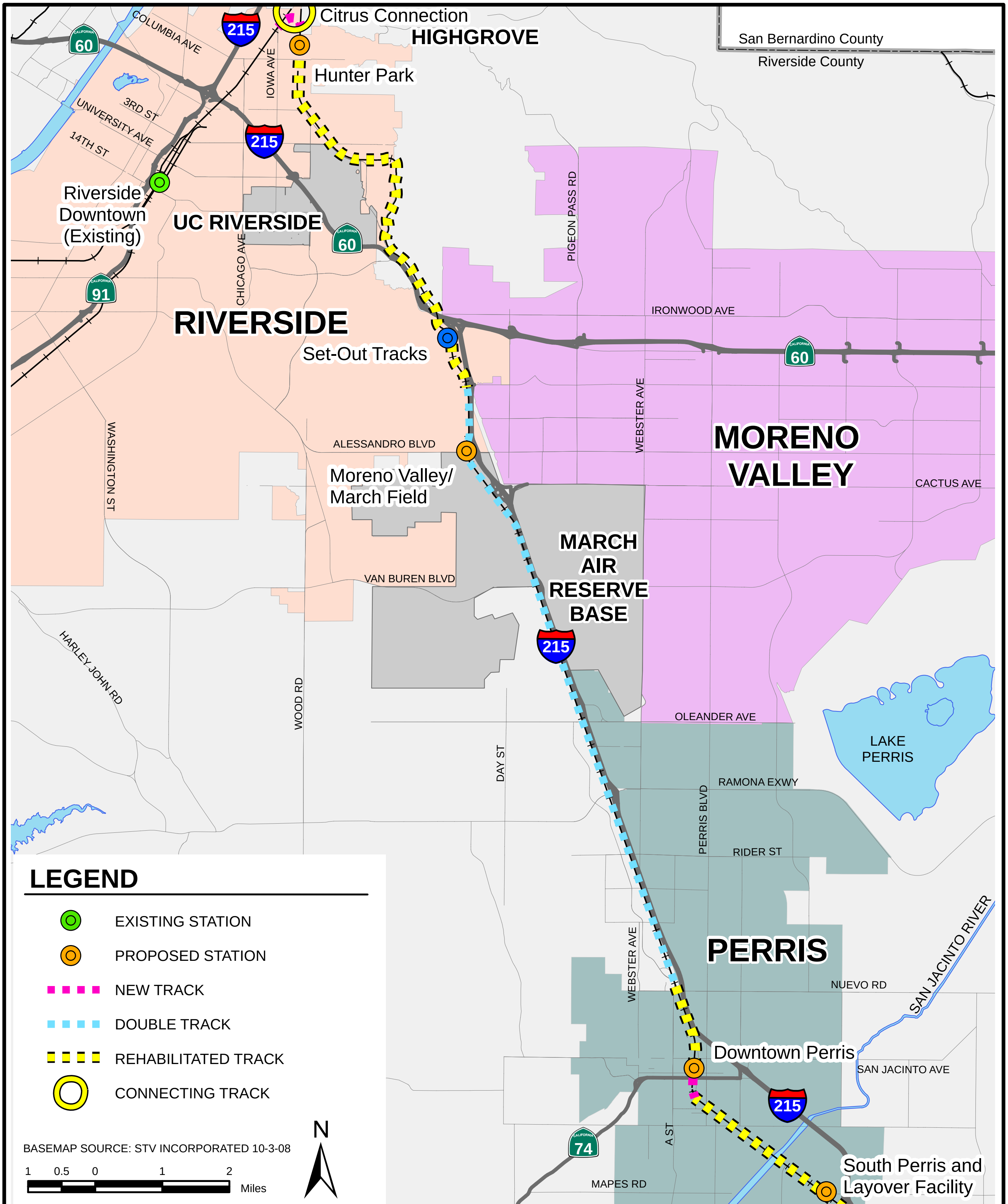
  The Marlborough site is located on cleared, disturbed vacant land. After a thorough review of the potential sites, while weighing the site access, engineering and cost considerations for all sites, the Marlborough site has been identified as the most suitable site location for the Hunter Park Station.

- Moreno Valley/March Field Station will be located west of I-215 and south of Alessandro Boulevard on property currently owned by the March Joint Powers Authority (March JPA) and would be donated to RCTC. RCTC will be responsible for the construction, operation, and maintenance of the station and parking areas as shown on Figure 1.7-10 and Figure 1.7-11. The associated parking area will have a capacity of approximately 445 vehicles and cover approximately 7 acres including landscaping. At this station the ticket kiosks with canopy will be located in the upper level of the parking lot and not trackside.

- Downtown Perris Station is to be located southwest of I-215 San Jacinto Avenue and 4th Street at the existing Perris Multimodal Transit Facility, as shown on Figure 1.7-12 and Figure 1.7-13. Improvements to be undertaken by RCTC would include; an expansion of the existing parking capacity to approximately 440 spaces covering approximately 6 acres including landscaping and track realignment within the ROW to allow for proper spacing between the platform and the train. The Perris Multimodal Transit Facility, in operation, includes eight bus bays and five canopies. The facility would be operated as a bus terminal by RTA prior to the opening of the proposed PVL project. With the opening of the PVL, it would become a multimodal transit facility.

- South Perris Station will be located west of I-215 near the intersection of the SJBL ROW and State Route (SR-74), as shown on Figure 1.7-14 and Figure 1.7-15. The associated parking area would have a capacity of approximately 880 vehicles and cover approximately 11 acres including landscaping.

It should be noted that the rail station lay-out and design will be coordinated with the appropriate land use agencies (i.e. city of Riverside, March JPA, and city of Perris).



PROJECT NO.	92666
DRAWN:	8/9/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666impr1.MXD

SJBL TRACK IMPROVEMENTS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
1.7-2

LEGEND

PVL ALIGNMENT

SITE BOUNDARY

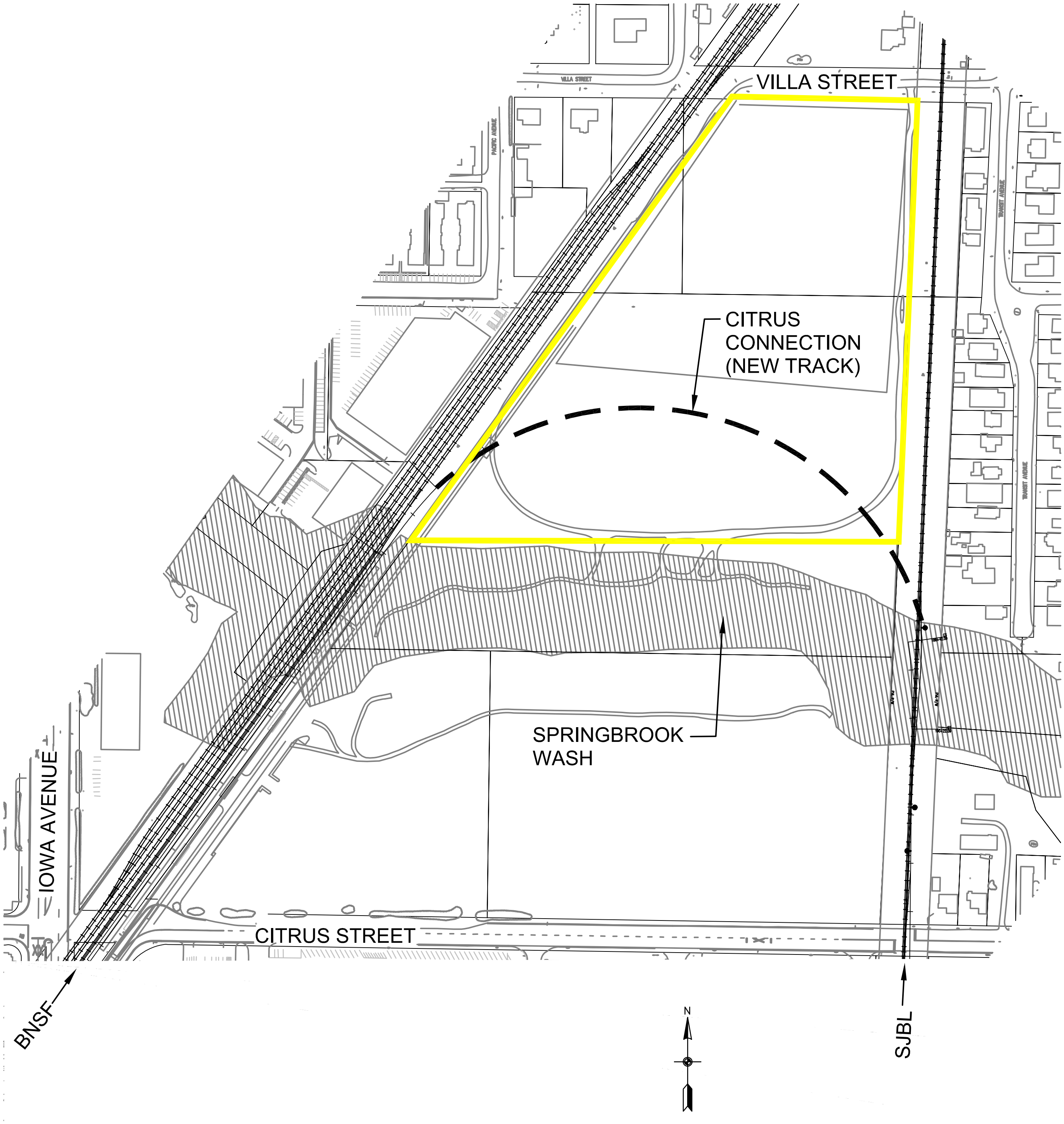
SITE PHOTOGRAPH (VIEW WEST)

SITE AERIAL

N

0 300 Feet

PROJECT NO.	92666	CITRUS CONNECTION	FIGURE
DRAWN:	1/18/10		
DRAWN BY:	JP		1.7-3
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666citrus.MXD			



LEGEND

SITE BOUNDARY

SOURCE:

30% DESIGN DRAWINGS

NOT TO SCALE

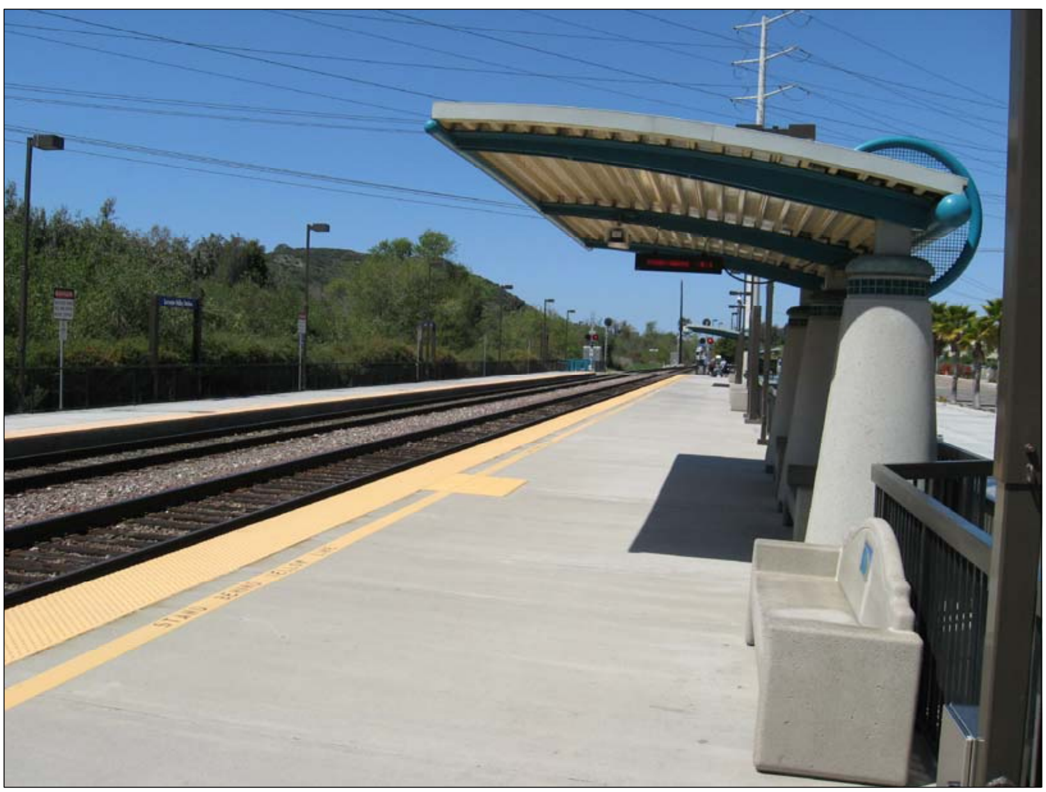
PROJECT NO.	92666
DRAWN:	1/4/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666citrusE.dwg

CITRUS CONNECTION ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-4



PROJECT NO.	92666	**TYPICAL VIEWS OF PLATFORM AND CANOPY STRUCTURE**
DRAWN:	1/14/10	
DRAWN BY:	JP	
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA
FILE NAME:	92666PHOTO.dwg	

FIGURE

1.7-5

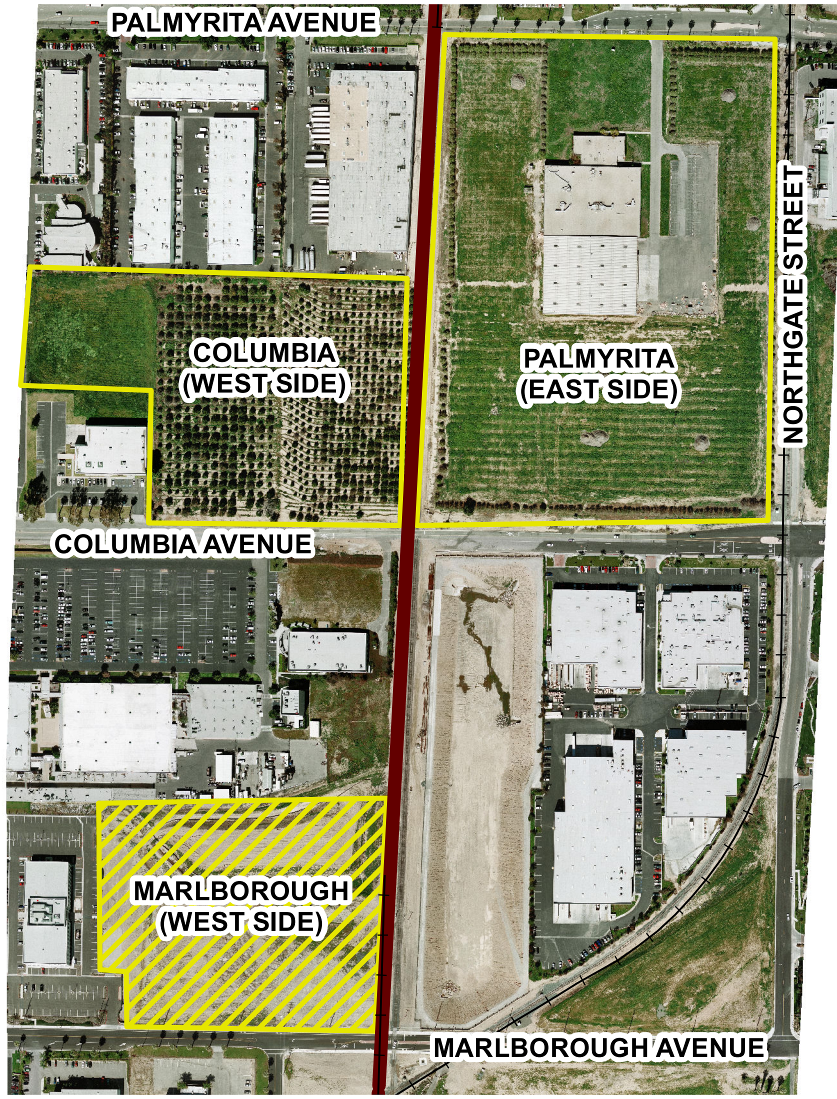
SITE PHOTOGRAPH - MARLBOROUGH (VIEW SOUTH)

SITE PHOTOGRAPH - COLUMBIA (VIEW SOUTH)

SITE PHOTOGRAPH - PALMYRITA (VIEW NORTH)

NOTE:

RCTC DURING THE DEVELOPMENT OF THE FINAL SEA HAS SELECTED THE MARLBOROUGH SITE TO BE THE HUNTER PARK STATION.



SITE AERIAL

N

0 500 Feet

LEGEND

SITE BOUNDARY

PVL ALIGNMENT

HUNTER PARK STATION SITE

PROJECT NO.	92666	HUNTER PARK STATION OPTIONS	FIGURE
DRAWN:	12/19/11		
DRAWN BY:	JP		1.7-6
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666stations.MXD			

SITE PHOTOGRAPH -
MARLBOROUGH (VIEW SOUTH)

SITE PHOTOGRAPH -
COLUMBIA (VIEW SOUTH)

SITE PHOTOGRAPH -
PALMYRITA (VIEW NORTH)

SITE AERIAL

N

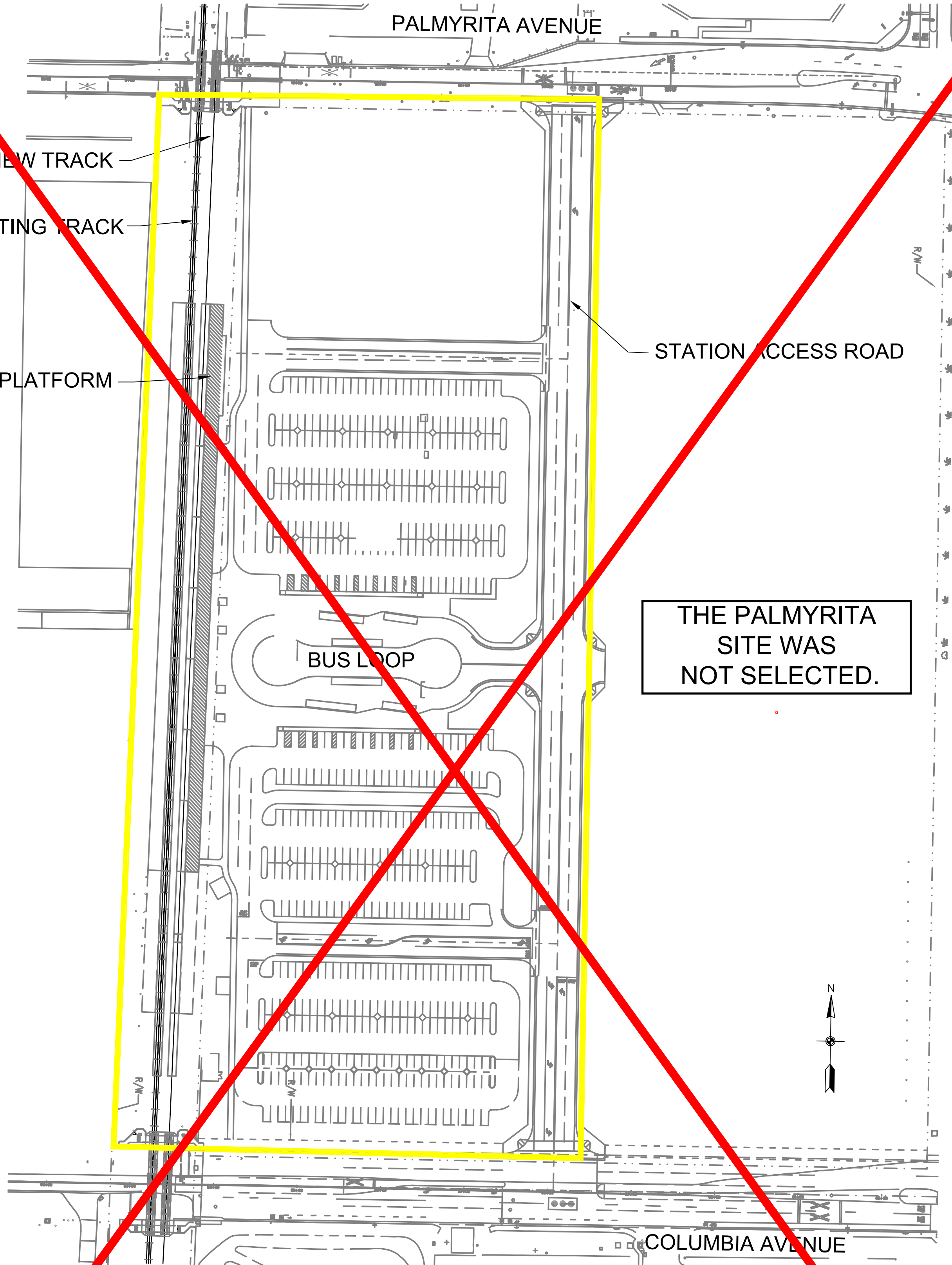
0
500
Feet

LEGEND

SITE BOUNDARY

PVL ALIGNMENT

PROJECT NO.	92666	HUNTER PARK STATION OPTIONS	FIGURE
DRAWN:	4/22/10		1.7-6
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666stations.MXD			



SOURCE:

30% DESIGN DRAWINGS

LEGEND

SITE BOUNDARY

NOT TO SCALE

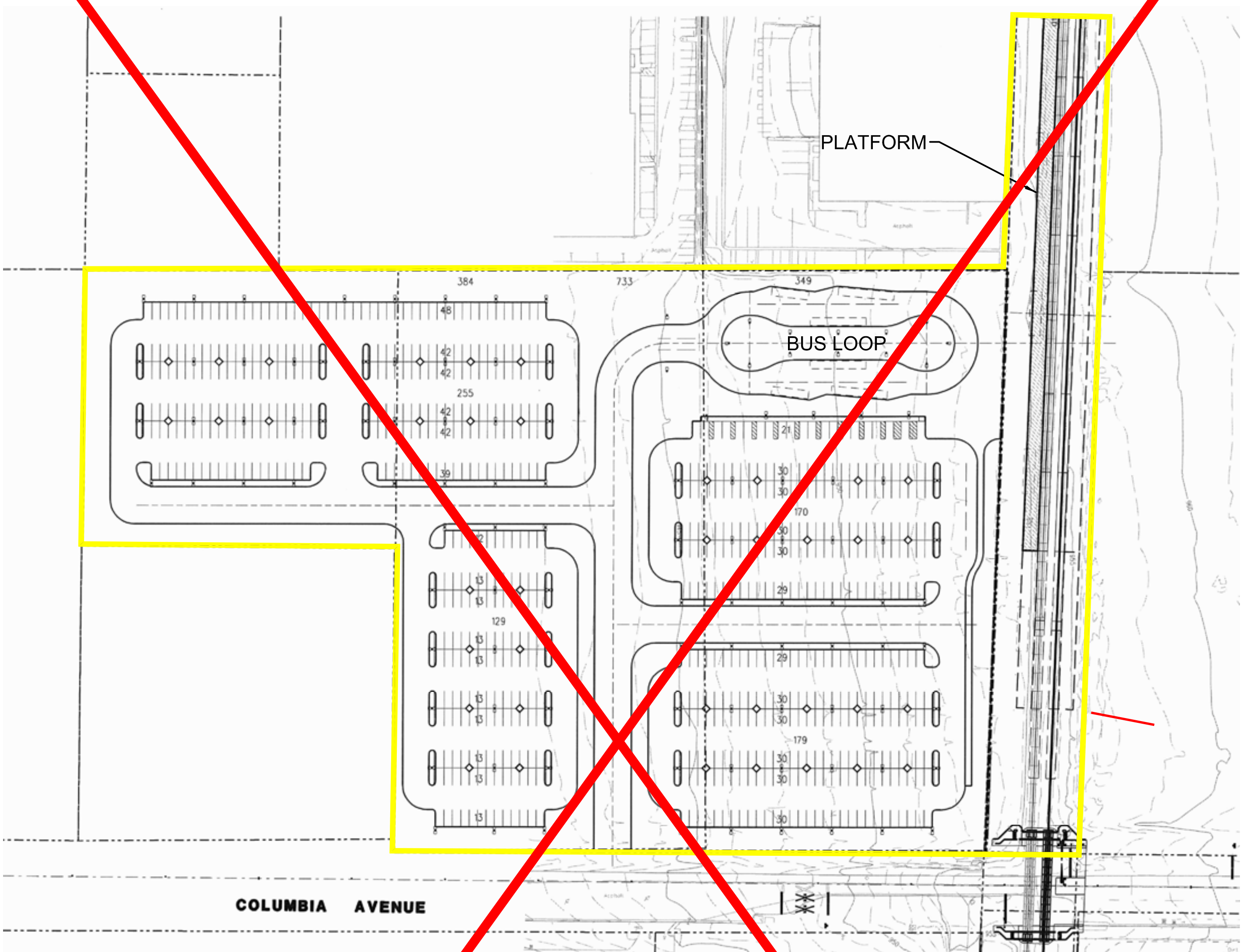
PROJECT NO.	92666
DRAWN:	1/18/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666PalmE.dwg

HUNTER PARK STATION PALMYRITA AVENUE OPTION ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-7



THE COLUMBIA
SITE WAS
NOT SELECTED.

SOURCE:

POST 30% DESIGN DRAWING UPDATE

LEGEND

SITE BOUNDARY

N

NOT TO SCALE

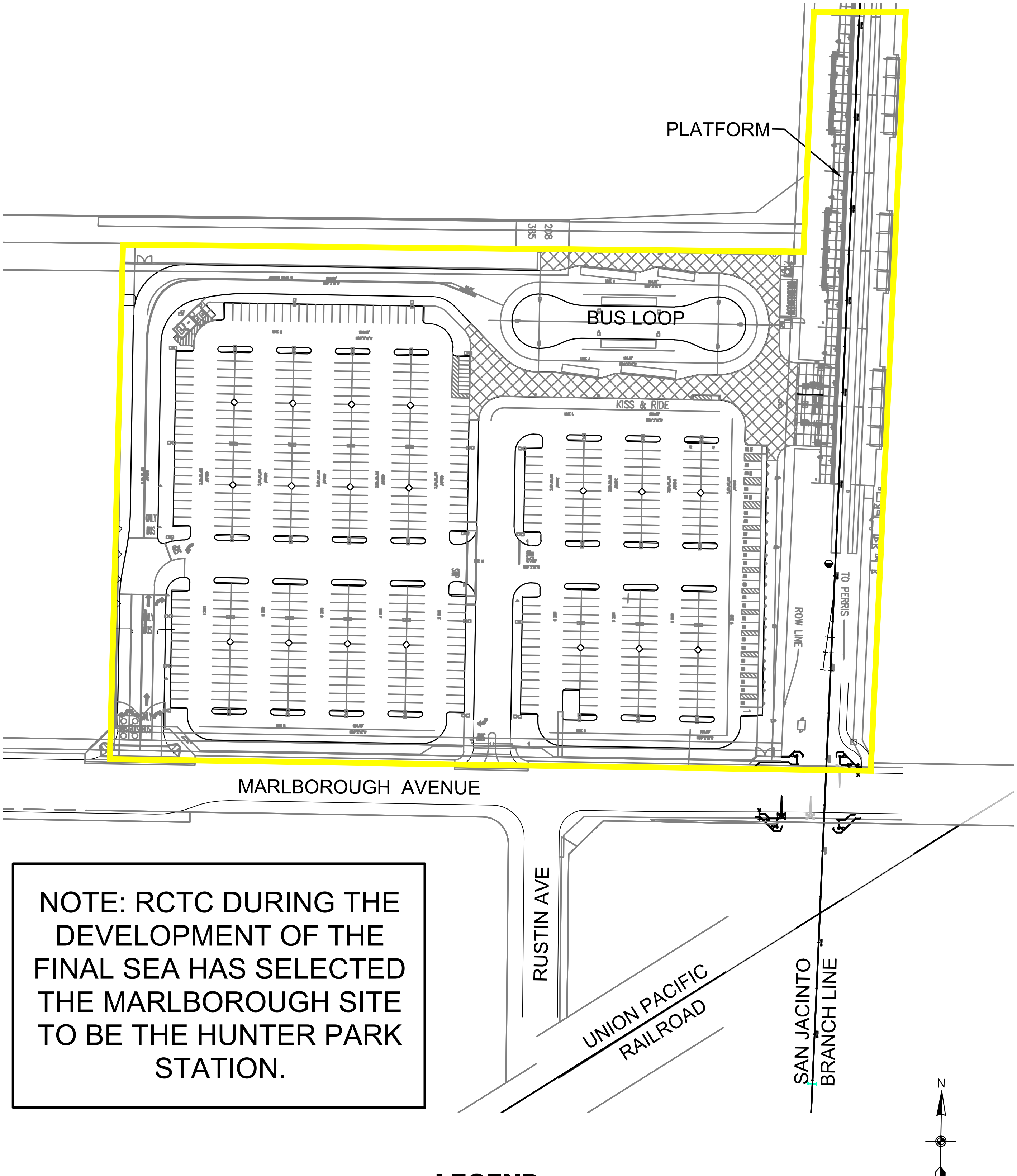
PROJECT NO.	92666
DRAWN:	1/4/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666columE.dwg

HUNTER PARK STATION
COLUMBIA AVENUE OPTION
ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-8



NOTE: RCTC DURING THE DEVELOPMENT OF THE FINAL SEA HAS SELECTED THE MARLBOROUGH SITE TO BE THE HUNTER PARK STATION.

CAD FILE: C:\GIS_Projects\RCTC\92666 Perris Valley Line\CAD\ LAYOUT: Layout1

SOURCE:

90% DESIGN DRAWING UPDATE

LEGEND

SITE BOUNDARY

NOT TO SCALE

PROJECT NO.	92666
DRAWN:	1/10/12
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666marlE_SEA.dwg

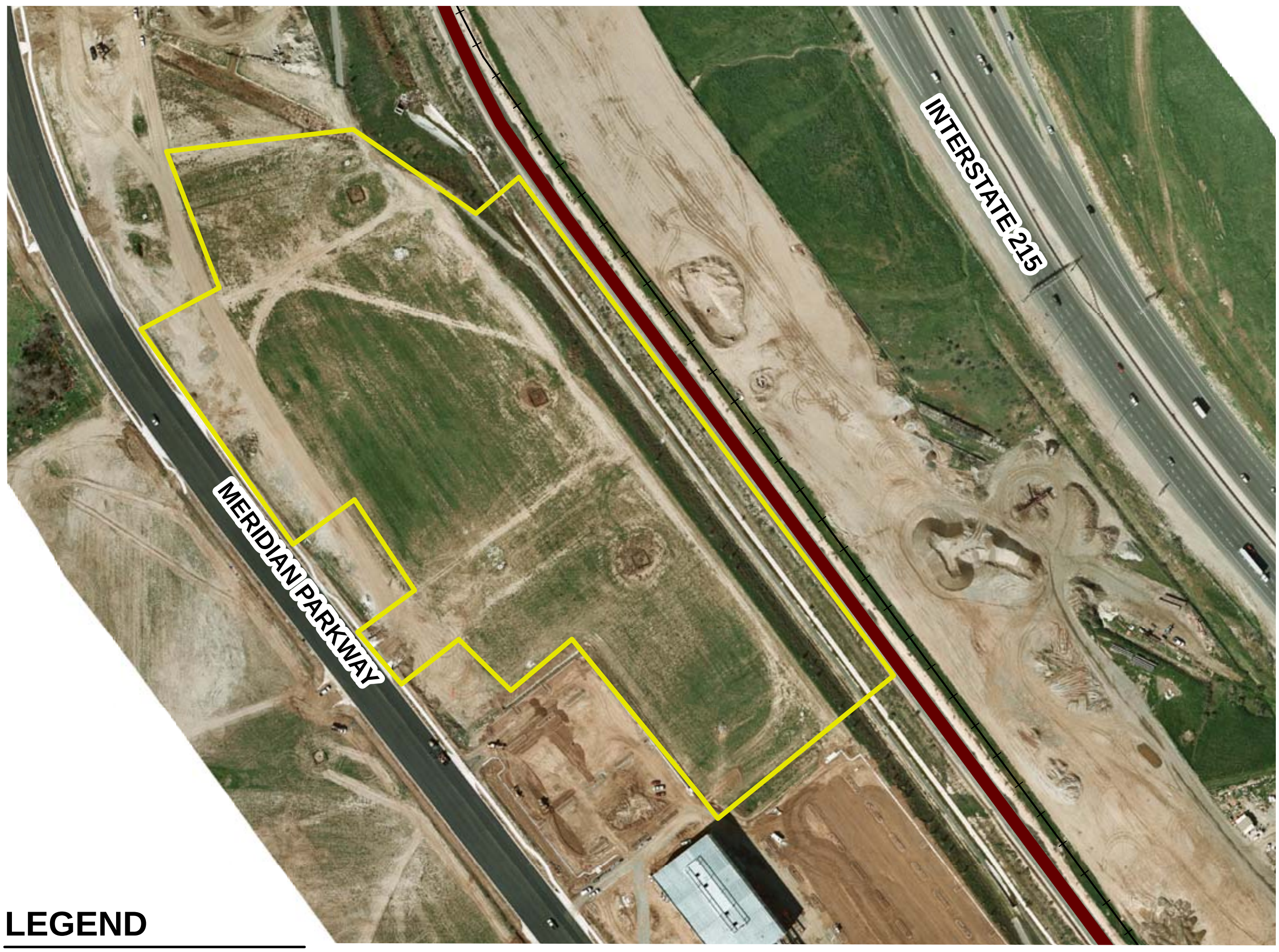
HUNTER PARK STATION
ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-9

SITE PHOTOGRAPH (VIEW SOUTH)



LEGEND

PVL ALIGNMENT

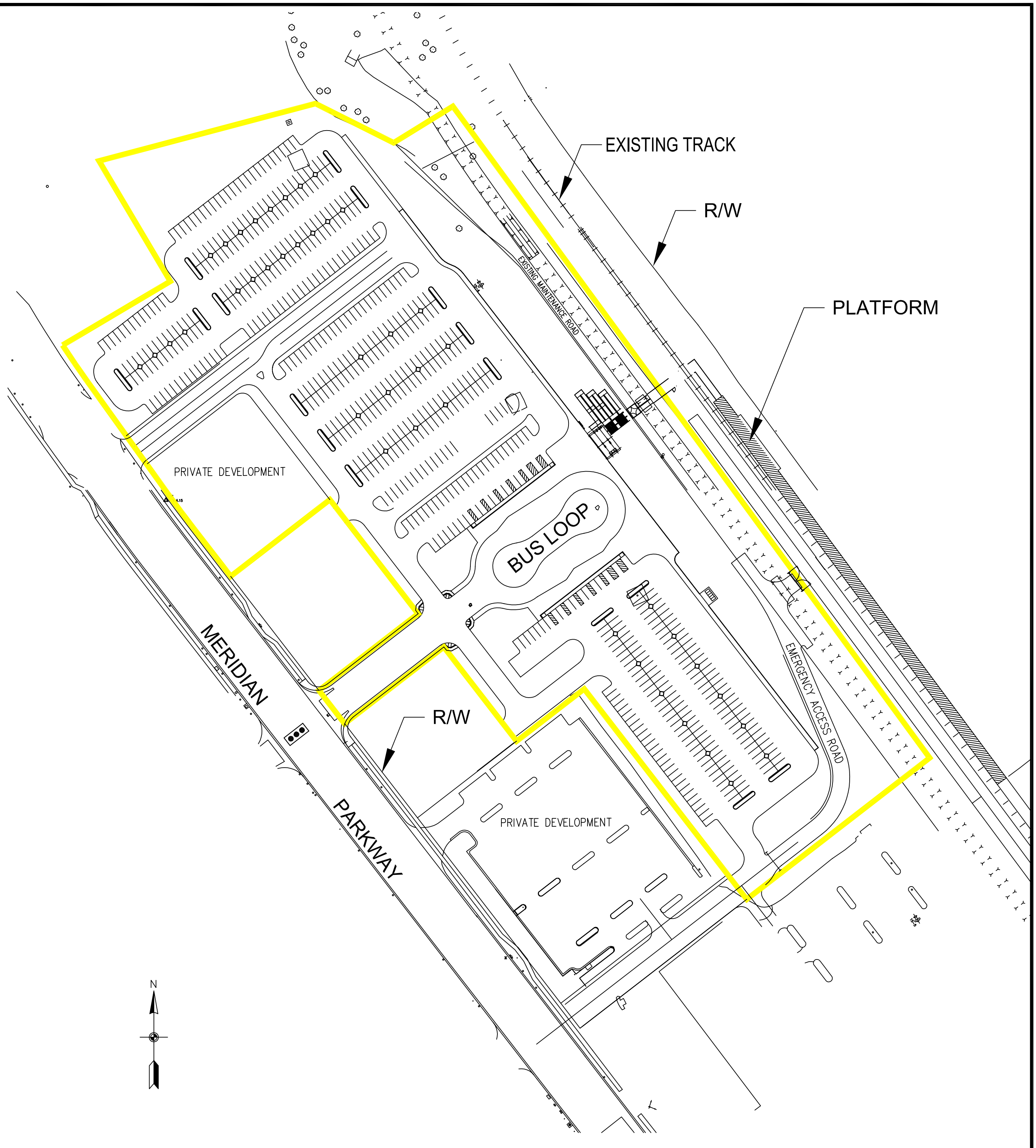
SITE BOUNDARY

SITE AERIAL

N

0 300 Feet

PROJECT NO.	92666	MORENO VALLEY/ MARCH FIELD STATION	FIGURE
DRAWN:	1/4/10		1.7-10
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666mv_mf.MXD			



SOURCE:

30% DESIGN DRAWINGS

LEGEND

SITE BOUNDARY

NOT TO SCALE

PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666morenoE.dwg

MORENO VALLEY/ MARCH FIELD STATION ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-11

LEGEND

PVL ALIGNMENT

SITE BOUNDARY

SITE PHOTOGRAPH (VIEW NORTH)

SITE AERIAL

N

0 300 Feet

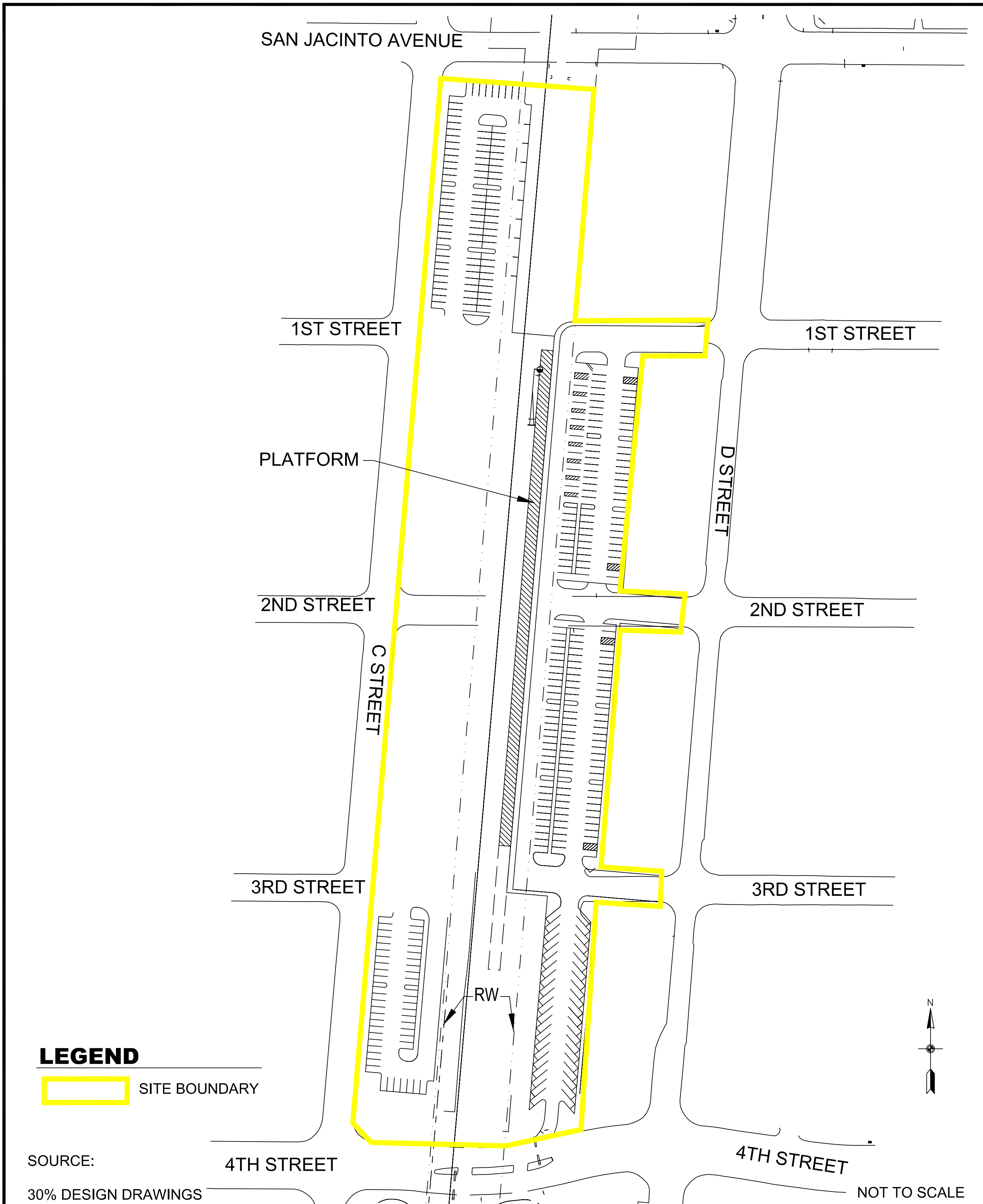
PROJECT NO.	92666
DRAWN:	1/4/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666dwntwnP.MXD

DOWNTOWN PERRIS STATION

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-12



SOURCE:

30% DESIGN DRAWINGS

NOT TO SCALE

PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	
92666DPerrisE.dwg	

DOWNTOWN PERRIS STATION
ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-13

SITE PHOTOGRAPH (VIEW NORTH)

SITE AERIAL

LEGEND

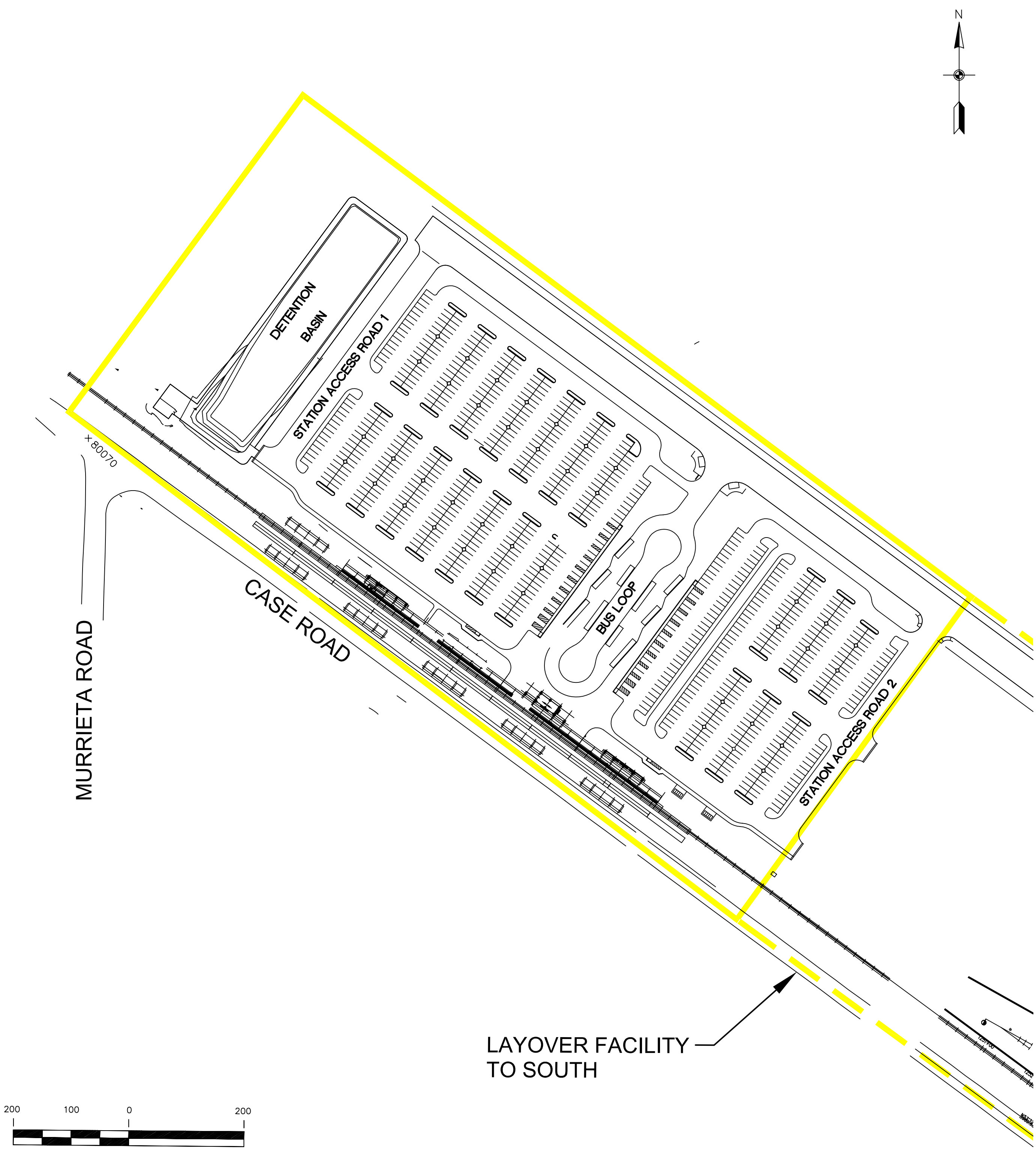
PVL ALIGNMENT

SITE BOUNDARY

N

0 1,000 Feet

PROJECT NO.	92666	SOUTH PERRIS STATION	FIGURE 1.7-14
DRAWN:	1/4/10		
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666perris.MXD			



SOURCE:

65% DESIGN DRAWINGS

LEGEND

SITE BOUNDARY

PROJECT NO.	92666
DRAWN:	4/15/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666PerrisE_EA.dwg

SOUTH PERRIS STATION ENGINEERING SITE PLAN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-15

Layover Facility

The proposed Layover Facility would be located southeast of the South Perris Station and west of I-215, as shown on Figure 1.7-16 and Figure 1.7-17. In the ~~2012~~ 2014 opening year, the Layover Facility would accommodate four ten-car trains arriving from Riverside in the afternoon. Trains would be stored overnight on the four storage tracks (approximately 1,000 feet in length), and would receive light maintenance, cleaning, and operational testing prior to morning departures. The Layover Facility would include an ADA-accessible employee support building with modular offices, storage, and parking. The parking capacity is approximately 40 vehicles covering an area of less than one acre. The employee support building would be raised by six feet to remain out of the 100-year floodplain.

1.7.3 Culvert Replacement and Extension

There are approximately 53 drainage culverts along the SJBL that were evaluated in an *Existing Conditions Report* (JL Patterson & Associates, Inc., 2008). Within this evaluation, approximately 38 drainage culverts were identified for replacement or to be extended as part of the project, as shown on Figure 1.7-18. Of the 38 identified, ten treated wood box culverts would be replaced with corrugated steel pipe.

1.7.4 Bridge Replacements

There are two bridges along the SJBL that require replacement, one at the San Jacinto River (MP 20.70) and a second at the San Jacinto River Overflow Channel (MP 20.80) as shown on Figure 1.7-19. Both bridges will be replaced in-kind and will have a similar appearance as the original bridges. The current San Jacinto River single-track bridge is an open-deck pile, wooden trestle approximately 142-feet long. The San Jacinto Overflow Channel single track-bridge is an open-deck pile, wooden trestle 56-feet long.

1.7.5 Grade Crossings

As required by the ~~California Public Utilities Commission (~~CPUC~~)~~, modifications will be made to several existing grade crossings along the SJBL to ensure public safety, and to facilitate safe train movements. These modifications include improvements to several grade crossings, as well as the closure of other grade crossings. The locations of grade crossings to be improved or closed are shown on Figure 1.7-20.

Improvements are proposed at 15 grade crossings along the SJBL; Citrus Avenue (MP 0.57), Palmyrita Avenue (MP 1.00), Columbia Avenue (MP 1.24), Marlborough Avenue (MP 1.5), Spruce Street (MP 2.02), Blaine Street (MP 2.66), Mt. Vernon Avenue (MP 3.41), River Crest Drive (MP 7.0), San Jacinto Avenue (MP 18.05), W. 4th Street (MP 18.34), W. 7th Street (MP 19.10), S. D Street (MP 19.17), S. Perris Boulevard (MP 19.37), G Street (MP 19.68), and E. Ellis Avenue (MP 19.87) to include: flashing warning devices and gates, raised center medians, striping, signage and pavement markings, crossing safety lighting, signalization, and pedestrian safety improvements. Proposed improvements would reduce the potential for pedestrian and motor vehicle conflict at these grade crossings. The exact warning device configuration is to be determined by a diagnostic team consisting of the CPUC SCRRA, and BNSF representatives. To date, four field diagnostic meetings have been held to review grade crossings for the PVL, with members from the CPUC, SCRRA, BNSF, RCTC, County of Riverside, and cities of Riverside and Perris. A list of proposed grade crossing modifications identified at the meetings, which includes improved crossings and warning devices, is provided in Appendix C, Grade Crossing Modifications Table.

Two grade crossings would be closed to accommodate the PVL project. The closings are at Poarch Road (MP 5.02) in ~~the county~~ Riverside, and at ~~West~~ 6th Street (MP 19.03) in Perris. It should be noted that the existing grade crossing at Poarch Road is planned to be closed to the public but will continue to be accessible to emergency vehicles only (with a locked gate). The closure of the grade crossing at ~~West~~ 6th Street is in accordance with Riverside's Downtown General Plan.

In ~~addition~~Perris, 5th Street has been temporarily closed by the ~~c~~City ~~of Perris~~ and will be formally vacated for this project. In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. Although this closure is expected to affect fewer than five vehicles during any one hour, 9th Street, which is currently a dirt road, would be paved to accommodate local property access.

Three proposed pedestrian grade crossings are at the Moreno Valley/March Field Station (MP 8.63) and the Perris Station, 1st Street (MP 18.2), and 2nd Street (MP 18.3), and include pedestrian gates and swing gates to reduce the potential for pedestrian conflicts where passengers are required to cross tracks to board trains at stations.

Other work to existing grade crossings, located within the PVL corridor, includes grade separations. Currently there are plans by others to create grade separations at three grade crossings. These are not part of the PVL project. These three locations are along the BNSF alignment at 3rd Street, Columbia Avenue, and Iowa Avenue in the city of Riverside.

1.7.6 Communication Systems

The PVL communication systems would consist of communication towers and associated equipment shelters. This portion of the PVL project would include the construction of nine towers: East Maintenance Facility (outside of the PVL corridor), Control Point (CP) Citrus, Hunter Park Station option microwave tower, CP Marlborough, CP Eastridge, CP Oleander, CP Nuevo, South Perris Station communication shelter and tower, and CP Mapes. Details of the two types of communication towers are described in Section 3.9 Utilities and Service Systems.

The electronics at PVL crossings would be upgraded with crossing predictors to sense the speed and presence of trains. The work would include new or upgraded grade crossing warning devices and new pedestrian crossing warning devices; signal system upgrades; and replacement of control cables, housings, and equipment. The crossing predictors would enable the crossing gates to lower and rise in equal time durations regardless of the speed of approaching trains. Overlay circuits would be installed at each crossing to detect trains while they are still at least one crossing away. Rubberized or asphalt crossings would be replaced with concrete panel crossings.

1.7.7 Noise Barriers

Analysis of potential project noise-related impacts identified a need to construct noise barriers at several locations along Watkins Drive in the UCR area of the city of Riverside. These noise barriers would be placed along the SJBL ROW, replacing existing residential property fences in some instances. The noise barriers will closely resemble a masonry block wall alongside freeways. Details regarding the noise barriers are provided in Section 3.4 Noise and Vibration.

1.7.8 Landscape Walls

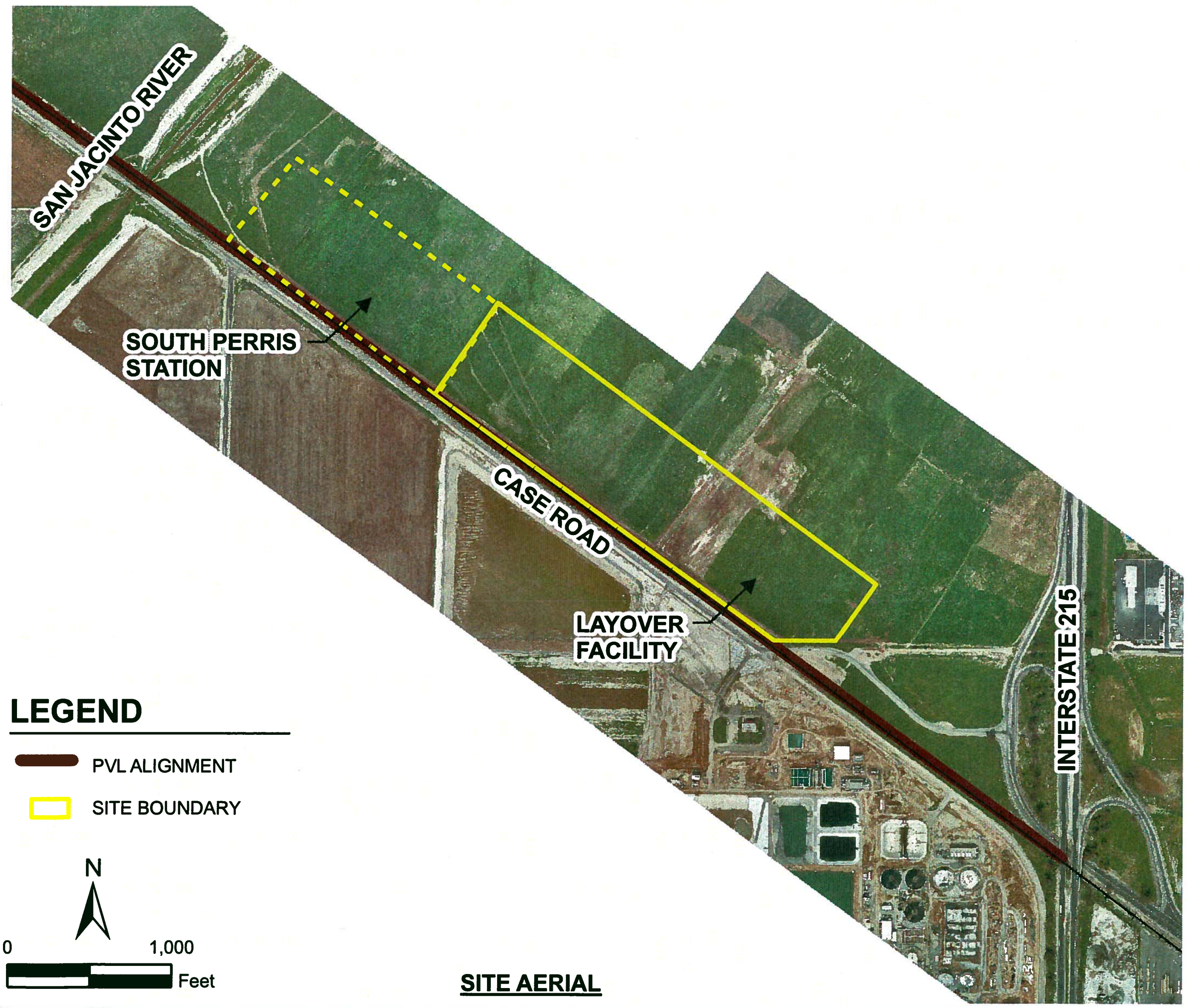
As indicated in Section 1.7 Project Details, the term “landscape wall” describes a free-standing, masonry block wall that will be deployed for reasons other than noise mitigation. ~~A ~~L~~l~~andscape walls will be constructed as part of the PVL project at Highland and Hyatt Elementary Schools. Additionally, RCTC will fund another landscape wall at Nan Sanders Elementary School. Landscape walls are further discussed in Section 3.6 Aesthetics.

In contrast to noise barriers, landscape walls are not mitigation for any identified impacts. In discussions with the Riverside Unified and Perris Union School Districts, it was mutually agreed that the three schools along the PVL would receive a benefit from a landscape wall. The idea for the landscape wall came about after RCTC met with school officials as part of its public information and outreach efforts. School officials expressed concern that the additional daily trains would be a distraction to students. Noise and vibration studies did not identify impacts, so no mitigation was necessary. The landscape wall concept was seen as a reasonable way to allay the school officials concerns.

As such, RCTC agreed that the PVL project will provide landscape walls. The landscape walls will be located within the PVL ROW adjacent to the school properties, not as mitigation. The landscape walls are not intended to provide any function beyond that of a visual screen. They are neither a noise barrier, nor shall they be construed as a safety measure.

This Page Intentionally Left Blank

SITE PHOTOGRAPH (VIEW NORTH)



LEGEND

PVL ALIGNMENT

SITE BOUNDARY

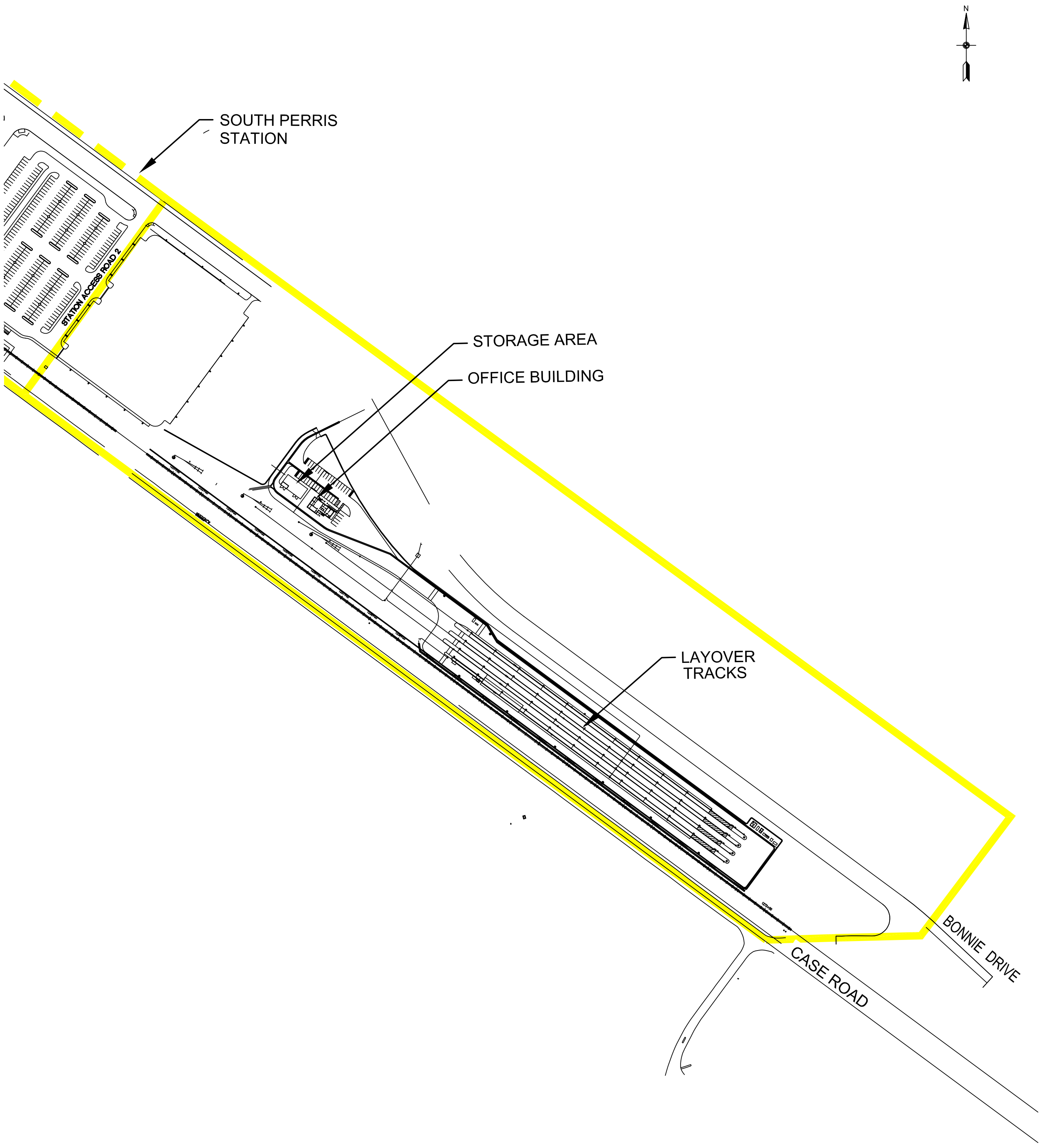
N

0 1,000 Feet

SITE AERIAL

PROJECT NO.	92666	LAYOVER FACILITY	FIGURE 1.7-16
DRAWN:	1/4/10		
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666layover.MXD			

KLEINFELDER
Bright People. Right Solutions.

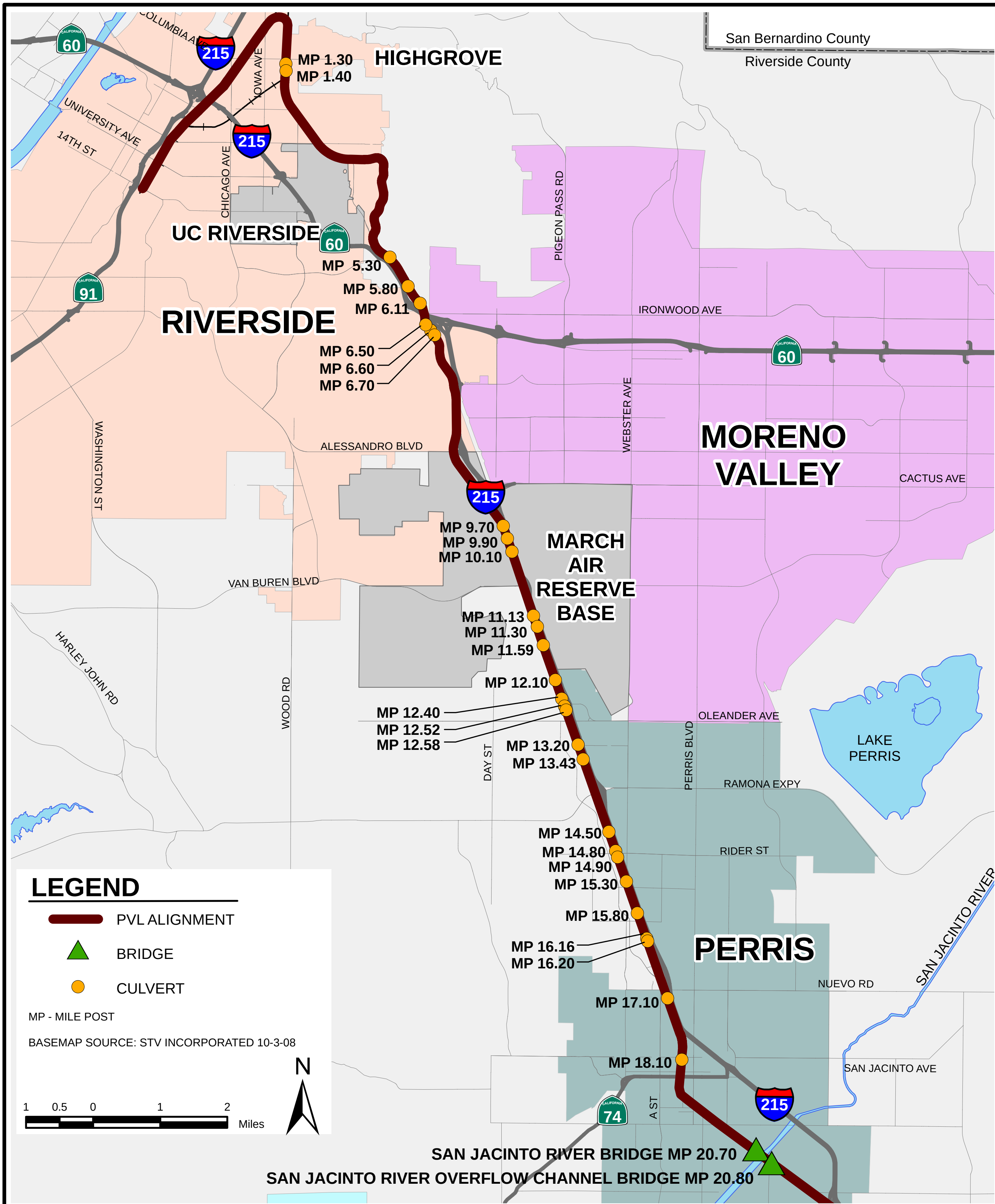


LEGEND

SITE BOUNDARY

NOT TO SCALE

PROJECT NO. 92666	LAYOVER FACILITY ENGINEERING SITE PLAN		FIGURE
DRAWN: 4/15/10			
DRAWN BY: JP			1.7-17
CHECKED BY: RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA		
FILE NAME: 92666layoverE_EA.dwg			



PROJECT NO.	92666
DRAWN:	1/4/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666culvEA.MXD

BRIDGE AND CULVERT IMPROVEMENT LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-18

SAN JACINTO RIVER BRIDGE MP 20.70

SAN JACINTO RIVER OVERFLOW CHANNEL BRIDGE MP 20.80

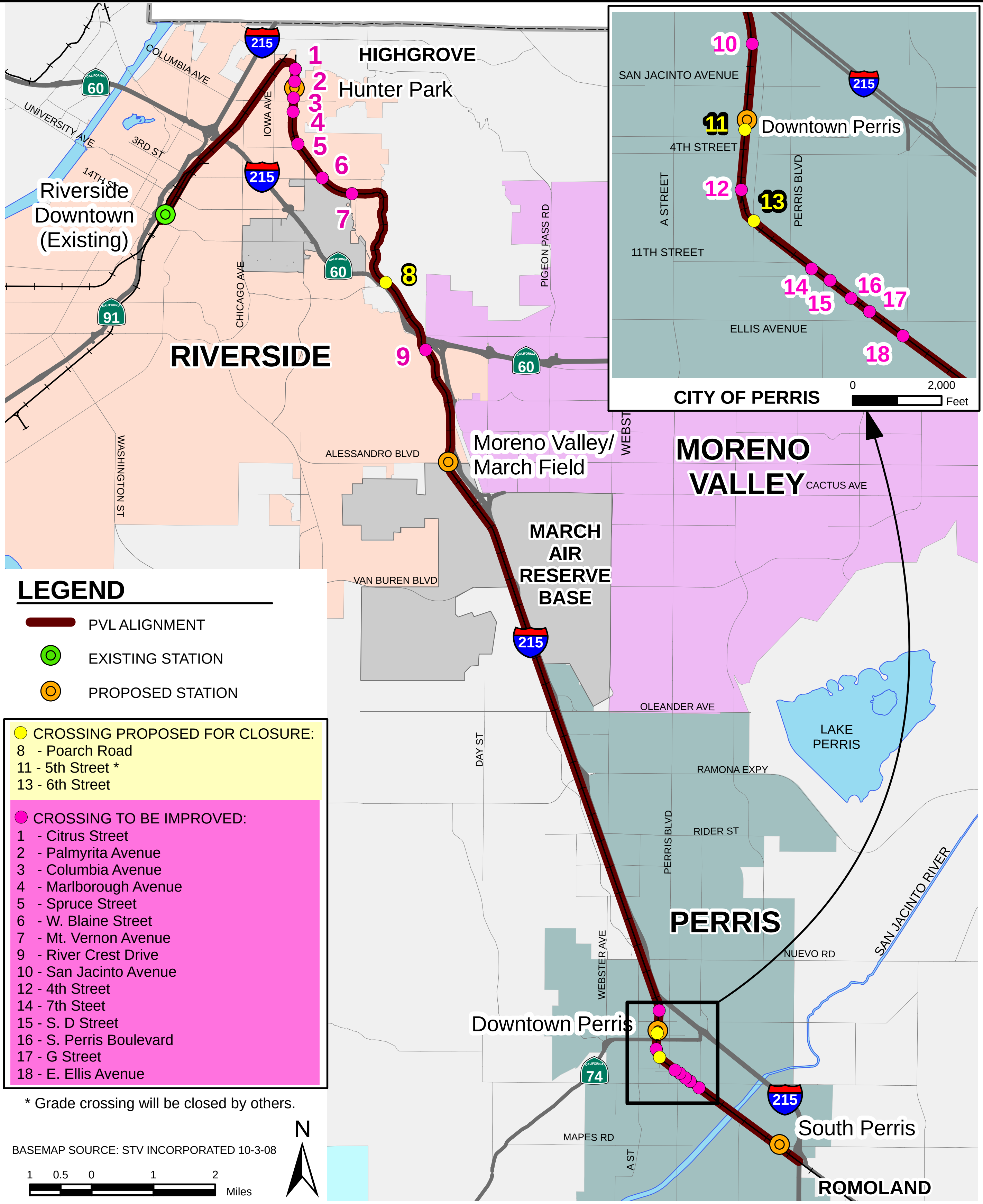
PROJECT NO.	92666
DRAWN:	1/18/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666PHOTO2.dwg

SAN JACINTO RIVER BRIDGES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.7-19



PROJECT NO.	92666	PVL GRADE CROSSING IMPROVEMENTS AND CLOSURES	FIGURE
DRAWN:	1/18/10		1.7-20
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666crossEA.MXD			

1.7.9 Construction

Construction is scheduled to begin in ~~2011~~ 2012 with actual PVL revenue service commencing in ~~2012~~ 2014. These schedule revisions do not result in any substantive changes that warrant revising any of the existing analyses. All construction activities will be conducted in a manner that minimizes impacts to the surrounding area to the extent feasible. RCTC will closely coordinate construction activities with local jurisdictions, schools, and neighborhoods to ensure that community needs are maintained throughout the work.

In addition, the work would be performed in a manner that allows freight delivery to continue while the PVL improvements are being undertaken. Freight delivery schedules will be adjusted to accommodate the work, balancing the need to support business activity of the freight shippers/receivers with the need to remove old track and install new track. Some construction work may be performed at night or on weekends and some train operations may shift to nights or weekends to accomplish the project schedule. In the event that nighttime and weekend work are determined necessary, coordination with the affected local jurisdictions will be undertaken.

Federal regulations and traditional safety practices require that train operations and workers on or near the tracks be protected from each other. This separation is performed by flagmen who assure that workers near the track are safe from oncoming trains, direct the workers to retreat to a place of safety when trains pass, and who assure that the tracks are safe for train operation before permitting trains to pass.

The core of the PVL work would be to remove the existing track and replace it with new track components. This work would likely be performed with specialized equipment that can install about ½ mile of track per day. This equipment is a specialized rail machine that runs on the track and carries the supplies necessary to complete the rehabilitation work. This machine also makes sure that the two rails are level in relation to each other when the work is complete. Other tasks include removing and replacing grade crossings, selected culverts, and bridges. All of these tasks require that the contractor have extended periods (18-96 hours) of exclusive use of the track. Some of the contractor's tasks would not interfere with the operation of trains, and these tasks would be performed during normal working hours. Examples of non-interfering tasks include changes to the embankments, station areas, noise barriers, and signal installations. Segments of wholly new track in the area between Eastridge Avenue and Ramona Boulevard and the areas of very limited freight operations, roughly Ramona Boulevard to the South Perris Station, may be constructed without interference with freight train operation.

Construction will generally take place in at least two locations at any given time; track and grade crossing construction will be done concurrently with station construction. The construction process will begin with the relocation of any public utilities along the alignment. This work is to be done by contractors hired by the utility owners and subject to the control of railroad flagmen. The next step will be the staging of construction materials and equipment. Where needed, the contractor will perform rough grading for embankment changes and construction equipment access. Bridges, selected culverts, and grade crossings will be removed and reconstructed. Replacement of the San Jacinto River bridges will require pile driving.

Once the embankment and culverts are functionally complete, track removal and replacement will be undertaken. Track removal will be performed by typical construction equipment including end loaders, dump trucks, and all-terrain cranes. Replacement of the track will begin with the distribution of a base course of crushed rock ballast. Then, specialized track equipment will be used to place the concrete ties on the ballast and install the rail. About one to two miles of track will be reconstructed during each three to four day work period. After the track is assembled, more crushed rock ballast will be delivered by rail cars and the track would be lined, surfaced, and welded into its final configuration. This will be followed with final shaping of the embankment, cleanup, and installation and testing of the signals. Road crossing work will be coordinated with the train operations and with local traffic authorities to assure that there is advance public notice and adequate alternate routes.

In addition to the equipment identified for track work, the following will also be used throughout the construction of the PVL: scraper, grader, backhoe, excavator, water truck, asphalt paver, vibratory compactor, concrete trucks, generator and light plant for night time work, speed swing, liner/tamper, ballast regulator, and track renewal machine. It should also be noted that any equipment staging areas will be within disturbed areas of the ROW or RCTC property, and not within 500 feet of environmentally sensitive areas.

1.7.10 Operations

RCTC anticipates the PVL will become operational in ~~2012~~2014. Operation of the trains on the PVL will be the responsibility of SCRRA/Metrolink under agreement with RCTC. The ~~2012~~ 2014 opening year operating schedules would include four trains from the South Perris Station to the Riverside Downtown Station with continuing service on the SCRRA/Metrolink 91 line to LA Union Station during the morning peak, and one morning train serving reverse commute trips from LA Union Station to the South Perris Station. In addition, two mid-day, off-peak trains would operate in each direction. During the afternoon peak, four trains would operate from LA Union Station to the South Perris Station and one in-bound train will operate from the South Perris Station to LA Union Station. In all, it is anticipated that there will be a total of twelve daily trips. The interval between each peak period run would be approximately 50 to 60 minutes in the ~~2012~~ 2014 opening year, as shown in Table 1.7-1.

Table 1.7-1
Perris Valley Line - Opening Year (~~2012~~2014) Operations

To Los Angeles		701	703	7X1	7X3	7X5	7X7
91 Line [Perris V, Riverside, Fullerton, Downtown LA]	**South Perris**	3:51 AM	4:51 AM	5:51 AM	6:21 AM	2:13 PM	3:55 PM
	Downtown Perris	3:56 AM	4:56 AM	5:56 AM	6:26 AM	2:18 PM	4:00 PM
	Moreno Valley/ March Field	4:10 AM	5:10 AM	6:10 AM	6:40 AM	2:32 PM	4:14 PM
	Hunter Park	4:19 AM	5:19 AM	6:19 AM	6:49 AM	2:41 PM	4:23 PM
	Riverside - Downtown	4:30 AM	5:30 AM	6:30 AM	7:00 AM	2:52 PM	4:34 PM
	Riverside – LA Sierra	4:40 AM	5:40 AM	6:40 AM	7:10 AM	3:02 PM	4:44 PM
	North Main Corona	4:48 AM	5:48 AM	6:48 AM	7:18 AM	3:10 PM	4:52 PM
	West Corona	4:54 AM	5:54 AM	6:54 AM	7:24 AM	3:16 PM	4:58 PM
	Fullerton	5:19 AM	6:19 AM	7:19 AM	7:49 AM	3:41 PM	5:21 PM
	Buena Park	5:26 AM	6:26 AM	7:26 AM	7:56 AM	4:07 PM	5:26 PM
	Norwalk/Santa Fe Springs	5:34 AM	6:34 AM	7:34 AM	8:04 AM	4:15 PM	5:34 PM
	LA Union Station	6:00 AM	7:00 AM	8:00 AM	8:30 AM	4:39 PM	6:00 PM

Table 1.7-1 (cont'd)
Perris Valley Line - Opening Year (~~2012~~2014) Operations

	To Perris Valley	700	702	704	706	708	710
91 Line [Perris V, Riverside, Fullerton, Downtown LA]	LA Union Station	6:15 AM	11:30 AM	3:30 PM	4:30 PM	5:30 PM	6:15 PM
	Norwalk/Santa Fe Springs	6:36 AM	11:51 AM	3:51 PM	4:51 PM	5:51 PM	6:36 PM
	Buena Park	6:42 AM	11:57 AM	3:57 PM	4:57 PM	5:57 PM	6:42 PM
	Fullerton	6:49 AM	12:04 PM	4:04 PM	5:04 PM	6:04 PM	6:49 PM
	West Corona	7:12 AM	12:27 PM	4:27 PM	5:27 PM	6:27 PM	7:12 PM
	North Main Corona	7:18 AM	12:33 PM	4:33 PM	5:33 PM	6:33 PM	7:18 PM
	Riverside – LA Sierra	7:27 AM	12:42 PM	4:42 PM	5:42 PM	6:42 PM	7:27 PM
	Riverside - Downtown	7:45 AM	1:00 PM	5:00 PM	6:00 PM	7:00 PM	7:45 PM
	Hunter Park	7:51 AM	1:06 PM	5:06 PM	6:06 PM	7:06 PM	7:51 PM
	Moreno Valley/ March Field	8:03 AM	1:18 PM	5:18 PM	6:18 PM	7:18 PM	8:03 PM
	Downtown Perris	8:17 AM	1:32 PM	5:32 PM	6:32 PM	7:32 PM	8:17 PM
	South Perris	8:22 AM	1:37 PM	5:37 PM	6:37 PM	7:37PM	8:22 PM

1.7.11 Maintenance

Currently, maintenance of the SJBL ROW is the responsibility of BNSF under agreement with RCTC. RCTC anticipates that project maintenance will be according to SCRRA/Metrolink standard practices which include: checking/correcting alignment of the rail, checking/correcting alignment of the ties, controlling vegetation within the ROW, and ensuring drainage pathways are clear and functioning. Additional maintenance checks include: checking the crossing gates and associated electronics, and general condition assessment of all rail-related facilities.

The trains will receive overnight service at the Layover Facility by SCRRA/Metrolink personnel or assigned contractors. This service will include cleaning the inside of the trains, emptying the restroom holding tanks, and a general visual evaluation of the trains. Heavy maintenance, including engine overall, parts replacement, scheduled lubrication and fluid replacement, of SCRRA/Metrolink engines and cars will continue to be performed at SCRRA/Metrolink facilities near Colton, or at the facility near downtown Los Angeles Station, Taylor Yard.

1.7.12 Freight Usage

As part of the planning effort for the PVL, RCTC commissioned a study in 2008 to inventory the current freight usage along the SJBL and to determine whether track improvements planned for commuter rail service would facilitate the expansion of freight service along the SJBL (Wilbur Smith Associates, 2008). Under the shared use agreement between BNSF and RCTC, freight usage of the improved SJBL would continue following the start of revenue service of the PVL.

Currently, there are eight shippers between Riverside and Romoland with sidings off of the SJBL. The existing facilities ship a variety of products, including paper stock, resins, lumber, chlorine, and agricultural products. Many of the freight shippers using the SJBL transport goods outside of California and the western states, and in some cases, to Canada.

According to the findings of the study, it is unlikely that the improvements will benefit shippers in any material way. No shippers indicated that the improvements will result in an increase of their rail shipments. Track improvements and other upgrades proposed as part of the PVL are aimed at improving operations and safety to accommodate commuter rail service. These improvements will provide safety benefits that accrue to both commuter and freight operations (for example, grade and pedestrian crossing improvements and improved communications). However, rail improvements are not needed to accommodate freight loading, as the existing SJBL track and sidings can already carry the heaviest car weight of 286,000 pounds. Because no additional weight capacity will be added, or is even needed for existing users of the BNSF, PVL-related track improvements will not create conditions that could either increase the volume of freight shipped per carload or the number of weekly carloads.

Although track upgrades will improve operations and theoretically allow trains to travel at faster speeds, freight trains are limited to traveling at 20 miles per hour (mph) north of Perris. Southbound freight trains will continue to operate at lower speeds to maneuver the climb through Box Springs Canyon. The current freight inventory indicates that freight shipments often travel thousands of miles, and therefore any upgrades to the existing 21-mile-long SJBL segment to allow for even minor increases in train speed have little overall impact on the total travel time of the shipment.

Improvements to the SJBL to provide for commuter rail service will not facilitate expansion of freight volume or the number of freight trains operating along the PVL alignment. While PVL track improvements will provide for reduction in potential schedule conflicts, upgrades to the rail line would not result in additional freight demand. The study concluded that economic factors, rather than rail improvements, dictate freight demand.

The SJBL is already accessible to the BNSF via the existing connection near Center Street in the community of Highgrove. The existing connection could also be used by commuter rail and was previously analyzed in the Alternatives Analysis as the Commuter Rail Alternative with Highgrove Turnback (see Chapter 3.0 for Project Alternatives). However, one of the key factors for commuter rail viability is travel time. Use of the Highgrove Turnback at Center Street to move between the BNSF and SJBL would require trains to stop and reverse direction and undergo a number of safety checks prior to continuing along the alignment. The additional time required for this maneuver would effectively degrade commuter rail travel time such that its viability becomes questionable. However, freight operations are not as time sensitive to operate effectively.

Freight operations are dictated by costumer demand; in turn, customer demand is a function of economic conditions. The relationship between an improved SJBL alignment and increased freight operations is tenuous, at best. The business decision to provide freight service along the SJBL is profit driven. As long as the customer demand for freight service is low, there is no reason to assume BNSF would increase operations on the SJBL, regardless of track conditions.

1.8 ACQUISITIONS AND RELOCATIONS

RCTC currently owns the existing SJBL ROW, however, parcels would be required for the Citrus Connection, Hunter Park Station, South Perris Station, Layover Facility, and for project related street improvements. Parcels are in the process of being obtained by RCTC for the Moreno Valley/March Field and are already secured for the Downtown Perris Station.

Citrus Connection

ROW must be acquired to create the connection between the BNSF and SJBL. The Citrus Connection will require the acquisition of approximately 17.22 acres, comprising two parcels which are currently vacant. The assessor parcel numbers (APNs) for these parcels are 247-112-007 and 247-150-040 and are shown on Figure 1.8-1.

Hunter Park Station Options

The proposed Hunter Park Station location was selected after consideration of three potential sites along Palmyrita, Columbia, and Marlborough Avenues. The 9.35 acre Marlborough site was eventually selected.~~The location for the Hunter Park Station will be selected from three options, which are generally adjacent to one another, and described below. Depending on the Hunter Park Station option selected by RCTC, the required acquisitions would range between 9.34 acres (for the Columbia Station option) and 24.08 acres (for the Palmyrita Station option).~~ The Hunter Park Station (Marlborough site) parcel~~s~~ to be acquired ~~are~~ is shown on Figure 1.8-2.

~~*Palmyrita Station Option*: Located between Palmyrita and Columbia Avenues on the east side of the SJBL, this site is approximately 24.08 acres, although planned for development to include a warehouse, the site is currently vacant. If selected for the Hunter Park Station, existing improvements would require demolition. The APN for this site option is 249-060-033.~~

~~*Columbia Station Option*: Also located between Palmyrita and Columbia Avenues, on the west side of the SJBL, the Columbia site is approximately 9.34 acres. This site is currently a citrus grove. The APNs for this site option are 249-060-034 and 249-060-035.~~

Marlborough Station Option: Located on the west side of the SJBL, on a parcel south of Columbia Avenue and north of Marlborough Avenue, the site is approximately 9.36 acres. The site is currently undeveloped. The APNs for this site option are 249-070-042 and 249-070-043.

Moreno Valley/March Field Station

RCTC is currently in the process of obtaining the Moreno Valley/March Field Station site from March JPA, by donation. This station and associated impacts were evaluated in the March Business Park (now Meridian) EIR. This station site is approximately 14.46 acres, which is currently undeveloped. The APN is 297-100-036 and is shown on Figure 1.8-3.

South Perris Station and Layover Facility

For the South Perris Station and Layover Facility, approximately 26.50 acres will need to be acquired by the RCTC. This site is currently undeveloped. The APNs are 327-200-001 and 327-020-009 as shown on Figure 1.8-4.

Project Related Street Improvements

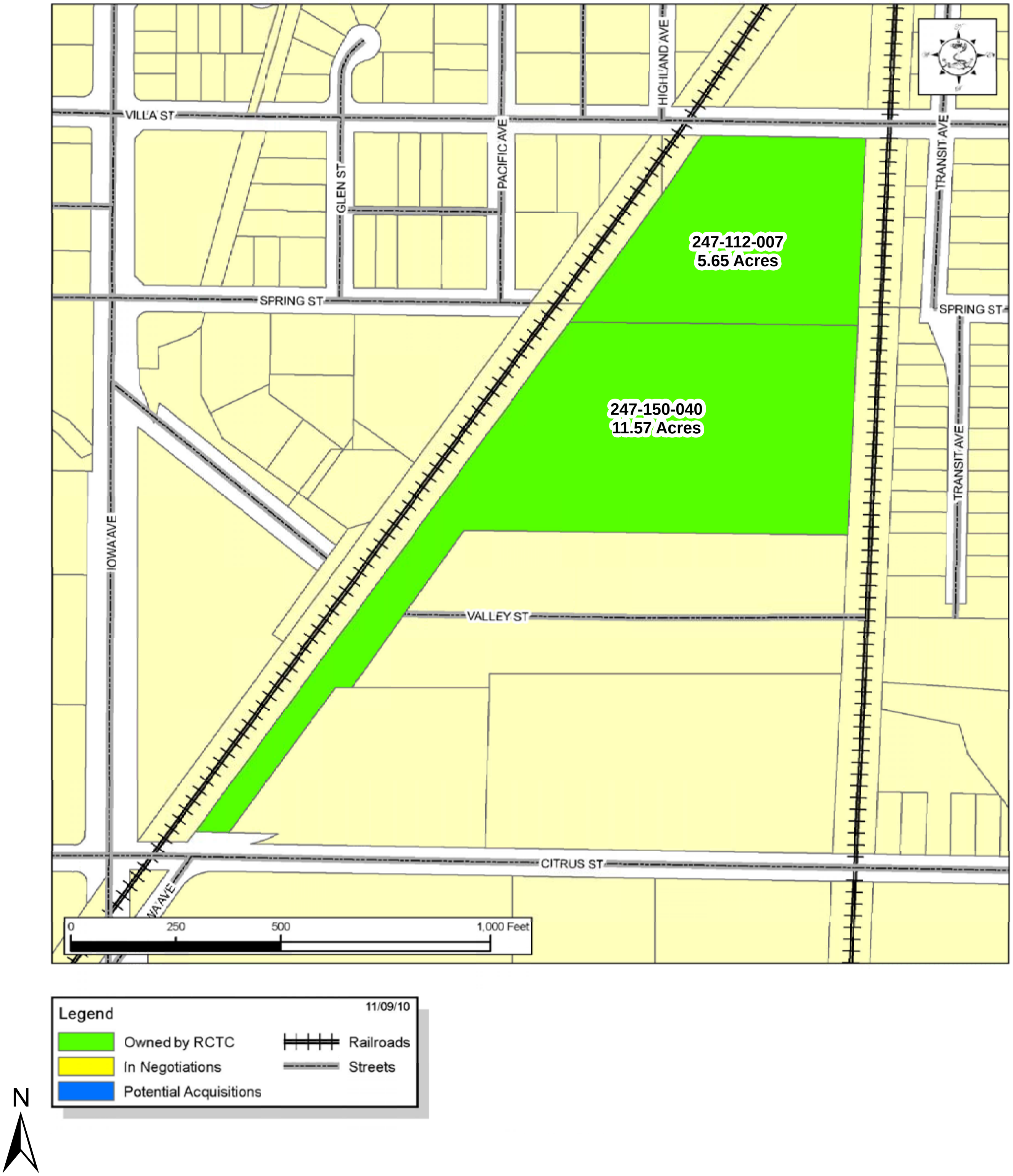
Additional parcels will be acquired for~~to do~~ project related street improvements in the city of Perris. One site is along San Jacinto Avenue at C Street, APN 311-100-021. Approximately 0.04 acres will need to be acquired by RCTC. The second site is located on 7th Street at D

Street, APN 313-114-005. Approximately 0.01 acres will need to be acquired by RCTC. Another site is located along Case Road, APNs 310-140-019 and 310-160-070. Approximately 0.02 and 0.01 acres will need to be acquired by RCTC, respectively. The last site is located along Perris Boulevard, APNs 310-150-002, 313-272-009, and 313-282-048. Approximately 0.03, 0.01, and 0.01 acres will need to be acquired by RCTC, respectively. These sites are shown in Figure 1.8-5.

For any of the facilities identified above, there is currently no need for any relocation. Table 1.8-1 summarizes PVL's proposed acquisitions, although additional acquisitions may be necessary based on final engineering. In addition, it should be noted that during construction there may be a need for temporary access to specific areas depending on the construction activity and the type of construction equipment. These temporary work areas would be identified as 'temporary construction easements'.

Table 1.8-1
PVL Parcel Acquisitions

Site	APN	Owner	Parcel Acres	Acreage to be acquired for PVL
Citrus – Parcel 1	247-112-007	Lincoln National Life Insurance Company	5.65	5.65
Citrus – Parcel 2	247-150-040	Lincoln National Life Insurance Company	11.57	11.57
~~Hunter Park Station Palmyrita Option~~	~~249-060-033~~	~~MDC Hunter Park, LLC~~	~~24.08~~	~~24.08~~
~~Hunter Park Station Columbia Option – Parcel 1~~	~~249-060-034~~	~~Thompson, Kenneth & Vera Ann~~	~~4.78~~	~~4.78~~
~~Hunter Park Station Columbia Option – Parcel 2~~	~~249-060-035~~	~~Thompson, Kenneth & Vera Ann~~	~~4.56~~	~~4.56~~
Hunter Park Station Marlborough Option – Parcel 1	249-070-042	Grove Business Park, LLC	9.35	9.35
Hunter Park Station Marlborough Option – Parcel 2	249-070-043	Grove Business Park, LLC	6.61	0.01
Moreno Valley/March Field Station	297-100-036	LNR Riverside II, LLC	14.46	14.46
South Perris and Layover Facility – Parcel 1	327-200-001	Intex Property Perris Valley	140.51	37.70
South Perris – Parcel 2	327-020-009	Intex Property Perris Valley	104.24	1.65
7th Street and D Street Improvements	313-114-005	American Legion Perris Post 395	0.65	0.01
San Jacinto Avenue Improvements	311-100-021	County of Riverside	4.89	0.04
Case Road and G Street Improvements – Parcel 1	310-140-019	Arturo and Isabel Munoz	0.31	0.02
Case Road and G Street Improvements – Parcel 2	310-160-070	Integrity Capital Palomar, LLC	3.32	0.01
Perris Boulevard and 11th Street Improvements – Parcel 1	310-150-002	Orlando and Matilde Sanchez	0.21	0.03
Perris Boulevard and 11th Street Improvements – Parcel 2	313-272-009	Pentecostal Church of God	0.19	0.01
Perris Boulevard and 11th Street Improvements – Parcel 3	313-282-048	Apolinar and Florina Sanchez	0.25	0.01
Parcel Totals			~~**335.63**~~ **302.21**	~~**113.93**~~ **80.52**



SOURCE:

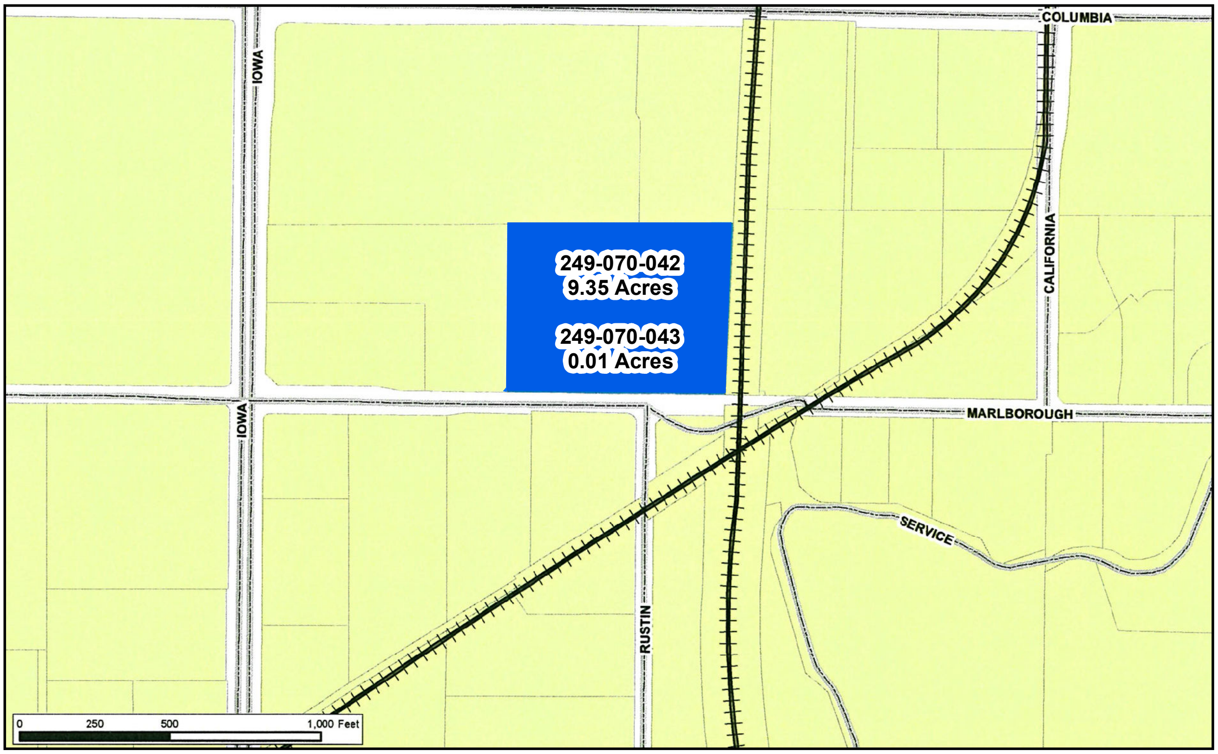
RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

PROJECT NO.	92666
DRAWN:	11/16/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666parcel1ea.MXD	

CITRUS CONNECTION
PARCEL ACQUISITION

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
1.8-1



N

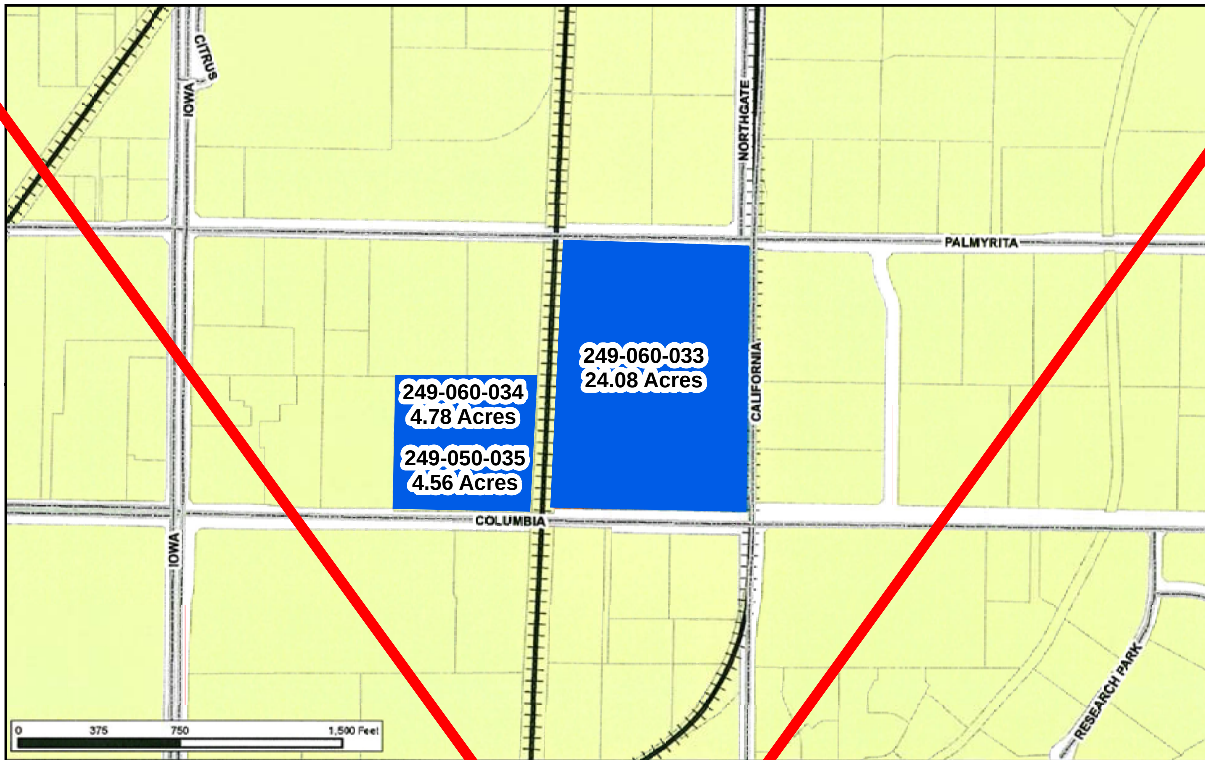
SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM,
AND EPIC LAND SOLUTIONS, DECEMBER 2009

Legend

- Proposed Acquisitions
- Railroads
- Streets

PROJECT NO.	92666	**HUNTER PARK STATION PARCEL ACQUISITION**	FIGURE
DRAWN:	12/19/11		**1.8-2**
DRAWN BY:	JP	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
CHECKED BY:	RM		
FILE NAME: 92666parcel5ea.MXD			



Legend

Proposed Acquisitions

Railroads

Streets

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM, AND EPIC LAND SOLUTIONS, DECEMBER 2009

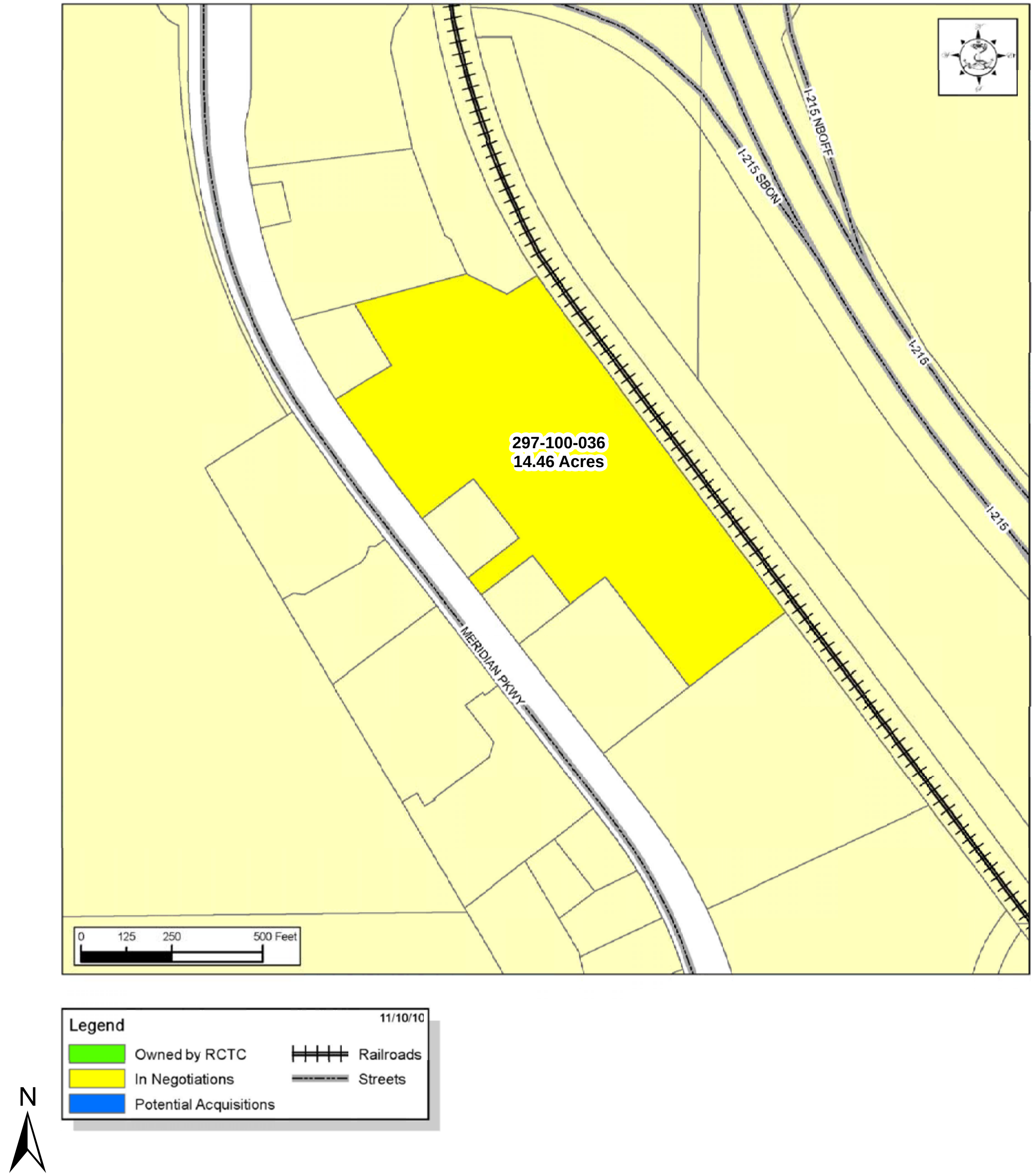
PROJECT NO.	92666
DRAWN:	11/16/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666parcel5ea.MXD	

HUNTER PARK STATION
PARCEL ACQUISITION

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

1.8-2



SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

PROJECT NO.	92666
DRAWN:	11/16/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666parcel3ea.MXD

MORENO VALLEY/
MARCH FIELD STATION
PARCEL ACQUISITION

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
1.8-3

Legend 11/09/10

- Owned by RCTC
- In Negotiations
- Potential Acquisitions
- Railroads
- Streets

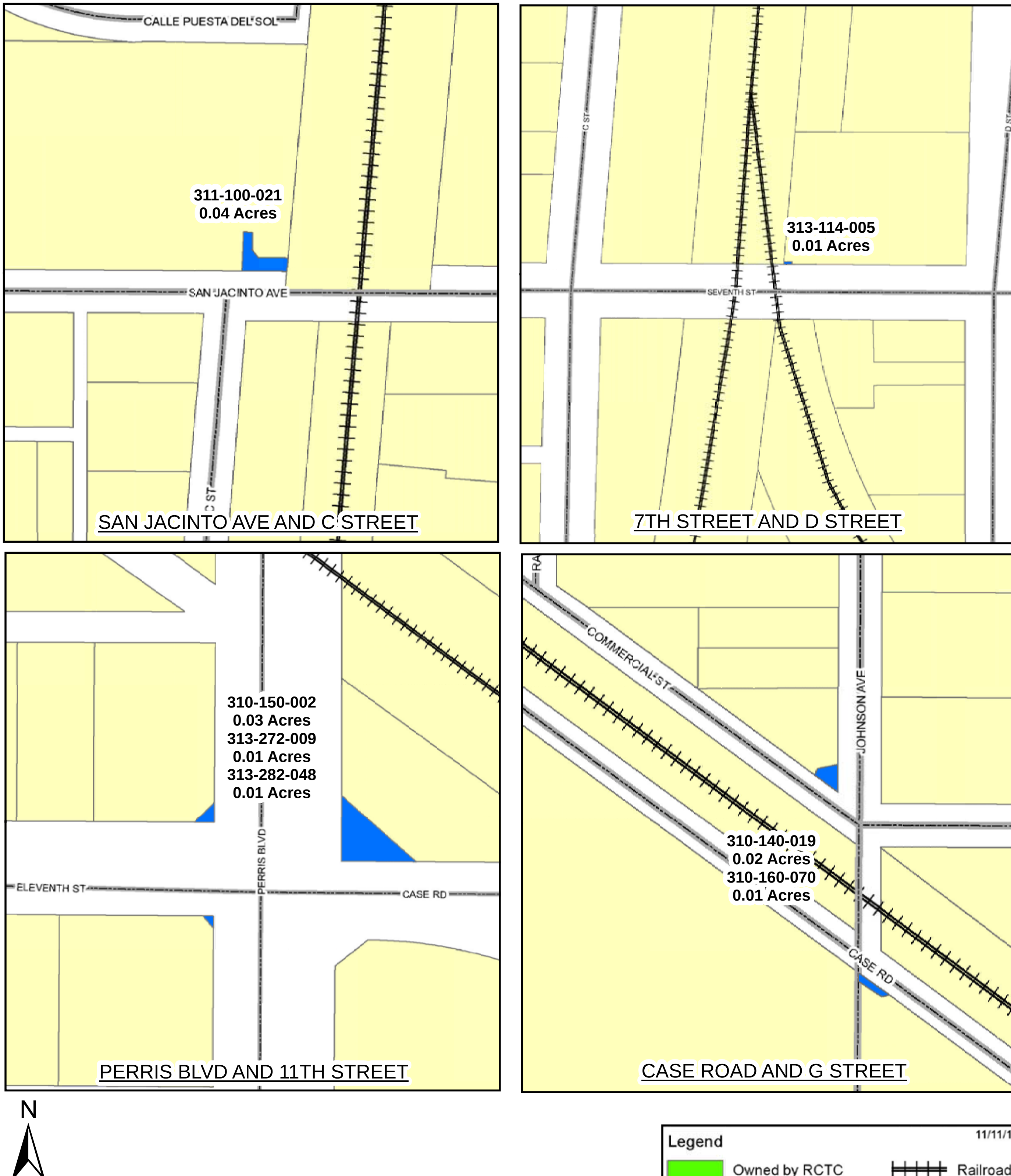
N

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

PROJECT NO.	92666	**SOUTH PERRIS STATION AND LAYOVER FACILITY PARCEL ACQUISITION**	FIGURE
DRAWN:	6/22/11		**1.8-4**
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666parcel14sea.MXD			

KLEINFELDER Bright People. Right Solutions.



Legend 11/11/10

- Owned by RCTC
- In Negotiations
- Potential Acquisitions
- Railroads
- Streets

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOULTIONS, DECEMBER 2009

NOT TO SCALE

PROJECT NO.	92666	STREET IMPROVEMENTS PARCEL ACQUISITION
DRAWN:	11/18/10	
DRAWN BY:	JP/KH	
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA
FILE NAME: 92666parcel9ea.MXD		

FIGURE

1.8-5

1.9 ENVIRONMENTAL PERMITS

The activities identified in this SEA require consultation and possible permitting with federal, state, and local agencies, listed in Table 1.9-1.

Table 1.9-1
Agency Actions and Approvals

Agency/Jurisdiction	**Action**
Local/Municipality/County	
City of Perris	Design Review
City of Riverside	Design Review
March Joint Powers Authority (March JPA)	Design Review
Regional Conservation Authority (RCA)	Consistency Determination with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
Riverside Airport Land Use Commission (ALUC)	Consistency with airport plans
Riverside County Flood Control and Water Conservation District (RCFCWCD)	"No Rise" determination improvements to drainage structures
Riverside Transit Agency (RTA)	Design Review at Downtown Perris
Regional	
Southern California Association of Governments (SCAG) Transportation Conformity Working Group (TCWG)	Conformity with local air quality plans
Southern California Regional Rail Authority (SCRAA)	Design Approval
State	
California Department of Fish and Game (CDFG)	1602 Streambed Alteration Agreement
California State Office of Historic Preservation (SOHP)	Section 106 Concurrence
California Public Utilities Commission (CPUC)	Grade Crossing Improvements
Santa Ana Regional Water Quality Control Board (SARWQCB)	Section 401 Permit
Federal	
Federal Communication Commission (FCC)	Communication equipment frequencies
U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation
U.S. Army Corps of Engineers (USACE)	Section 404 Permit
Railroad	
Burlington Northern Santa Fe Railway (BNSF)	Design Approval
Union Pacific Railroad (UP)	Design Approval at ROW crossing

~~**Agency**~~	~~**Action**~~
~~California Department of Fish and Game (CDFG)~~	~~1602 Streambed Alteration Agreement~~
~~Santa Ana Regional Water Quality Control Board (SARWQCB)~~	~~Section 401 Permit~~
~~United States Army Corps of Engineers (USACE)~~	~~Section 404 Permit~~
~~Regional Conservation Authority (RCA)~~	~~Consistency Determination with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)~~
~~California Office of Historic Preservation (OHP)~~	~~Section 106 Concurrence~~
~~Riverside County Flood Control and Water Conservation District (RCFCWCD)~~	~~"No Rise" determination improvements to drainage structures~~

~~Agency~~	~~Action~~
~~Transportation Conformity Working Group (TCWG)~~	~~Conformity with local air quality plans~~
~~Southern California Regional Rail Authority (SCRRA)~~	~~Design Approval~~
~~BNSF Railway Co.~~	~~Design Approval~~
~~UP Railroad~~	~~Design Approval at the ROW crossing~~
~~March Joint Powers Authority (March JPA)~~	~~Design Review~~
~~Riverside Transit Agency (RTA)~~	~~Design Review at Downtown Perris~~
~~City of Riverside~~	~~Design Review~~
~~City of Perris~~	~~Design Review~~
~~California Public Utilities Commission (CPUC)~~	~~Grade Crossing Improvements~~
~~Federal Communication Commission~~	~~Communication equipment frequencies~~
~~Airport Land Use Commission (ALUC)~~	~~Consistency with airport plans~~

2.0 PROJECT ALTERNATIVES

2.1 INTRODUCTION

2.1.1 FTA Responsibilities

The FTA has previously approved the PVL project as qualifying under the FTA Small Starts category (49 United States Code [USC] Section 5309). This qualification/approval is based on the preliminary estimates that the project is expected to cost less than 250 million dollars and require less than 75 million dollars in federal funding.

The analysis provided in this SEA will assist FTA in determining the significance of environmental impacts resulting from the PVL project. If it is determined that the PVL would not result in a significant impact to the environment, a FONSI will be prepared to conclude the process and formally document the decision.

2.1.2 RCTC Responsibilities

State law created the Riverside County Transportation Commission in 1976 to oversee funding and coordination of all public transportation services within Riverside County. The Commission's governing board is made up of 32 members including a city council member from each incorporated city and the five members of the Board of Supervisors and a non-voting Governor appointee.

RCTC serves as the tax authority and implementation agency for Measure A, a 1/2 cent sales tax program initially approved by voters in 1988 and subsequently in 2002, and will remain in place until 2039. Measure A funds highway, street and road, and transit projects throughout Riverside County. In addition to Measure A funding, RCTC also allocates state and federal transportation dollars to their local jurisdictions.

The Commission also implements new transportation projects through a Highway and Rail Delivery Plan. In transit RCTC operates and funds commuter rail services and stations, works with local employers to provide commuter assistance programs, oversees public transit funding and providers, and administers the Call Box and Freeway Service Patrol programs. Additionally, the Commission serves as Riverside County's Congestion Management Agency, and actively participates in regional goods movement issues. RCTC is also one of a five-county joint powers authority that makes up the Southern California Regional Rail Authority better known as Metrolink.

In 2004 RCTC developed goals to identify transportation and community related needs within western Riverside County and develop transit solutions to meet those needs. Study efforts have documented a significant increase in population and development within western Riverside County. The accompanying land use patterns that have shaped this growth have additional transportation impacts. The suburban low-density residential developments in this area require an automobile for almost all trips. Even more pronounced is the reduced availability of employment in Riverside County relative to its population, and as a result many residents must commute long distances to jobs outside the county. These factors have resulted in significant burdens on transportation system users, the roadway network, and residents.

RCTC considered existing and projected transportation conditions within the western Riverside County based upon highway congestion, the growth of population and employment centers, and planned transportation improvements within the I-215/SR-60 corridor. RCTC determined that this corridor is severely constrained by several conditions, including:

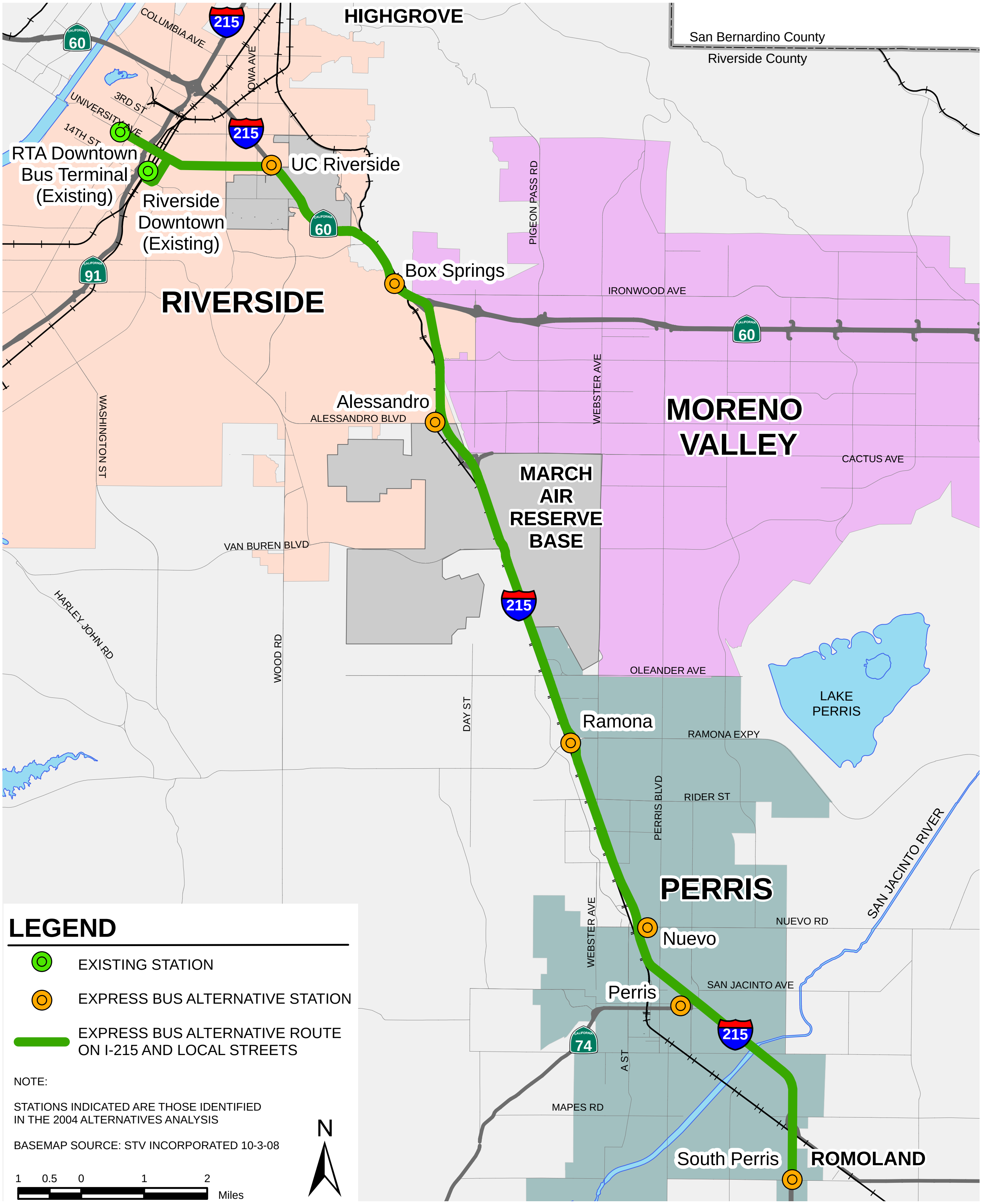
- Both local and regional transportation movement occurs primarily via the already congested I-215 freeway between the cities of Riverside and Moreno Valley;
- At the convergence of I-215/SR-60, a bottleneck is created in the region's transportation network, and there are no roadway alternatives that could relieve congestion in the I-215/SR-60 area;
- Current and planned freeway improvements will not meet forecasted travel demand; and,
- Potential freeway expansion beyond currently planned improvements would have substantial adverse impacts on adjoining neighborhoods.

While a number of transportation improvements have been implemented to reduce traffic congestion, community and transportation related needs have not been fully addressed. The region's existing transportation facilities have not been able to accommodate the growing trip volumes without experiencing extensive congestion along the corridor. Consideration of the transportation issues in the study corridor, including the constraints to additional freeway widening, the existence of underutilized transportation resources, and the need to provide transit travel options to a growing population and employment centers lead to the development of project goals and objectives. In order to focus on an appropriate range of transportation solutions, RCTC developed project related goals and objectives.

2.2 DESCRIPTION AND EVALUATION OF ALTERNATIVES

RCTC considered five alternatives in its AA to alleviate existing and future transportation deficiencies through the use of existing transportation resources in the study corridor. The alternatives were described and evaluated based upon the criteria that measured the ability of each alternative to satisfy the Goals and Objectives of the study (see Sections 1.4 Project Purpose and Need and 1.5 Project Goals and Objectives). The five alternatives included:

- No Project Alternative – Planned roadway improvements along I-215 because it represents a continuation of current transportation planning efforts.
- Express Bus Alternative – Potential improvements in express bus service on the highway network as shown on Figure 2.2-1.
- Commuter Rail Alternatives – New commuter rail service options that runs parallel to a substantial portion of the I-215 with different connection options:
    - New connection to Union Pacific Riverside Industrial Lead (UP RIL), as shown on Figure 2.2-2.
    - Connection to BNSF with Highgrove Turnback, as shown on Figure 2.2-3.
    - New connection to BNSF at Citrus Street (Citrus Connection), as shown on Figure 2.2-4.



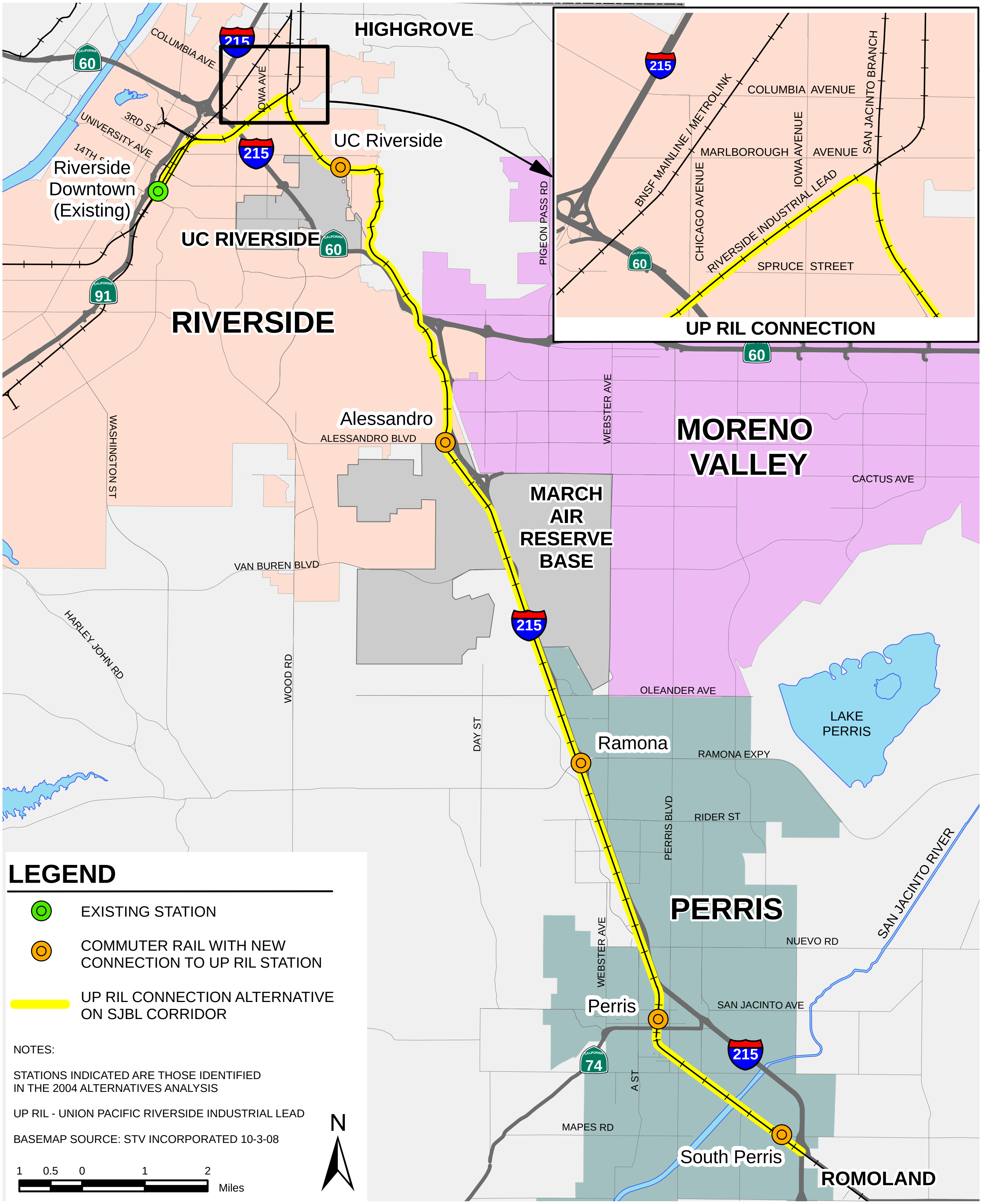
PROJECT NO.	92666
DRAWN:	5/17/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666bus.MXD

2004 ALTERNATIVES ANALYSIS - EXPRESS BUS ALTERNATIVE

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

2.2-1

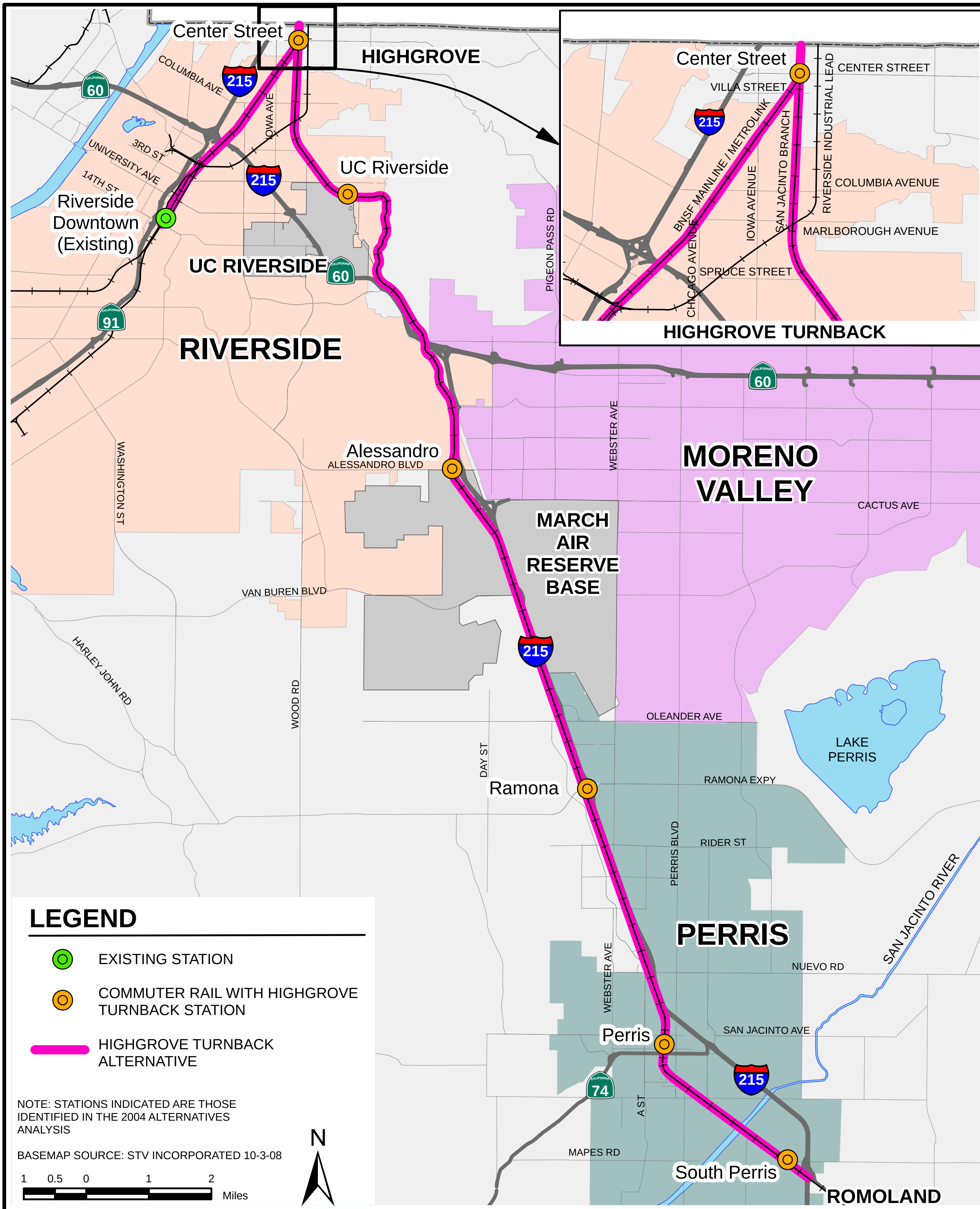


PROJECT NO.	92666
DRAWN:	5/17/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666union.MXD

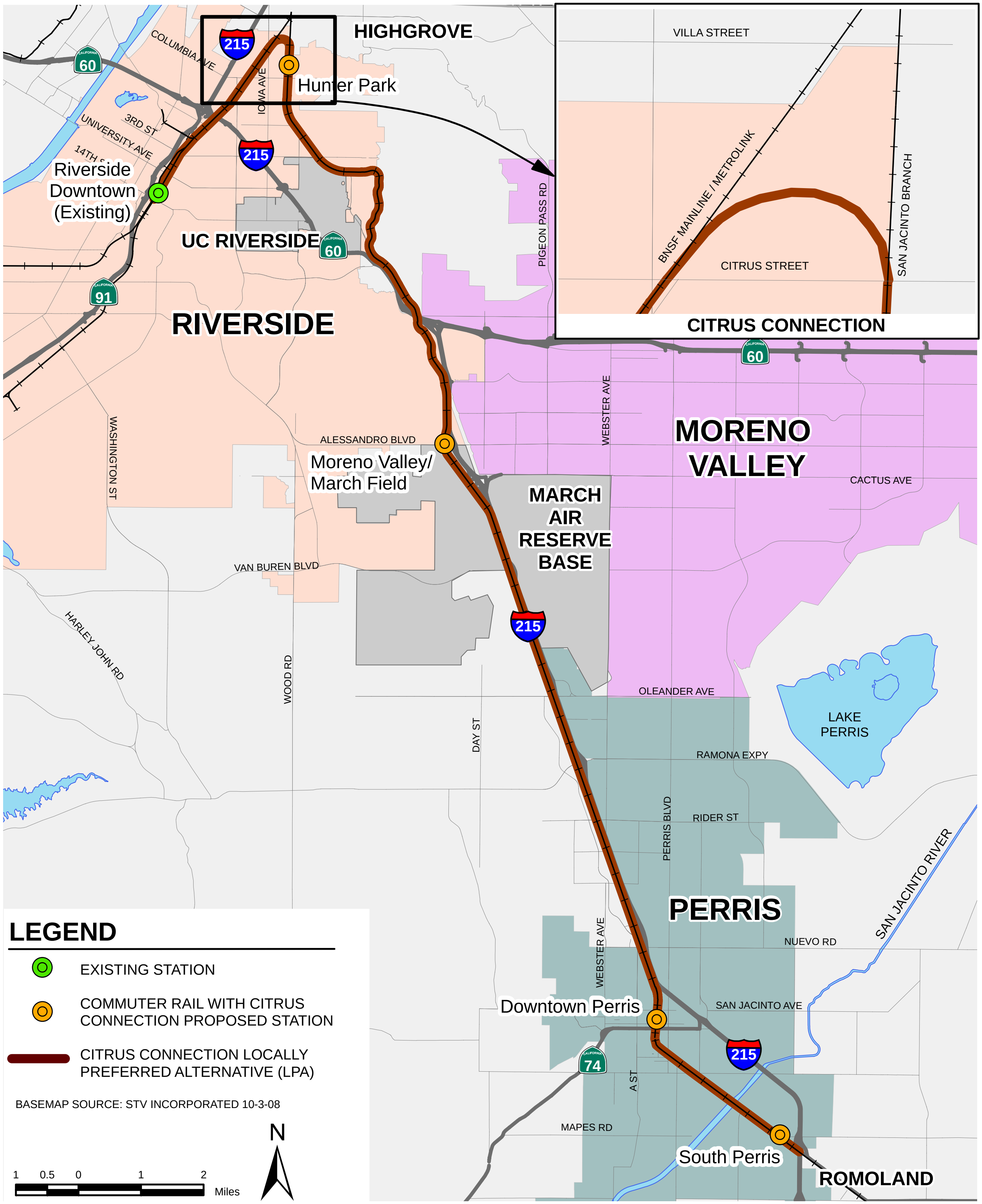
2004 ALTERNATIVES ANALYSIS - COMMUTER RAIL ALTERNATIVE WITH NEW CONNECTION TO UP RIL

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE 2.2-2



PROJECT NO. 92666	2004 ALTERNATIVES ANALYSIS - COMMUTER RAIL ALTERNATIVE WITH HIGHGROVE TURNBACK	FIGURE
DRAWN: 5/17/10		
DRAWN BY: JP		2.2-3
CHECKED BY: RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666hgrove.MXD		



PROJECT NO.	92666
DRAWN:	5/17/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666comm.MXD

LOCALLY PREFERRED ALTERNATIVE
COMMUTER RAIL
WITH CITRUS CONNECTION

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
2.2-4

2.2.1 No Project Alternative

The No Project Alternative would be the continuation of current and long-range plans for highway improvements, and maintaining the existing rail corridor for continued freight service. There are several planned and programmed roadway improvements along I-215 to include widening this freeway between the I-215/SR-60 interchange and Nuevo Road, between Nuevo Road and Scott Road, and between Scott Road and Murrieta Hot Springs Road. Even with current and programmed improvements that include additional general purpose and High-Occupancy Vehicle (HOV) lanes, I-215 is forecasted to continue to operate at unsatisfactory service levels. As evidenced by increasing travel times, the I-215 freeway cannot keep pace with the projected demand resulting from population, employment, and development growth in the study corridor. With the major transportation facilities in the corridor, I-215 and SR-60, expected to continue experiencing unsatisfactory levels of service even with programmed roadway improvements over the coming years, there is a need for a new transportation alternative to accommodate current and future mobility needs.

The No Project Alternative would not meet any of the identified project Goals and Objectives. This alternative would not provide a different mode of passenger transportation between Riverside and Perris (auto and bus modes would still be tied to the congested roadway network). Additionally, it would not reduce highway congestion in the corridor, thus furthering impacts to the natural environment with increased impacts to air quality within the corridor. The No Project Alternative would not broaden the range of public transportation alternatives between the various urban areas along the corridor and region, nor would it build upon an underused transportation resource within the corridor. Therefore, the No Project Alternative was eliminated from further evaluation, since it did not meet any of the goals and objectives for the project.

2.2.2 Express Bus Alternative

The Express Bus Alternative consists of low-capital improvements to existing transit facilities and services that would operate on I-215 HOV lanes between Downtown Riverside and Perris, as shown on Figure 2.2-1. To support this service, local feeder bus connections are proposed for the express bus route. Metrolink commuter rail service in Riverside would also benefit from any additional transfers from the feeder buses. The Express Bus Alternative comprises seven new stations within the I-215 corridor and two existing stations, including the Riverside Downtown Metrolink Station and the RTA Downtown Bus Terminal in downtown Riverside. The express bus service would be coordinated to reach the Riverside Downtown Metrolink Station during peak periods such that connections could be made to departing (AM) and arriving (PM) trains. In addition, linkages to local bus route services will complement the proposed service. Several local routes will incorporate an additional “express bus stop” in order to provide greater connectivity and faster transportation service between the municipalities in the corridor.

This alternative would not adequately meet a majority of the four established project goals and their respective objectives. While improving the attractiveness of public transit as an alternative to the automobile this option does not reduce highway congestion in the corridor. The congested freeways, in particular the I-215/SR-60 interchange, affect the ability for the Express Bus Alternative to provide congestion relief. The operation of this alternative would require the buses to continually cross highly congested mixed-flow lanes to use the planned HOV lanes between the new stations, thus adversely affecting their travel times and ridership. Ridership growth was projected to be minimal, largely due to longer travel times on the increasingly congested freeways. Minimizing environmental impacts for this alternative would not be met as effectively as the commuter rail alternatives. Seven new stations are proposed for the Express Bus Alternative, the greatest number of stations compared to the other alternatives, requiring more right-of-way acquisition which increases land use impacts to the corridor. As a result of the longest travel time from increasing highway congestion throughout the forecast years, impacts to air quality and traffic would be significant. Lastly, while this alternative proves to be the most cost effective (lowest total capital expenditure) the performance of this alternative was deemed insufficient to meet the needs of commuters in the corridor.

2.2.3 New Commuter Rail Alternatives

Three build alternatives were identified that would implement commuter rail service in the corridor between Riverside and Perris. The study corridor includes an existing railroad ROW, the SJBL, which could provide a commuter rail route that would avoid the impediments to mobility that are found in the corridor and which cannot be adequately addressed by the other alternatives. The three new commuter rail alternatives are comparable because the alternatives are similar in terms of operation.

Each commuter rail alternative extends the Metrolink 91 Line service from the existing Downtown Riverside Station to San Bernardino, Orange, and Los Angeles Counties. The differences in the three commuter rail alternatives include the various options to connect the SJBL mainline for service to the existing Metrolink station in downtown Riverside. The commuter rail service would operate during the peak period and in the peak direction. The operating schedule will be such that arrival and departure at Los Angeles Union Station would coincide with typical work schedules, in an effort to make the new service as attractive as possible to commuters. Different route lengths and operational considerations for each alternative are described in detail below.

The Commuter Rail Alternatives successfully meet a majority of the project goals and objectives. Specifically, these alternatives build upon underused transportation resources since track in the region is currently only servicing freight operations. Commuter rail service expands not only the regional transit network but also beyond the study corridor and promotes a seamless transit system. These alternatives would strengthen older urban communities as centers of economic opportunity by fostering transit-oriented development. Improving mobility through the corridor without the dependency to rely on and add to the congestion of highways. Since all three commuter rail alternatives would satisfy the above stated project goals and objectives the remainder of the discussion will focus on the goals and objectives, specifically in terms of environmental impacts, that would not be meet by each alternative.

<u>Commuter Rail with New Connection to UP RIL Alternative</u>

This commuter rail alternative would connect the SJBL to the existing Riverside Downtown Station via the Union Pacific Riverside Industrial Lead (UP RIL) (an active freight service line) without connecting to the BNSF mainline, as shown on Figure 2.2-2. A connection track would be constructed between the SJBL and the UP RIL near Rustin Avenue in Riverside. The new connection track would allow for continuous movement between the SJBL and the existing Riverside Downtown station. This commuter rail alternative with new connection to UP RIL would include the construction of five stations.

The new connection at Rustin Avenue would require acquisition of one vacant tract and a parcel that contains an existing building. In addition, a new grade crossing with signal protection would be required. The new track would require the displacement of a commercial property and acquisition of new property for a new grade crossing both which would have significant land use impacts to the corridor. Further, this option resulted in significant vibration and displacement impacts that neither of the other commuter rail alternatives would induce. Although this alternative would provide direct access to the existing Downtown Riverside Station with the shortest travel time, this alternative would require the agreement and purchase of the RIL alignment from the Union Pacific and the RIL would need to be reconstructed resulting in higher initial capital costs as compared to the other commuter rail alternatives. While the UP RIL connection provides an alternative to highway congestion in the corridor and builds upon underused transportation resources it does not adequately coincide with the other project goals and objectives.

Commuter Rail with Highgrove Turnback Alternative

The Commuter Rail with Highgrove Turnback Alternative proposes an alignment that follows existing track along the SJBL and switches over to the BNSF mainline, as shown on Figure 2.2-3. The existing connection would require trains traveling in either direction to Riverside or Perris to reverse movement at Highgrove to continue to the next station. This alignment would join the BNSF mainline track to continue on to the existing Riverside Downtown Station. FRA requires a safety check prior to a train changing direction. This safety check includes a brake check and a visual inspection by the train engineer, which results in significantly longer travel times. The connection to the BNSF track to reach the existing station in Riverside requires no new construction for track, but included in this alternative would be the construction of six new stations.

The evaluation of this alternative revealed operational issues resulting from a significant delay caused by the turnback movement in Highgrove. The time needed to reverse the train and conduct the required FRA brake tests results in a significantly longer travel time, and would likely reduce ridership levels. Because it does not require additional track, the Commuter Rail with Highgrove Turnback Alternative would not need to acquire any new property to connect the BNSF and SJBL alignments (only acquisition of station sites). As a result of increased idling time required for the commuter train to make its reverse movement, travel time increases and subsequently do does the impacts to air quality. Additionally, the reverse movement will impact traffic congestion in the Highgrove area with the commuter train blocking grade crossings as it sits idle. Although this alternative operates on the existing track and requires no acquisition for the track alignments, this alternative would have significant operational issues and environmental impacts. Therefore, the Commuter Rail with Highgrove Turnback Alternative does not meet the project goals and objectives.

Commuter Rail with New Connection to BNSF at Citrus Street Alternative

The Commuter Rail with New Connection to BNSF at Citrus Street Alternative (Citrus Connection) proposes a new, curved connection track north of Citrus Street between the SJBL and the BNSF ROW, as shown on Figure 2.2-4. The new connection track at Citrus Street would require a property acquisition, with no displacements. The proposed connection track would negate the need for a turnback operation as required in the Highgrove Turnback Alternative. This alignment would utilize the BNSF mainline to access the existing Riverside

Downtown Station. This commuter rail alternative, the Citrus Connection, would include the construction of four stations.

The evaluation of this alternative reveals that it does not have the operational constraints of the Highgrove Turnback Alternative and would avoid the environmental and acquisition impacts of the UP RIL Alternative. This alternative would have higher initial capital costs due to a new track connection at Citrus Street. The utilization of existing transportation resources would be improved due to the use of the existing and available BNSF and SJBL mainlines. The Commuter Rail with New Connection to BNSF at Citrus Street Alternative provides the best opportunity to implement a quality transit alternative within the corridor that serves the goals and objectives of the project, and one that is not impeded by either highway congestion or railroad operational issues.

2.3 COMPARISON OF ALTERNATIVES

A matrix, Table 2.3-1, was developed to compare the alternatives with one another to identify the best performing alternative given the Goals and Objectives of the study as developed in the Purpose and Need statement (outlined in Chapter 1). The comparison of the alternatives was based on consideration of the following evaluation criteria:

Operational Issues – The consideration of operational impacts related to bus and train movements when providing revenue service. The alternative should provide service through the most reasonable and efficient service plan.

Railroad Access – The consideration of railroad access issues related to any constraints on access to the existing Riverside Downtown Station. The alternative should seek to provide the most reasonable and time-effective approach to access the station.

Travel Time – The time needed to travel from Riverside to Perris within a transit vehicle. The alternative should provide an optimum travel time between Riverside to Perris when compared against other alternatives.

Property Needs – The existing and new property needed to implement the alternative including existing railroad ROW. The alternative should minimize to the greatest extent possible the impacts to property along the alignment and station areas.

Capital Costs – The cost to design and construct the alternative to the point where it can enter into revenue operations. The alternative should have a reasonable capital cost that provides a level of quality and service that is comparable with the existing bus (RTA) and rail systems (Metrolink) in the region.

Operating Costs – The cost to operate and maintain the alternative on an annual basis to assure an efficient and reliable service. The alternative should have a reasonable operating and maintenance cost that provides a level of quality and service that is comparable with the existing bus (RTA) and rail systems (Metrolink) in the region.

Ridership – The patronage on each of the alternatives expressed in daily boardings. The alternative should maximize the ability to attract riders to the new service.

Environmental – The environmental issues associated with each alternative that impact the surrounding communities and environment. The alternative should minimize to the greatest extent possible the environmental impacts associated with the implementation of its operations and facilities.

Improve Travel Choices in the Corridor – The ability to increase the options for travel within the corridor by modes other than the automobile.

Maximize Under-utilized Resources – The ability to utilize existing transportation and community resources to improve the connections between Perris and Riverside and also into areas of Los Angeles and Orange Counties. The alternative should seek to maximize the use of existing railroad rights-of-way, roadways, transit facilities and community resources within the corridor.

This Page Intentionally Left Blank

Table 2.3-1
Comparison of Alternatives

Evaluation Criteria	Alternative			
	Express Bus	**Commuter Rail with New Connection to UP RIL**	**Commuter Rail with Highgrove Turnback**	**Commuter Rail with New Connection to BNSF at Citrus Street (Citrus Connection)**
Operational Issue	• Operates on existing highways and roadways such as I-215 • Subject to existing and future automobile congestion	• Eliminates impacts with BNSF mainline operations • Reduces impacts with Metrolink Inland Empire operations • Eliminates turnback movement and brake safety test at Highgrove	• Requires turnback movement at Highgrove causing overall travel time delay • FRA-required brake tests and other safety procedures required when reversing train direction • Potential for delays to access due to BNSF dispatching control	• Reduces impacts with BNSF mainline operations • Reduces impacts with Metrolink Inland Empire operations • Eliminates turnback movement and brake safety test at Highgrove
Railroad Access Issues	• Does not travel on railroad ROW, therefore, no railroad access issues	• Eliminates capacity constraints related to service increases in later years • Requires operating agreement with UP • Freight operations on UP RIL are minimal with one daily switcher • UP has significant interest in selling RIL to RCTC	• Current BNSF/RCTC operating agreement allows 16 one-way train movements with capacity for initial SJBL service only • Service increases in later and horizon years cannot be accommodated without new agreement	• Current BNSF/RCTC operating agreement allows 16 one-way train movements with capacity for initial SJBL service only
Travel Time	• 58 minutes in 2010 from South Perris to Riverside • 98 minutes in 2025 from South Perris to Riverside	• 40 minutes in 2010 from Perris South to Riverside • 40 minutes in 2025 from Perris South to Riverside • Unimpeded by current and future automobile congestion due to use of exclusive ROW	• 49 minutes in 2010 from Perris South to Riverside • 49 minutes in 2025 from Perris South to Riverside • Unimpeded by current and future automobile congestion due to use of exclusive ROW	• 42 minutes in 2010 from South Perris to Riverside • 42 minutes in 2025 from South Perris to Riverside • Unimpeded by current and future automobile congestion due to use of exclusive ROW

Table 2.3-1 (cont'd)
Comparison of Alternatives

Evaluation Criteria	Alternative			
	Express Bus	**Commuter Rail with New Connection to UP RIL**	**Commuter Rail with Highgrove Turnback**	**Commuter Rail with New Connection to BNSF at Citrus Street (Citrus Connection)**
Property Needs	• Uses existing highway and roadways • Property would be needed for park and ride lots with no displacements	• 2 full displacements • 1 partial displacement/ reconfiguration of open parcels • Property would be needed for park and ride lots with no displacements	• 0 full displacements • 0 partial displacement/ reconfiguration • Property would be needed for park and ride lots with no displacements	• 0 full displacements • 1 partial displacement/ reconfiguration • Property would be needed for park and ride lots with no displacements
Capital Costs (2004 $)	$19.3 M	$145.3 M	$128.0 M	$143.6 M
Annual Operating Costs (2004 $)	$4.3 M (opening year) $4.8 M (2025)	$6.1 M (opening year) $8.4 M (2025)	$6.5 M (opening year) $9.1 M (2025)	$6.4 M (opening year) $8.9 M (2025)
Ridership: **For 2010** **For 2025**	 3,316 3,705	 4,151 7,472	 3,817 6,542	 4,151 7,472
Environmental (Preliminary)	• No land acquisitions for bus alignment; acquisition of vacant lands for park and ride lots • Low air quality benefits due to small mode shift • No noise impacts • Minimal mitigation needed	• Acquisitions of occupied business for rail connection; acquisitions of vacant lands for stations • Moderate air quality benefits due to small mode shift • Noise impacts in Perris and Riverside • Moderate mitigation needed	• No land acquisitions for rail acquisitions for rail alignment; acquisition of vacant lands for stations • Moderate air quality benefits due to small mode shift • Noise impacts in Perris and Highgrove • Moderate mitigation needed	• Acquisitions of vacant land for rail connection; acquisition of vacant lands for stations • Moderate air quality benefits due to small mode shift • Noise impacts in Perris • Moderate mitigation needed

Table 2.3-1 (cont'd)
Comparison of Alternatives

Evaluation Criteria	Alternative			
	Express Bus	Commuter Rail with New Connection to UP RIL	Commuter Rail with Highgrove Turnback	Commuter Rail with New Connection to BNSF at Citrus Street (Citrus Connection)
Improve Travel Choices	• Improves travel choices • Congestion has significant effect on future quality of service	• Improves travel choices • Congestion does not affect future quality of service • Quality of service remains stable	• Improves travel choices • Congestion does not affect future quality of service • Turnback movement reduces quality of service	• Improves travel choices • Congestion does not affect future quality of service • Quality of service remains stable
Maximize Under-utilized Resources	• Does not use abundant railroad ROW such as SJBL and UP RIL	• Use of abundant railroad ROW such as SJBL and UP RIL • Does not use heavily traveled BNSF mainline • Unimpeded access to Riverside Station	• Use of abundant railroad ROW such as SJBL • Uses heavily traveled BNSF mainline from Highgrove to Riverside Station	• Use of abundant railroad ROW such as SJBL • Uses heavily traveled BNSF mainline from Highgrove to Riverside Station

This Page Intentionally Left Blank

2.4 SELECTION OF THE LOCALLY PREFERRED ALTERNATIVE

RCTC concluded that commuter rail service would provide the best solution to the specific transportation problems in the study corridor. The Commuter Rail with Highgrove Turnback Alternative was eliminated from consideration in the AA due to the required reverse movement and the FRA safety check, which resulted in it being unable to meet the project's Goals and Objectives. The Commuter Rail with New Connection to UP RIL, originally selected as the LPA in the AA and presented as such in the Draft EA prepared in 2004, was dropped from consideration due to difficulties with acquisition of the UP RIL subsequent to the circulation of the Draft EA. Further, as noted in the 2004 Draft EA, this alternative resulted in significant vibration impacts, and had displacement impacts that neither of the other commuter rail alternatives would induce.

In April 2008, RCTC adopted the Commuter Rail with New Connection to BNSF at Citrus Street Alternative (Citrus Connection) as the LPA. The reasons for adopting this alternative were: minimizing the impacts to the community by reducing business relocation; decreasing the cost of ROW acquisitions; and providing better service to the Highgrove and Hunter Park areas. This alternative provides the best opportunity to implement a quality transit alternative within the corridor that serves the needs and goals of the study, and one that is not impeded by either highway/roadway congestion or railroad operational issues.

The Commuter Rail with New Connection to BNSF at Citrus Street Alternative most closely meets the Purpose and Need, and Goals and Objectives, established for the corridor in the AA, and can accommodate the proposed opening year schedule of 12 one-way trips; therefore, this alternative was selected by the RCTC as the LPA. Environmental impacts for this alternative are similar to those for the other commuter alternatives; however, this alternative would result in no property displacements and would have fewer noise impacts as compared to the other commuter rail alternatives, resulting in fewer environmental impacts.

This Page Intentionally Left Blank

3.0 ENVIRONMENTAL EVALUATION

Chapter 3.0 provides information on the regulatory setting and affected environment; evaluates potential environmental consequences of the proposed PVL project; and recommends mitigation measures, as necessary, for each environmental resource category. The environmental evaluations are based on preliminary design drawings (STV Incorporated, 2009). The intent of the analyses is to identify the types, locations, and magnitudes of potential environmental impacts and present this information to decision-makers, agencies and the public. The environmental evaluations also provide a basis for defining mitigation measures in order to reduce the potential impacts.

The anticipated start of construction in 2011 and opening year of PVL service in 2012 were revised following public circulation of the Draft SEA to 2012 and 2014, respectively. The analyses were reviewed and it was determined the schedule revisions do not result in any substantive changes that warrant revising the analyses; therefore, these analyses remain valid. It should be noted that the revised construction year and opening year are reflected throughout the document as appropriate.

This Page Intentionally Left Blank

3.1 LAND USE AND ZONING

This section of the SEA discusses the potential environmental impacts of the project associated with land use and zoning. Existing land uses within the proposed PVL project area (including properties to be acquired), as well as the areas adjacent to the project area, are characterized in the context of the County of Riverside General Plan, City of Riverside General Plan, March JPA General Plan, City of Perris General Plan, and the associated city and county zoning ordinances, as well as other adopted plans and policies. It should be noted here that the existing rail corridor, as with all rail corridors, is exempt from local land use regulations. The station sites and Layover Facility are subject to local use regulations, which require coordination with the local agencies.

Federal Emergency Management Agency's (FEMA) the National Flood Insurance Program (NFIP) was analyzed because of flood zones located within a portion of the PVL near the San Jacinto River. The Habitat Multiple Species Conservation Plan was also reviewed for consistency. The majority of analysis focuses on land use compatibility, General Plan consistency, and the implications of the project on existing and surrounding land uses. Information for this section was obtained primarily from public documents and public and agency contacts.

3.1.1 Regulatory Setting

Federal Policies and Regulations

Federal Emergency Management Agency

Flood zones are geographical areas that FEMA has defined according to varying levels of flood risk, and are shown on Flood Insurance Rate Maps (FIRM). High risk flood zones, labeled as Special Flood Hazard Areas (SFHAs) on FIRM, are areas subject to inundation by a 100-year flood. NFIP and participating communities require that development within floodplains does not exacerbate flooding in adjacent areas. A floodway and the adjacent land areas must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Therefore, the participating communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. Permit requirements to develop within regulatory floodways are described in detail in Section 3.17 Floodplains.

State Policies and Regulations

There are no state policies and regulations that supersede local policies and regulations for land use, planning, and zoning within the PVL and adjacent parcels of land. However, agencies including California Department of Fish and Game (CDFG) and Santa Ana Regional Water Quality Control Board (SARWQCB) will be a part of the permitting process and approvals for the San Jacinto River bridge replacements.

Local Policies and Regulations

A number of regional and local land use plans pertain to lands surrounding the PVL corridor. Riverside County Planning Department has developed the RCIP, which includes a comprehensive, integrated program balancing the housing, transportation, and economic needs of a large population with the existing environment and available natural resources. As part of the RCIP, the state-mandated Riverside County General Plan provides comprehensive policies and strategies intended to guide long-term development within the County. The General Plan outlines development policies, objectives, and land use designations. It specifies zoning applicable to unincorporated areas of the County and directs the creation and implementation of municipal general plans and specific plans. While RCTC is exempt from local land use policies under state law, aspects of local plans, policies, and zoning ordinances are reviewed in this analysis for informational purposes (Kleinfelder, 2009).

The PVL is identified in RTP and RTIP, and approved by the Metropolitan Planning Organization and SCAG. The RTIP (adopted 2008) is a listing of all funded transportation projects proposed over a six-year period (Fiscal Years 2008/09 – 2013/14) for the SCAG region. The PVL is also included in the 2011 FTIP, which was formerly referred to as RTIP and was adopted in 2010. The FTIP met air quality conformance by FHWA/FTA on December 14, 2010.

Riverside County General Plan 2030/2035

The land use element of the General Plan designates the general distribution and intensity of all uses of the land in the county. This includes residential, commercial, industrial, public facilities, and open space uses. According to Riverside County Transportation Land Management Agency (TLMA) the General Plan provides development standards related to each land use category, and general policy level direction for an array of land use-related issues such as hillside development and community design (TLMA, 2003).

The county of Riverside has written the Draft General Plan Update for the first 5-year General Plan review cycle. The 2008 update assesses the General Plan's progress and issues related to its implementation (Riverside County, 2008).

Highgrove 2020 Area Plan

This area plan generally refers to the community of Highgrove within Riverside County, located west and east of I-215. The areas south of the Highgrove community, including the University City neighborhood and portions of the Box Springs Mountains, are also included in this area plan.

City of Riverside General Plan 2025

The Riverside 2025 General Plan includes twelve elements that are intended to satisfy State law requirements for California as well as the vision of the City into the year 2025. The Project Planning Area consists of the corporate boundaries of the city of Riverside and the City's Sphere of Influence as approved by the Local Area Formation Commission (LAFCO) as part of its 2006 Municipal Service Review. The Land Use and Urban Design Element defines both the built and natural environments and introduces new mixed-use land use models that will allow Riverside to support more intense development near transit nodes (City of Riverside, 2007).

Hunter Business Park Specific Plan

The Hunter Business Park Specific Plan describes a Planned Industrial Park consisting of approximately 1,300 acres of industrial and related uses, northeast of downtown Riverside. It addresses planning goals that are relevant to property owners, future tenants, developers and the city of Riverside, defines the development framework for the Specific Plan area, and establishes the design guidelines, development criteria and implementation measures necessary to implement the Hunter Business Park Specific Plan (City of Riverside, 2002).

Sycamore Canyon Business Park Specific Plan (Formerly Box Springs Industrial Park Specific Plan)

The Sycamore Canyon Business Park Specific Plan was written in conjunction with the City of Riverside's General Plan. The Specific Plan describes a planned industrial park consisting of approximately 920 acres of industrial and commercial uses within a 1,400-acre project area. Approximately 480 acres of the Sycamore Canyon Wilderness Park is located within the Plan area (City of Riverside, 1993). The Specific Plan's southeastern area is located within the PVL corridor.

Sycamore Highlands Specific Plan

Sycamore Highlands is comprised of approximately 420 acres of land located immediately west of State Highway 60 and I-215, near Box Springs. The southerly approximately 350 acres of the Plan Area is part of the Sycamore Canyon Business Park Specific Plan, discussed above. The Sycamore Highlands Plan was written in a manner consistent with the Sycamore Canyon Specific Plan's Goals and Objectives and has been amended over the years to be consistent with the City of Riverside 2025 General Plan (City of Riverside, 2007).

March JPA General Plan

The March JPA General Plan is a comprehensive plan designed to outline and delineate use and development of the area known formerly as March Air Reserve Base (MARB). The land use designations of the March JPA General Plan Land Use Plan are divided into four general classifications, with a total of 13 distinct land use designations. The Plan Area is to comprise approximately 24 million square ft. (551 acres) of commercial, office, and industrial development (March JPA, 2003).

The Moreno Valley/March Field Station option site falls within proximity to the MARB airfield. To minimize high-risk land uses, the Plan Area contains overlay districts including a Clear Zone, APZ I, and APZ II. Together, these form the Airport Influenced Area I. Within Airport Influenced Area I, high-risk land uses are prohibited and are defined as having a high concentration of people, having critical facility (such as a telephone exchange), or having explosive or flammable materials.

Meridian Specific Plan

Within the March JPA jurisdiction, this master-planned employment park contains 1,290-acres located southwest of I-215 and Alessandro Boulevard. Meridian, once known as the March Business Center, is planned as part of the jobs/housing solution within Riverside County with a

15-year build out. The initial development will occur in the northern portion of the development with the final phase planned for the area south of Van Buren Boulevard (March JPA, 2003). Within this specific plan there is a designated rail station. The property for this station site will be donated to RCTC for use as a Metrolink station.

The initial specific plan and related EIR for the development was completed in 2003. Since that time numerous parcels have been developed in the northern portion. With the recent change in the local economic climate a revised specific plan and subsequent EIR was completed (July, 2010). The main change from the original specific plan to the revised plan was the reduction in Business Park and Mixed Use acreage and an increase in Industrial acreage. The increase in Industrial acreage also includes three new rail spurs to accommodate freight service. It is anticipated that these new rail spurs would accommodate approximately twelve trains per week.

Mead Valley 2020 Area Plan

The County of Riverside Mead Valley 2020 Area Plan extends south of the Meridian planning area (e.g., south of MARB) (TLMA, 2003). The Mead Valley Area Plan discusses the land uses and physical development within the unincorporated area west of the city of Perris. Existing land uses consist of the Riverside National Cemetery, a wastewater treatment plant, agricultural, some industrial, and paved public roads Messenia Lane, and Frontage Road. Areas adjacent to and east of the SJBL are designated High Industrial, Community Center, and Business Park.

City of Perris General Plan 2030

The City of Perris General Plan divides the city into ten planning areas as a starting point for the 30-year strategy for organizing and cooperatively accommodating development and land use in the city of Perris. The boundaries of some planning areas mirror natural or manmade physical divisions including the I-215 and the San Jacinto River (City of Perris, 2005). A portion of the PVL corridor is located within the area set forth by the City of Perris General Plan as well as the following Specific Plan Areas.

Perris Downtown Specific Plan

The Perris Downtown Specific Plan Study Area is located within the boundaries of the city of Perris. The Plan covers an area from north to the I-215, east to Redlands Avenue, south to Ellis Avenue, and west to A Street. The purpose of the Specific Plan is to provide a base for the revitalization efforts being carried out by the Perris Redevelopment Agency and the citizens of Perris. The PVL corridor is located within the Perris Downtown Specific Plan Study Area, between D Street and Ellis Avenue.

The Perris Downtown Draft Specific Plan Amendment (Village Walk District) functions as a guide towards the development of the Specific Plan Area in Neighborhood III of the Perris Downtown Specific Plan. The Village Walk District includes the PVL corridor, between Perris Boulevard and Ramona Drive and extends north, near 7th Street (City of Perris, 2007).

Green Valley Specific Plan

The Green Valley Specific Plan outlines a planned community on 1,270 acres south and west of the SJBL. The property consists of open space and agricultural land next to the Perris Valley

Airport and wastewater treatment plant. Planned land uses within the Green Valley community include a mix of residential, open space, community facilities, commercial, business parks, industrial, and transportation land use (City of Perris, 1990).

Riverglen Specific Plan

The Riverglen Specific Plan describes a master planned community on about 330 acres located north of the SJBL. The Riverglen planning area contains open space and agricultural land north of the Green Valley planning area. The planned Riverglen community would contain residential units along with some commercial, schools, and open space land uses (City of Perris, 1992).

Riverside County Flood Control and Water Conservation District

The Riverside County Flood Control and Water Conservation District (RCFCWCD) was created in 1945 to protect people, property, and watersheds from damage or destruction from flood and stormwater. The RCFCWCD is designated by FEMA to administer the NFIP program in the western parts of the County where the PVL project is located. The administrator coordinates, implements, and enforces the local floodplain ordinance by granting or denying development permits in accord with its provisions. Any development or encroachments made to the SFHA must be reviewed by the administrator to determine whether proposed building sites would be reasonably safe from flooding and Base Flood Elevations (BFEs) are not raised which would negatively impact adjacent areas. This may include the submittal of studies, calculations, plans and other information required to meet FEMA requirements.

Resolution Number 2005-220

The County approved Resolution No. 2005-220 (2005), setting forth policies and procedures to control developments within the San Jacinto River floodway and requiring permits or applicable approvals from the RCFCWCD, United States Army Corps of Engineers (USACE), United States Fish and Wildlife Service (USFWS), CDFG, and the SARWQCB.

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County. The MSCHP is a large, multi-jurisdictional habitat-planning effort in with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region (see Section 3.14 Biological Resources for further discussion).

3.1.2 Affected Environment

Existing conditions within the project corridor include established rail lines that were constructed in the 19th century. RCTC acquired the SJBL in 1993, and has an agreement with the BNSF for freight service along the corridor. The SJBL extends from the city of Riverside/Highgrove Area and continues west of and adjacent to Moreno Valley and MARB, through the Mead Valley area, and culminates in the city of Perris. PVL project components are surrounded by a range of land uses including transportation, industrial, residential, commercial, educational, and open space.

Citrus Connection

The proposed Citrus Connection, a new segment of rail that would connect the BNSF to the SJBL, lies within the Riverside city limits southwest of the unincorporated Highgrove area. As such, the Citrus Connection comprises the northernmost element of the PVL. Its boundaries include Villa Street to the north, the SJBL to the east, and the BNSF to the west; its southern boundary lies approximately 1,000 feet south of Villa Street.

The site is comprised entirely of vacant land, and is designated and zoned for Business/Office Park in the City of Riverside 2025 General Plan. The Business/Office Park land use designation is primarily intended for light industrial uses, consistent with the General Plan's goals to create an economic/job center. The site is planned for development as a warehouse/distribution center in the absence of the PVL project.

A metals recycling facility operates directly north of the site. A residential neighborhood lining Transit Avenue lies east of the site beyond the segment of the SJBL, while light industry comprises the blocks west of the site beyond the BNSF. Directly south of the site runs the Springbrook Wash, which is city of Riverside designated Open Space. At this location, the City of Riverside General Plan includes a public recreational trail. A driveway with a culvert crossing Springbrook Wash connects the site to existing warehouses further south.

The unincorporated Highgrove area, which is located just east of Riverside City limits and northeast of the Citrus Connection, encompasses the single-family (SF) residential housing of the Highgrove community and the westernmost portion of Box Springs Mountain Reserve. In the existing condition the Highgrove area is partly developed in conformity with the area plan.

Hunter Park Station

From the proposed Citrus Connection site, the SJBL runs through existing industrial development and scattered residential/agricultural uses south to the location of the proposed Hunter Park Station. The Hunter Park Station is the only new station to be constructed in the city of Riverside, and it is anticipated to serve primarily the city of Riverside and Highgrove area.

Three options are under consideration for the new Hunter Park Station. The Palmyrita option, north of Columbia Avenue, is currently being developed for light industrial use, while the Columbia option, adjacent to and west of the proposed Palmyrita option, currently hosts a citrus orchard. The Marlborough option, just north of and adjacent to Marlborough Avenue, is located on cleared, disturbed land about 1,000 feet south of the Columbia and Palmyrita options.

South of Hunter Park Station, the SJBL alignment extends through urbanized areas and open space. Further south, the SJBL runs adjacent to residential neighborhoods, a church, scattered commercial, Highland Park and Highland School, and the 20-acre Islander Park. To the west of the SJBL is UCR, and to the east lies Box Springs Mountain Reserve, and Islander Park.

South of Islander Park, the SJBL runs along the eastern boundary of the city of Riverside. Single-family residential development lies to the west of the SJBL and also to the east, where homes are constructed on the hillsides between the SJBL and Box Springs Mountain Reserve.

The SJBL runs along the eastern edges of areas being developed as business parks in the city of Riverside. The Sycamore Canyon Business Park, which includes approximately 920 acres of commercial and industrial land uses (south of the junction of I-215 and SR-60), is being developed within the larger Sycamore Canyon area. The Sycamore Highlands Business Park is currently being developed to the south, north of Alessandro Boulevard, within the larger Sycamore Highlands area. In this area, Moreno Valley residential and commercial developments are located to the east of the SJBL.

Moreno Valley/March Field Station

The Moreno Valley/March Field Station (and approximately 400-space parking area) is located within the Meridian Specific Plan area of the MARB, which is a planned industrial business park west of I-215 and south of Alessandro Boulevard. The land use planning and designations were approved for the Meridian Specific Plan. The corresponding EIR was certified with the new land uses evaluated.

The proposed Moreno Valley/March Field Station would be located within the boundaries of the former March Air Force Base, which lies just south of the cities of Riverside and Moreno Valley and comprises land on both sides of the SJBL. The station site would be located on an undeveloped 14.8-acre parcel located east of Meridian Parkway and west of the SJBL, about 750 feet south of Alessandro Boulevard.

The MARB is currently under the jurisdiction of the JPA, which operates under a joint powers agreement between Riverside County and the cities of Riverside, Moreno Valley, and Perris. The MARB airfield is utilized for military and civilian aviation operations, primarily air cargo. Remaining federal property of the MARB (east of I-215) is utilized by the U.S. Air Force Reserve, Army Reserve, Navy Reserve, Marine Corps Reserve, and Air National Guard (MARB, 2009). The March Inland Port is located east of the SJBL at the MARB.

Unincorporated areas of Riverside County comprise the lands adjacent to and west of the SJBL south of the Moreno Valley/March Field Station. These lands are developed with warehouses, light industry, and business park development, similar to development further north. The city of Perris, to the east of the SJBL in this area, is similar to the unincorporated county areas west of the SJBL, with large areas currently undeveloped or being developed for light industry.

Downtown Perris Station

The Nan Sanders Elementary School, undeveloped parcels, residential development and business parks are located within the city of Perris (near the city boundary) and west of the SJBL. The site for the Downtown Perris Station is located further south in the city of Perris; this station would be part of the Perris Multimodal Facility that is currently under construction between South C Street on the west, San Jacinto Street on the north, and 4th Street (SR 74) on the south. The Perris Multimodal Facility includes improvements on San Jacinto and C Streets, and will have local road closures. It is surrounded by commercial and residential uses.

South Perris Station and Layover Facility

The site of the South Perris Station and Layover Facility is also located within the city of Perris. The South Perris Station and Layover Facility would be constructed adjacent to one another on a single site south of the San Jacinto River (which crosses under the SJBL). The site would be north of the intersection of Mapes and Case Roads, and west of the I-215 ROW. The site is largely undeveloped property north of the Eastern Municipal Water District (EMWD) sewage treatment facility. It currently comprises agricultural fields. The lands surrounding this site and this portion of the SJBL are rural in character with active agriculture.

PVL Floodplains

Based on a review of the above identified FIRM panels, the southern portion of the SJBL is within a regulatory floodway with SFHA designation; the proposed South Perris Station and Layover Facility would be within the 100-year floodplain boundary.

3.1.3 Environmental Consequences/Impacts

As detailed in Section 1.0 Proposed Project, the PVL would conform to the RTP and RTIP, both of which identify the PVL as an approved project. The proposed action includes the following:

- Installation of about 2,000 feet of new track at the Citrus Connection.
- Rehabilitating the existing SJBL track (e.g., new or upgraded ties, crossings, grade crossing warning devices, signal system, control cables, housings, and equipment). Existing bridges and selected culverts would be replaced. All rehabilitation work is required to meet commuter rail standards.
- Constructing new facilities (i.e., four new stations and their necessary appurtenances and a Layover Facility).

Land Use Planning and Policy

The PVL project, which would generally follow the existing SJBL alignment, would be compatible with existing and planned land uses and is consistent with county, city and specific plan policies. The implementation of the PVL commuter rail service would not restrict the movement of people or physically divide an established community. The evaluation of potential environmental consequences associated with land use reveals consistency with existing and planned land uses along the PVL alignment, including land to be developed as stations and the Layover Facility. As noted, the proposed project is exempt from local land use controls, and so demonstration of compliance with local land use plans and policies is not required. As outlined below, county and city land use plans anticipate and support the PVL project:

- The Riverside County General Plan promotes alternative transportation options within western Riverside County as a means for encouraging concentrated housing and employment centers, in order to reduce traffic congestion. Rail transit is envisioned as a travel option that can contribute to higher quality living environments by reducing auto dependency, concentrating compatible land uses, and relieving pressure to develop open space, and directing compatible land use activities to established urban centers. The PVL project would be consistent with the alternative transportation goals outlined in this document.

- The City of Riverside General Plan aims to encourage mass transit to reduce roadway congestion, air pollution, and non-point source water pollution. Land use planning was structured to support this principle by directing new growth along transportation corridors. The City of Riverside General Plan includes discussion of the PVL project as the extension of the SCRRA/Metrolink 91 line. The Land Use and Urban Design Element of the General Plan focuses on incorporating “smart growth” principles into planning and development decisions, and focusing development in already urbanized parts of the City rather than spreading growth to the urban fringes.

- The Hunter Business Park Specific Plan states that existing lead tracks and spurs serve established industrial areas, and it is the intent of the Specific Plan to accommodate rail usage where feasible in the designated Land Use Districts. The rail lines have historically supported facilities at the Hunter Business Park, and are maintained within the Specific Plan. The proposed station sites are within the Hunter Business Park, which is 1,300-acre planning area that contains existing industrial/warehouse facilities, scattered agricultural parcels, and a public park (Hunter Park). According to the City of Riverside General Plan, the Hunter Business Park is planned for redevelopment and business/office buildings in order to serve as an employment center, while the Hunter Business Park Specific Plan (City of Riverside, 2002) describes the location of the rail lines within this area as excellent opportunities to serve future industrial-transportation-distribution facilities.

- The City of Moreno Valley General Plan’s Circulation Element states that public transit in the city of Moreno Valley consists primarily of bus service. It anticipated that Moreno Valley would have access to commuter rail service; specifically, a commuter rail station for the southwest quadrant of Alessandro at I-215 to serve Moreno Valley residents (City of Moreno Valley, 2006). The PVL project would also be consistent with the City of Moreno Valley General Plan’s Community Development Element, which encompasses the Land Use Plan of the City of Moreno Valley General Plan. The City of Moreno Valley General Plan places Residential/Office and Commercial land uses within land located nearest to the PVL corridor. The properties are also identified as redevelopment areas, presumably to encourage economic growth.

- The proposed commuter rail service to serve the March Planning Area would be consistent with the March JPA General Plan, and the March JPA would work with transit providers to ensure that transit programming is oriented to the Meridian area, which is outlined as an economic center. The Meridian Specific Plan places a future transit center near the PVL corridor, and similarly, the March Specific Plan places a 15-acre transportation center to accommodate commuter rail service along the PVL corridor. The proposed station would be a permitted use. The March JPA General Plan identifies the PVL project in its Transportation Element, and acknowledges the need for a multimodal facility to serve its planning area. It promotes the creation of adequate regional railway facilities, including the use of SCRRA/Metrolink service along the SJBL.

- The PVL would be consistent with the Mead Valley Area Plan (2003). The Mead Valley Area Plan identifies the SJBL as a viable regional transportation option for residents, employees, and visitors to the area.

- Commuter rail service along the existing SJBL is consistent with the Land Use Element of the City of Perris General Plan, which recognizes the need for future transportation and infrastructure improvements. The specific plans for Green Valley, Riverglen, Perris Downtown and the Village Walk District have incorporated the PVL project by assigning compatible land uses adjacent to the rail corridor, including the future development of commuter rail station planned for the old Perris Depot area. The Downtown Specific Plan describes a pedestrian-friendly Downtown Promenade District of mixed uses, within walking distance of a train station. The Circulation Element specifically identifies the extension of SCRRA/Metrolink service along the PVL corridor. The use of the existing railway would be consistent with existing and planned land uses, and the implementation of commuter rail service through downtown Perris would be consistent with specific plan policies to enhance and preserve natural and man-made features, and to promote alternative transportation to reduce regional traffic congestion.

<u>Habitat Conservation/Natural Community Conservation</u>

Two habitat conservation, or natural community conservation, plans apply to the PVL project, and include the MSHCP (2003) and the Stephens' Kangaroo Rat (SKR) HCP (1996) (see Section 3.14 Biological Resources for further discussion).

The purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of key reserves for the protection of covered species. Although the SKR HCP was established in 1996 prior to the MSHCP, relevant terms of the SKR HCP were incorporated into the MSHCP to ensure the greatest conservation for the largest number of covered species.

Because the MSHCP was developed in conjunction with the Riverside County General Plan and the Community and Environmental Transportation Acceptability Process (CETAP), the cores, habitat blocks, and linkages that have been set aside for assembly as conservation areas were developed in consideration of existing and future land uses, in particular, the region's transportation requirements. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban/Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with Western Riverside County Regional Conservation Authority (RCA) and Riverside County Habitat Conservation Authority (RCHCA), implementation of the PVL along the existing SJBL alignment would not conflict with any of the conservation or habitat goals established by the Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan (HCP) or the MSHCP, impair the value of wildlife habitat, or cause an ecological intrusion into the existing and proposed conservation areas.

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a means for consolidating and preserving core areas with suitable vegetation and soils to support species, while at the same time preventing fragmented habitat. The MSHCP covers 146 plant and wildlife species, and is administered by the RCA. One of the primary objectives of the MSCHP is to assemble a total of 500,000 acres for management as the MSHCP Conservation Area. The MSHCP identifies a number of existing and proposed features – including cores, habitat blocks, and linkages – which form the basis of the plan's

Conservation Area (refer to Section 3.2.3 of the MSHCP). Section 3.14 Biological Resources under the Environmental Setting summarizes the MSHCP Conservation Area features that are located within one-half mile of the PVL project corridor (see Table 3.14-2).

Stephens' Kangaroo Rat Habitat Conservation Plan

The SKR HCP is administered by the RCHCA, and encompasses approximately 533,954 acres, which include open space, developed, and agricultural land uses. The SKR HCP established seven permanent core area reserves for SKR (see Section 3.14 Biological Resources). Located west of I-215 and the PVL and on both sides of Alessandro Boulevard, the Sycamore Canyon-March Air Force Base Core Reserve covers a total of 2,502 acres across the two core reserve components.

Moreno Valley/March Field Station

Two noncontiguous wildlife reserves are in the vicinity of the proposed Moreno Valley/March Field Station. The SKR Sycamore Canyon – March Air Force Base Core Reserve (which coincides with Sycamore Canyon Park and the MSHCP Existing Core D) is located north and south of Alessandro Boulevard and west of the PVL corridor outside of the corridor and west of the Moreno Valley/March Field Station.

The purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of protected reserves for covered species. These planning efforts have been coordinated with municipal and transportation entities, and in consideration of existing and future land uses. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban/Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA and RCHCA, construction and operation of the proposed Moreno Valley/March Field Station option would not impair the value of wildlife habitat or cause an ecological intrusion into the nearby reserve areas.

South Perris Station and Layover Facility

MSHCP Proposed Constrained Linkage 19 encompasses the San Jacinto River area, which is located approximately 500 feet west of the proposed South Perris Station. As previously described, the PVL project is subject to the compliance requirements of the MSHCP, in particular its Urban/Wildlands Interface Guidelines, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA, construction and operation of the proposed South Perris Station would not impair the value of wildlife habitat or cause an ecological intrusion of MSHCP Proposed Constrained Linkage 19.

3.1.4 Mitigation Measures

Implementation of the PVL project would not result in any impacts with regard to land use and planning. Therefore, no mitigation is required.

This Page Intentionally Left Blank

3.2 AGRICULTURAL RESOURCES

Agricultural resources are farmlands that can be used for agricultural purposes. This section presents a discussion of the federal laws governing agricultural resources, describes the types and locations of farmlands within the PVL corridor, analyzes the potential impacts resulting from implementation of the PVL project, and, if appropriate, provides mitigation measures to reduce, avoid, or minimize potential impacts.

3.2.1 Regulatory Setting

Federal Policies and Regulations

Farmland Protection Policy Act

Congress passed the Farmland Protection Policy Act (FPPA) in 1981 in response to a substantial decrease in the amount of open farmland (7 USC 4201). The purpose of the FPPA is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, local government, and private programs and policies to protect farmland per the United States Code (USC) (7 USC 4201(b)). Under FPPA, the PVL would be defined as a corridor project. Federal agencies are to assess the suitability of each corridor site and design alternative for protection as farmland along with the land evaluation information.

Under the FPPA, "farmland" is classified as:

- Prime Farmland: land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage (7 USC 4201(c)(1)(A)).

- Unique Farmland: land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary of Agriculture. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables (7 USC 4201(c)(1)(B)).

- Farmland of Statewide or Local Importance: farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate state or local government agency or agencies, and that the Secretary of Agriculture determines should be considered as farmland (7 USC 4201(c)(1)(C)).

Under the FPPA, the Secretary of Agriculture is required to establish criteria for federal agencies to identify and take into account the adverse effects of their activities on the preservation of farmland (7 USC 658.5). The criteria developed by the Secretary of Agriculture, in cooperation with other federal agencies, include two parts:

(1) Land evaluation criterion, for which the Natural Resources Conservation Service (NRCS) will provide the rating or score (0-100 points), is based on national cooperative soil surveys or other acceptable soil surveys, NRCS field office technical guides, soil potential ratings or soil productivity ratings, land capability classifications, and important farmland determinations, and

(2) Site assessment criteria, for which each federal agency must develop its own ratings or scores to consider the suitability of each proposed site or design alternative for protection as farmland (total points vary).

The process for complying with the FPPA involves the completion of a Farmland Conversion Impact Rating Form. For corridor projects like the PVL, NRCS has developed Conservation Program Application (CPA), NRCS-CPA-106 Form. The federal agency completes a portion of the form and submits it, along with appropriate maps, to the local NRCS office for review. NRCS reviews the form and maps, and makes a determination as to whether the project contains Prime, Unique, or Farmland of Statewide or Local Importance. NRCS completes the land evaluation portion of the form, assigns a score between 0 and 100 points, and returns the form to the federal agency. The federal agency evaluates the project against each of the site assessment criteria described above, assigns a site assessment score, and calculates the total score by adding the land evaluation and site assessment scores. Based on the total score and a review of its internal policies, the federal agency makes a determination whether the conversion of farmland resulting from the proposed project is consistent with the FPPA.

The site assessment criteria, and their respective point ranges, include:

1. Area of land in non-urban use within a one-mile radius surrounding the project corridor (0 15 points);
2. Perimeter of the corridor in non-urban use (0-10 points);
3. Percent of corridor being farmed (0-20 points);
4. Protection provided by state and local government policies or programs (0-20 points);
5. Size of present farm unit compared to average (0-10 points);
6. Creation of non-farmable farmland (0-25 points);
7. Availability of farm support services (for example, farm suppliers, equipment dealers, and processing and storage facilities) (0-5 points);
8. Availability of on-farm investments (for example, barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, or waterways) (0-20 points);
9. Effects of conversion on farm support services (0-25 points); and
10. Compatibility with existing agricultural use (0-10 points).

State Policies and Regulations

California Land Conservation Act - Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, provides incentives through reduced property taxes, to deter the early conversion of agricultural and open space lands (California Department of Conservation [CDC], 1965).

Lands defined by the state as "prime farmland," "other than prime farmland," and "open space land" are eligible for coverage by a Williamson Act contract. Land other than prime farmland and open space land can also be placed under contract if the lands are located in an area designated by the county or city as an agricultural preserve.

3.2.2 Affected Environment

The proposed PVL project is specifically located within the existing SJBL alignment that runs from the city of Riverside to south of the city of Perris. As the area developed, the predominance of agricultural land both in the cities and surrounding areas, was used primarily to grow citrus. This citrus industry was serviced by the existing railroads to ship goods to distant markets. As the local area continued to develop, a growing population in the late twentieth century created pressure to convert this agricultural land to urban/suburban uses. Today, most of the areas in Riverside have transitioned from agricultural to urban and built-up land.

At the northernmost portion of the PVL corridor, the BNSF and SJBL alignments, Citrus Connection, and the Hunter Park Station options are located within the Hunter Business Park area, a 1,300-acre industrial park in the City's northeast corner. Industrial and business facilities currently occupy much of the area (City of Riverside, 2002).

Southeast of Hunter Park Station area, the SJBL alignment extends through urbanized areas and open space and runs adjacent to residential neighborhoods, commercial buildings, and city parks. Continuing south, the SJBL runs along the eastern edge of the Sycamore Canyon Business Park, which includes approximately 920 acres of commercial and industrial land uses (south of the junction of I-215 and SR-60).

The SJBL transitions into unincorporated land within Riverside County and passes through an area of recent warehouse and distribution center development. Further south along the alignment, the SJBL alignment bisects downtown Perris. South of downtown Perris, land use around the SJBL alignment is primarily agricultural with scattered development. Development includes the Perris Airport and the wastewater treatment complex across the street from the end of the corridor.

Each PVL component with respect to farmland designations is discussed below and depicted on Figure 3.2-1 and Figure 3.2-2.

Citrus Connection

The parcels to be acquired for the construction of the Citrus Connection, which amount to a total of 16.47 acres, are designated as Farmland of Local Importance.

SJBL Alignment

Between the proposed Citrus Connection and the proposed Layover Facility, the existing SJBL ROW encompasses 350.10 acres of built up land already committed to transportation uses.

Hunter Park Station

The proposed Hunter Park Station ~~will~~ location was selected after consideration of three potential sites ~~be located on one of three parcels located~~ along Palmyrita, Columbia, ~~or~~ and Marlborough Avenues. The 9.35 acre Marlborough Avenue site was eventually selected. ~~The Palmyrita Avenue Station option comprises 24.08 acres, and is designated as Prime Farmland. The Columbia Avenue Station option is also designated Prime Farmland, and consists of 9.34 acres. The Marlborough Avenue Station option encompasses 9.35 acres, and~~ The Hunter Park Station contains both Prime Farmland and Farmland of Local Importance.

Moreno Valley/March Field Station

The proposed Moreno Valley/March Field Station consists of 14.50 acres of Farmland of Local Importance.

Downtown Perris Station

The proposed Downtown Perris Station encompasses 12.44 acres of urban and built up land.

South Perris Station and Layover Facility

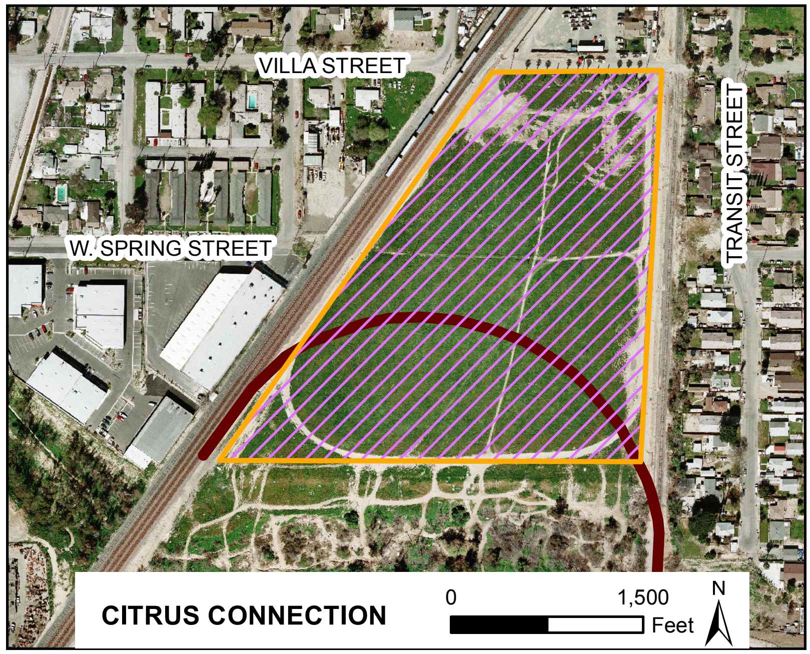
The proposed South Perris Station and Layover Facility include 40.00 acres designated as Farmland of Local Importance.

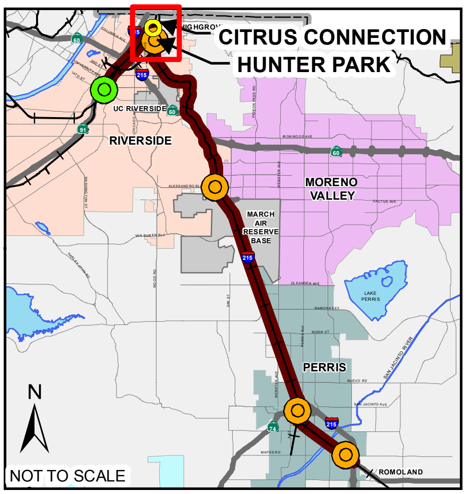
3.2.3 Environmental Consequences/Impacts

SJBL Alignment

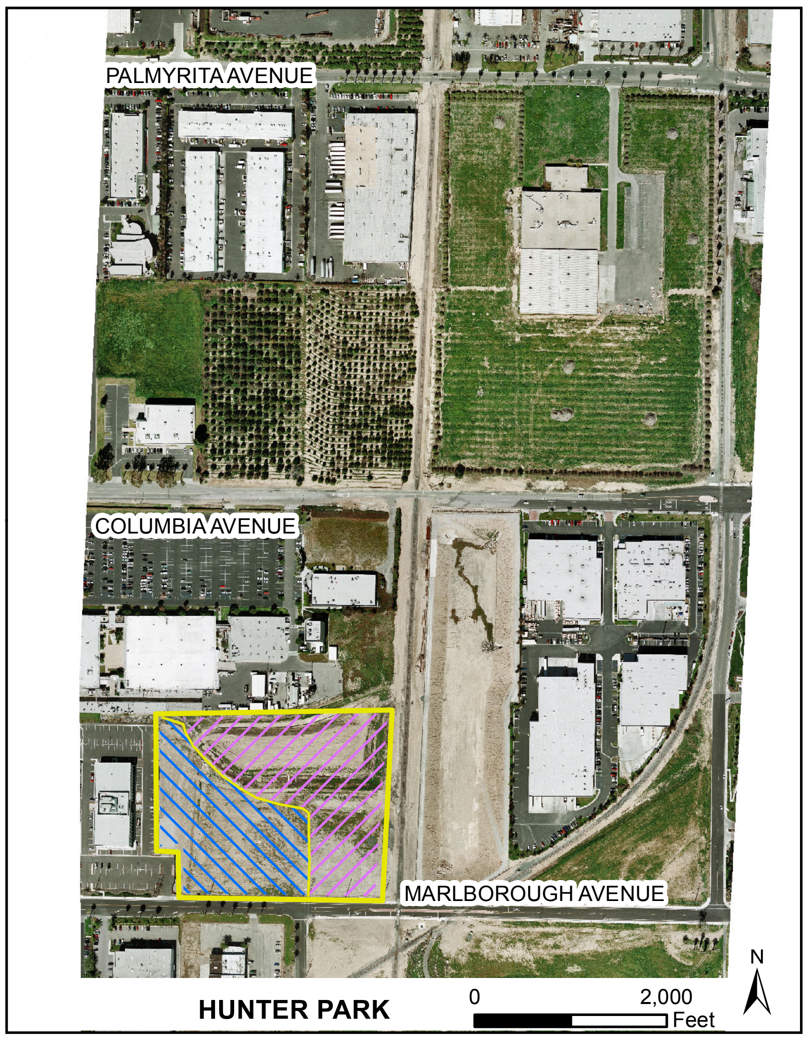
Citrus Connection

The proposed Citrus Connection is located at the northernmost segment of the PVL, which connects the BNSF and SJBL alignments. Though this land was designated as Farmland of Local Importance, the area is now approved for a warehouse/distribution center (City of Riverside, 2007). Since development of this area will occur regardless of the construction of the proposed Citrus Connection, construction of this segment of the PVL project would not alter the planned land use of the area.





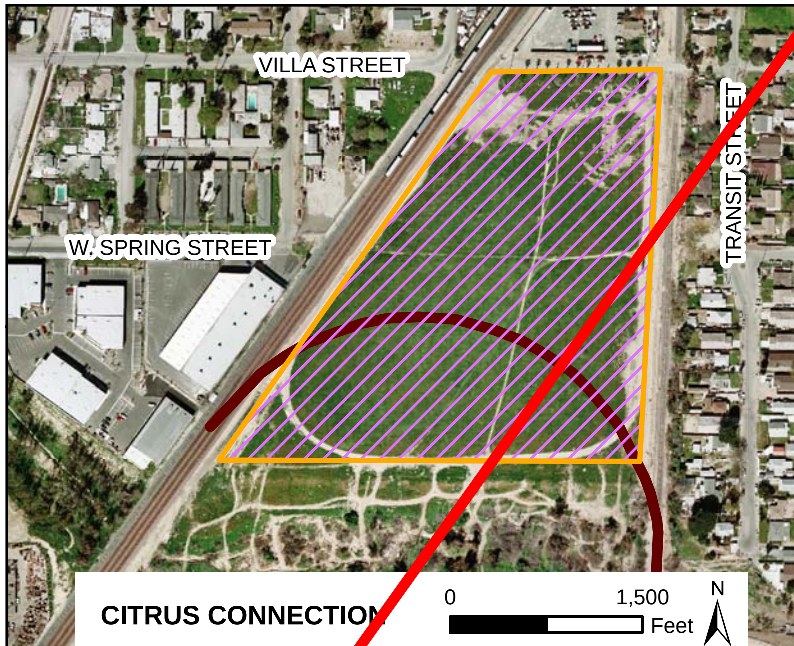
KEY MAP FOR INSET AREAS

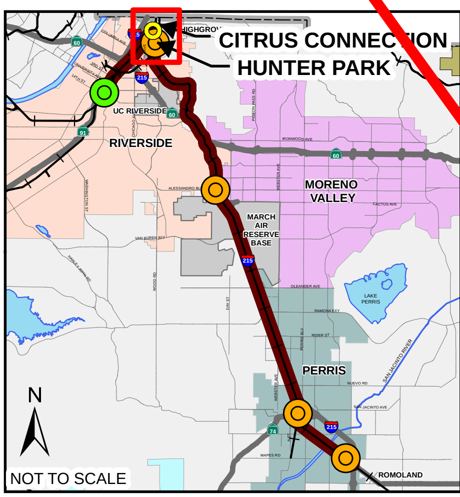


LEGEND

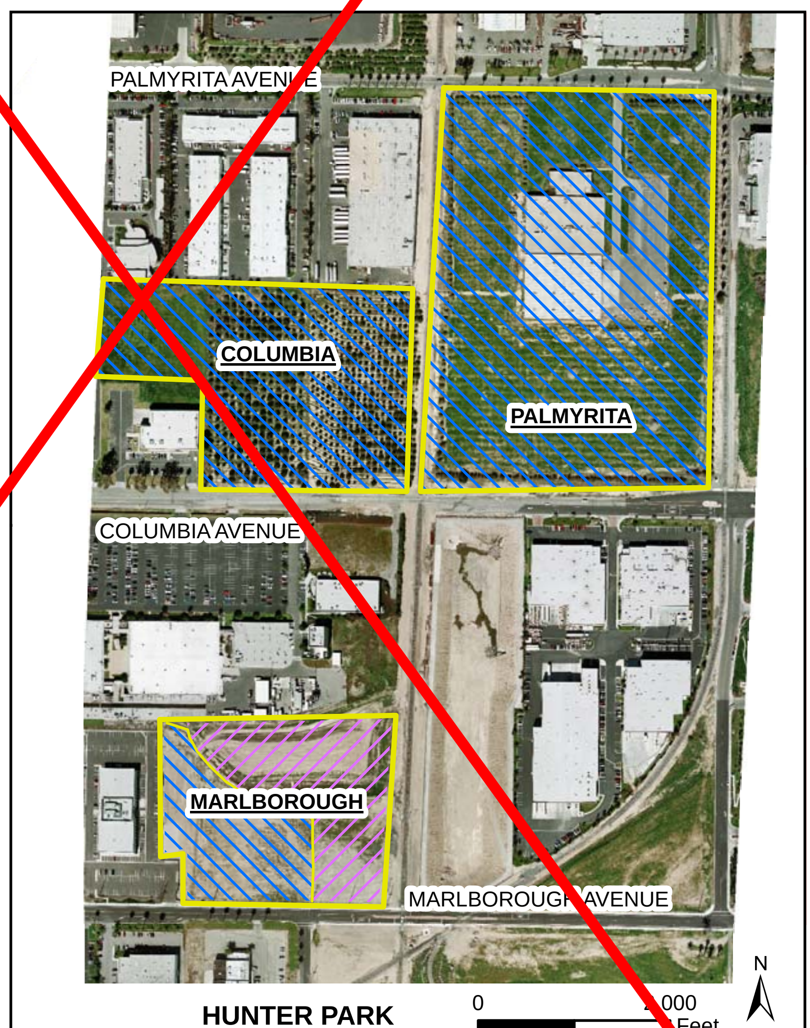
- PVL ALIGNMENT
- SITE BOUNDARY
- CITRUS CONNECTION BOUNDARY
- PRIME FARMLAND
- FARMLAND OF LOCAL IMPORTANCE

PROJECT NO.	92666	**AGRICULTURAL RESOURCES**	FIGURE
DRAWN:	12/19/11		**3.2-1**
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666agresEA.MXD			





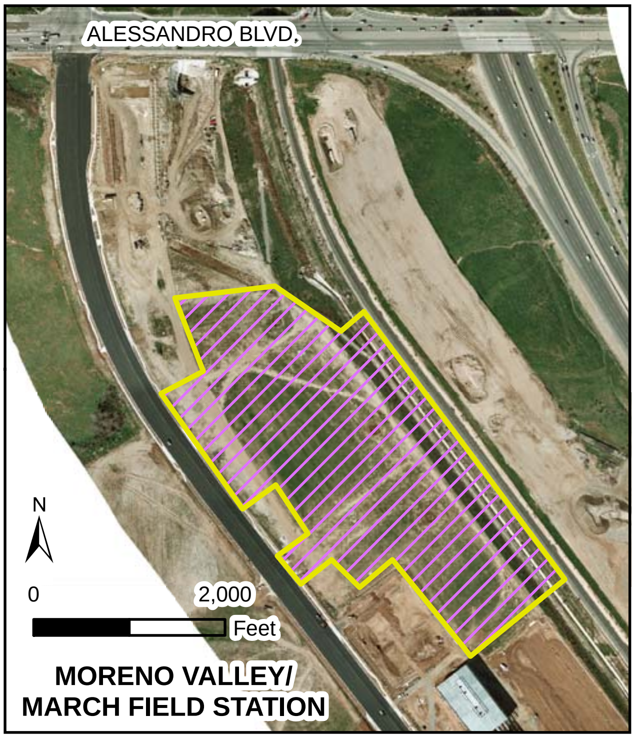
KEY MAP FOR INSET AREAS

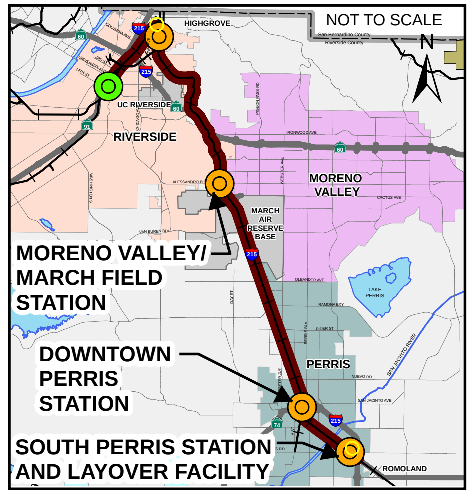


LEGEND

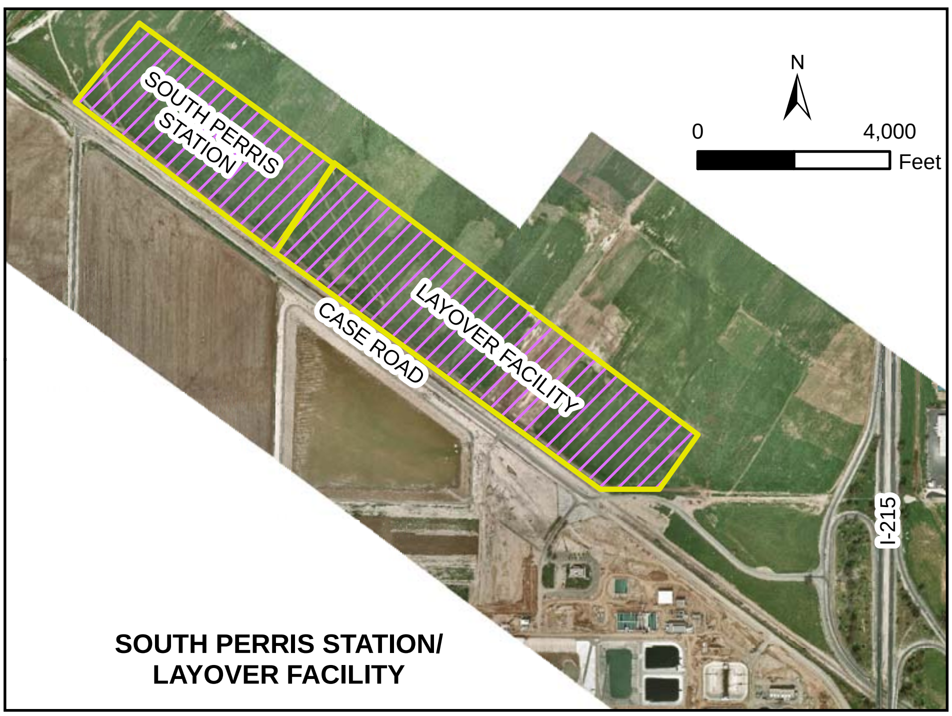
- PVL ALIGNMENT
- SITE BOUNDARY
- CITRUS CONNECTION BOUNDARY
- PRIME FARMLAND
- FARMLAND OF LOCAL IMPORTANCE

PROJECT NO.	92666	AGRICULTURAL RESOURCES	FIGURE
DRAWN:	1/4/10		3.2-1
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666agresEA.MXD			





KEY MAP FOR INSET AREAS



LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- FARMLAND OF LOCAL IMPORTANCE

PROJECT NO.	92666	AGRICULTURAL RESOURCES	FIGURE
DRAWN:	4/16/10		3.2-2
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666agres2.MXD			

Stations

Hunter Park Station ~~options~~

The proposed Hunter Park Station location was selected after consideration of three potential sites along Palmyrita, Columbia, and Marlborough Avenues. The 9.35 acre Marlborough Avenue site was eventually selected. ~~One of the three options for the proposed Hunter Park Station would be constructed within the Hunter Business Park area. Palmyrita Station option is proposed north of Columbia Avenue and east of the SJBL ROW. This location is currently being developed for light industrial use. The Columbia Station option would be located south of Palmyrita Avenue and west of the SJBL ROW. The site currently contains a citrus orchard.~~ The selected Hunter Park Station ~~Marlborough Station option would~~ is~~be~~ located north of, and adjacent to Marlborough Avenue, and west of the SJBL ROW. The site is currently undeveloped~~ with quantities of fill dirt located on the site~~.

All three station site options are on ~~Though this~~ land that was previously designated as Prime Farmland and Farmland of Local Importance; however, all of the sites are now, ~~, the three options are located in an area that has been~~ approved for Business/Office Park development and ~~is now~~are designated for light industrial uses, consistent with the General Plan's goals to create an economic/job center (City of Riverside, 2007).

Since the land designation for this area has changed to non-agricultural development, none of the three options ~~for the proposed Hunter Park Station~~ would ~~not~~ convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

Moreno Valley/March Field Station

The proposed Moreno Valley/March Field Station would be located within the boundaries of the former MARB and on an undeveloped 14.50-acre parcel west of the SJBL, about 750 feet south of Alessandro Boulevard. Unincorporated areas of Riverside County that are south of the Moreno Valley/March Field Station option are comprised of warehouses, light industry, and business park development.

The March Field/Moreno Valley Station has already been approved for development as part of the Meridian Business Park Plan, which determined that the site for the proposed station is no longer designated as farmland (March JPA, 2003). Therefore, the proposed PVL project at this location would not convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

South Perris Station and the Layover Facility

The site of the South Perris Station and Layover Facility would be constructed adjacent to one another north of the intersection of Mapes and Case Roads, and west of I-215. The site is an undeveloped property east of the Perris Airport and north of the EMWD sewage treatment facility. The surrounding area consists of agricultural fields and warehouses.

Though this land was designated as Farmland of Local Importance, it is located in an area that is now approved for Public and Community Commercial Land Use designations (City of Perris, 2005). Additionally, the City has approved the Riverglen and Green Valley Specific Plans.

These developments would convert the now vacant land to commercial, retail and residential uses (City of Perris, 2005). Therefore, since the land designation for this area has changed to non-agricultural development, the South Perris Station and Layover Facility would not convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

As described in Section 3.2.1 Regulatory Setting, the Secretary of Agriculture developed criteria for federal agencies to comply with the FPPA and take into account the effects of their projects on farmland. Compliance with the FPPA is accomplished through the completion of NRCS Form CPA-106 for corridor projects. The completed form, along with a summary of how each scoring decision was derived, is provided in Appendix B.

To comply with FPPA (Form CPA-106), three PVL corridor evaluations are conducted (Options A, B and C), considering the entire corridor, with each one addressing a different Hunter Park Station option. Each alternative includes the same components: the existing SJBL ROW, the proposed Citrus Connection, the four proposed stations, and the Layover Facility.

As described in Section 3.2.1 Regulatory Setting, NRCS completed the land evaluation portion of Form CPA-106 and assigned a score of 60.1 to Option A, 60.1 to Option B, and 60.1 to Option C, out of a possible 100 points. The land evaluation score represents the relative value for agricultural production of the farmland to be converted by the project. The ten site assessment criteria for corridor projects were considered in the context of the PVL project (for a total of 160 possible points). The results of both evaluations are summarized below in Table 3.2-1.

Table 3.2-1
Summary of Farmland Conversion Impact Rating Scores

	Land Evaluation Score	Site Assessment Score	Total Score
Corridor A (Palmyrita Avenue)	60.1	25	85.1
Corridor B (Columbia Avenue)	60.1	27	87.1
Corridor C (Marlborough Avenue)	60.1	25	85.1

According to 7 USC Section 658.4(c)(2), sites receiving a total score of less than 160 need not be given further consideration for protection and no additional alternatives need to be evaluated. Because all three options have combined scores of less than 160 points, no impact to agricultural resources would occur as a result of the PVL project, or as a result of any of the three options selected for the Hunter Park Station.

Williamson Act

There are no components of the PVL project, including the Citrus Connection, the proposed station locations, and the Layover Facility, that are located on lands enrolled in Williamson Act contracts. Therefore, there are no impacts within this issue area.

3.2.4 Mitigation Measures

Based on the evaluation of farmland conversion impacts using NRCS Form CPA-106, the proposed PVL project will not have a significant impact on agricultural resources. No mitigation measures are required.

This Page Intentionally Left Blank

3.3 AIR QUALITY

This section describes the air quality of the Riverside/Perris area and the potential effect that implementation of the PVL may have on the air quality within the South Coast Air Basin (SCAB). Air quality impacts related to construction, operation of the project, and traffic associated with riders driving to and from stations for the PVL project are analyzed in this section. This analysis is based on the *Perris Valley Line Commuter Rail Air Quality Technical Report* (STV Incorporated, ~~2010~~2011) to this SEA as presented in Technical Report B.

3.3.1 Regulatory Setting

The California Air Resources Board (CARB) has divided the state into regions called air basins that share similar meteorological and topographical features. The project area is located in western Riverside County (west of the San Gorgonio Pass), which is within the SCAB. The SCAB is a 6,745-square-mile area comprised of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The air basin's climate and topography are highly conducive to the formation and transport of air pollution. Peak ozone (O_3) concentrations in the last two decades have occurred at the base of the mountains around Azusa and Glendora in Los Angeles County, and at Crestline in the mountain area above the city of San Bernardino. Both peak O_3 concentrations and the number of exceedances have decreased within the SCAB throughout the 1990s. In addition, carbon monoxide (CO) concentrations have lessened throughout the air basin during the past decade as a result of strict new emission controls and reformulated gasoline sold in winter months. In response to a scientific consensus linking greenhouse gas emissions from human activities to global climate change, CARB is seeking to consider the cumulative effects of carbon dioxide (CO_2) released by new projects within the SCAB.

The South Coast Air Quality Management District (SCAQMD) is responsible for monitoring air quality conditions in the SCAB. Regionally, the SCAQMD and the SCAG prepare the Air Quality Management Plan (AQMP), which contains measures to meet state and federal requirements. When approved by the CARB and the United States Environmental Protection Agency (USEPA), the AQMP becomes part of the State Implementation Plan (SIP).

<u>Federal Standards</u>

The federal Clean Air Act (CAA), enacted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA directs USEPA to establish ambient air standards for six pollutants: ozone (O_3), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter ($PM_{2.5}$ and PM_{10}), and sulfur oxides (SO_x). The standards are divided into primary and secondary standards; the former are set to protect human health with an adequate margin of safety, and the latter to protect environmental values, such as plant and animal life.

The CAA requires states to submit a SIP for areas designated as nonattainment for federal air quality standards. The SIP, which is reviewed and approved by USEPA, must demonstrate how the federal standards would be achieved. Failure to submit a plan or secure approval could lead to denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, the USEPA is directed to prepare a federal implementation plan.

State Standards

Responsibility for achieving California's Ambient Air Quality Standards (CAAQS), which are more stringent than federal standards, is placed on the CARB and local air pollution control districts. State standards are to be achieved through district-level air quality management plans that are incorporated into the SIP. The California CAA requires local and regional air pollution control districts that are not attaining one or more of the CAAQS to expeditiously adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual five percent reduction in district-wide emissions of each nonattainment pollutant or its precursors.

Recently enacted amendments to the California CAA impose additional requirements that are designed to ensure an improvement in air quality within the next five years. More specifically, local districts with moderate air pollution that did not achieve "transitional nonattainment" status by December 31, 1997 must implement the more stringent measures applicable to districts with serious air pollution.

Transportation Conformity

The concept of transportation conformity was introduced in the 1977 amendments to the CAA, which includes a provision to ensure that transportation investments conform to the SIP in meeting the National Ambient Air Quality Standards (NAAQS). Conformity requirements were made substantially more rigorous in the federal CAA amendments of 1990, and the transportation conformity regulation that details implementation of the conformity requirements was first issued in November 1993, with a number of subsequent amendments. The most recent complete set of amendments to the Transportation Conformity Rule is found at 40 Code of Federal Regulations (CFR) parts 51 and 93 (August 15, 1997). Additionally, on July 1, 2004, USEPA published a set of the Transportation Conformity Rule Amendments, amending the August 1997 regulations, in Federal Register (FR) Volume 69 No. 26. The new amendments provide regulations for the new 8-hour O_3 and $PM_{2.5}$ NAAQS. More recently, a March 2006 ruling establishes revised criteria for determining which transportation projects must be analyzed for local particle emissions impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas.

Based on projects included in the RTP, transportation-related air quality analyses are conducted to determine whether the implementation of those projects would conform to SIP emission budgets or other tests showing that attainment requirements of the CAA are met. If the conformity analysis is successful, the regional planning organization and the appropriate federal agencies make a determination that the RTP is in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of a proposed project is the same as described in the RTP, then that project is deemed to meet regional conformity requirements for purposes of project-level analysis. The General Conformity Rule may also require localized (hot spot) analyses if an area is nonattainment or maintenance for carbon monoxide and/or particulate matter.

Regional Transportation Improvement Program

The SCAG, as the Metropolitan Planning Organization (MPO) for southern California, is mandated to comply with federal and state transportation and air quality regulations. SCAG is a six-county region (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) that contains four air basins that are administered by five air districts.

All potential emissions from projects included in a RTIP meet the transportation conformity requirements outlined in that RTIP. This means that all of the emissions from projects included in the RTIP have been accounted for in the regional emissions burden. The proposed PVL project is included in SCAG's 2008 RTIP (Project ID RIV520109), as shown in Appendix A of Air Quality Technical Report B, which means the project's operational emissions (including the O_3 precursor emissions reactive organic compounds [ROC] and NO_2) meet the transportation conformity requirements imposed by USEPA and SCAQMD. As such, a project under these circumstances would normally undergo a project-level rather than a regional-level air quality analysis. However, a regional assessment was also conservatively performed for the proposed PVL project. It should be noted that SCAG determined that the PVL is not a Project of Air Quality Concern (POAQC) on April 16, 2010. (http://www.scag.ca.gov/tcwg/projectlist/march10.htm). A copy of the TCWG review form is included in Air Quality Technical Report B, Appendix F.

It should be noted that the project is in the 2011 FTIP, which was found to meet air quality conformance by FHWA/FTA on December 14, 2010.

Local and Regional Requirements

The air quality management agencies of direct importance to the SCAQMD portion of Riverside County include USEPA, CARB, and the SCAQMD. USEPA has established federal ambient air quality standards for which CARB and the SCAQMD have primary implementation responsibility. CARB and the SCAQMD are also responsible for ensuring that state ambient air quality standards are met. SCAG develops the RTP and RTIP in consultation with local air management districts. The RTP includes projects that strive to meet the goals and objectives of the NAAQS. The RTP is also in accord with USEPA's Transportation Conformity Rule as it pertains to air quality standards in Riverside County.

Federal and State Ambient Air Quality Standards

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the State of California and the federal government have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 3.3-1 shows the 2009 state and federal standards for relevant air pollutants.

Table 3.3-1
Ambient Air Quality Standards 2009

Pollutant	Averaging Time	State[1] Concentration[3]	National[2] Primary[3,4]	National[2] Secondary[3,5]
Ozone (O_3)	1 hour	0.09 ppm	--	Same as Primary Standard
	8 hours	0.070 ppm	0.075 ppm	
Particulate Matter (PM_{10})	24 hours	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	AAM	20 µg/m^3	--	
Fine Particulate Matter ($PM_{2.5}$)	24 hours	--	35 µg/m^3	Same as Primary Standard
	AAM	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	8 hours	9.0 ppm	9 ppm	None
	1 hour	20 ppm	35 ppm	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	0.053 ppm	Same as Primary Standard
	1 hour	0.18 ppm	--	
Lead (Pb)[6]	30 days	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	1.5 µg/m^3
Sulfur Dioxide (SO_2)	AAM	--	0.030 ppm	--
	24 hours	0.04 ppm	0.14 ppm	--
	3 hours	--	--	0.5 ppm
	1 hour	0.25 ppm	--	--
Visibility-Reducing Particles	8 hours	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.	N/A	N/A
Sulfates (SO_4)	24 hours	25 µg/m^3	N/A	N/A
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	N/A	N/A

Notes:
N/A = standard is not applicable
ppm = parts per million by volume
AAM = annual arithmetic mean
µg/m^3 = micrograms per cubic meter

Notes:
1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. USEPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: Ambient Air Quality Standards, California Air Resources Board, February 22, 2009

South Coast Air Quality Management District CEQA Guidelines

SCAQMD has published guidance on conducting air quality analyses under CEQA by establishing thresholds of significance for regional impacts, which are summarized in Table 3.3-2. Thresholds are shown for criteria pollutant emissions during construction activities and project operation. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed these thresholds.

Table 3.3-2
SCAQMD Air Quality Significance Thresholds

Pollutant	Construction	Operation
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Source: SCAQMD CEQA Handbook (SCAQMD, 1993)		

Mobile Source Air Toxic Regulation

The CAA identified 188 pollutants as being air toxics, which are also known as hazardous air pollutants (HAP). From this list, the USEPA identified a group of 21 as mobile source air toxics (MSAT) in its final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17235) in March 2001. From this list of 21 MSATs, the USEPA has identified six MSATs, benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene, as being priority MSATs. To address emissions of MSATs, the USEPA has issued a number of regulations that would dramatically decrease MSATs through cleaner fuels and cleaner engines.

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

Air toxics analysis is a new and emerging issue and is a continuing area of research. Although much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques available for assessing project-specific health impacts from MSATs continue to be developed. Shown in Table 3.3-3 are the SCAQMD thresholds for the assessment of Toxic Air Contaminants (TACs). The Federal Highway Administration (FHWA) is currently preparing guidance as to how mobile source health risks should factor into project-level decision making. In addition, USEPA has not established regulatory concentration targets for the six relevant MSAT pollutants appropriate for use in the project development process.

Table 3.3-3
Toxic Air Contaminant (TAC) Threshold

TAC	Threshold
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)
Source: SCAQMD CEQA Handbook (SCAQMD, 1993)	

Greenhouse Gas Regulations

While climate change has been an international concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to deal with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions.

On June 1, 2005, Governor Schwarzenegger signed Executive Order (EO) S-3-05. The goal of this EO is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) to 1990 levels by 2020 and 3) 80 percent below 1990 levels by 2050. The majority of GHG emissions are from the burning of fossil fuels, and 40 percent of all human-made GHG emissions are the result of transportation. Enhancing operations and improving travel times in high congestion travel corridors, such as I-215, would lead to an overall reduction in GHG emissions.

Description of Relevant Air Pollutants

Criteria Pollutants

Ozone (O_3) is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. O_3, which is a regional pollutant, is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. O_3 precursors, which include reactive organic compounds (ROC) and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone primarily forms in summer when it becomes an air pollution problem. In addition, photochemical reactions take time to occur, so high ozone levels often occur downwind of the emission source. The SCAB is classified as Nonattainment Severe-17 (Severe-17 = has 17 years from 1992 to reach attainment). Unless the SCAB is granted an extension by the USEPA, the region had until 2009 to demonstrate conformity with the NAAQS. CARB sent a letter with recommendations for areas of attainment of the ozone standard in March of 2009 and is awaiting response from the USEPA.

Inhalable Particulate Matter (such as $PM_{2.5}$ and PM_{10}) can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulate matter less than ten micrometers in diameter can enter the lungs and bloodstream. Exposure to these particles can cause a number of health problems such as decreased lung function, development of chronic bronchitis, and irregular heartbeat. Particulates also reduce visibility and corrode materials. Particulate emissions are generated by a wide variety of sources, including industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

Carbon Monoxide (CO) is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death. Motor vehicle emissions are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when a period of light winds combines with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Nitrogen Oxides (NO_x) are a family of highly reactive gases that are primary precursors to the formation of ground-level ozone, reacting in the atmosphere to form acid rain. NO_x is emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. Health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to nitrogen dioxide (NO_2) may lead to eye and mucus membrane aggravation along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

Sulfur Oxides (SO_x) are a family of colorless, pungent gases, which include sulfur dioxide (SO_2), and are formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), metal smelting, and other industrial processes. Sulfur oxides can react to form sulfates, which significantly reduce visibility. SO_x are a precursor to particulate matter formation, for which the project area is in non-attainment.

The major health concerns associated with exposure to high concentrations of SO_x include effects related to breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_x include individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), as well as children and the elderly. Emissions of SO_x also can damage the foliage of trees and agricultural crops. Together, SO_x, and NO_x are the major precursors to acid rain, which is associated with the acidification of lakes and streams and accelerated corrosion of buildings and monuments.

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used several decades ago to increase the octane rating in automotive fuel. Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of lead can be harmful, especially to infants, young children, and pregnant women. Symptoms of long-term exposure to lower lead levels may be less noticeable but are still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

Lead exposure is most serious for young children because they absorb lead more easily than adults and are more susceptible to its harmful effects. Even low-level exposure may harm the intellectual development, behavior, size, and hearing of infants. During pregnancy, especially in the last trimester, lead can cross the placenta and affect the fetus. Female workers exposed to high levels of lead have more miscarriages and stillbirths.

Toxic Air Contaminants

Although ambient air quality standards exist for criteria pollutants, no ambient standards exist for TACs. These contaminants are sometimes also referred to as mobile source air toxins or MSATs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk each presents. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk. The carcinogenic nature of the six TACs identified by the USEPA is briefly described below:

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation.

- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.

- Diesel exhaust or diesel particulate matter is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancerous hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Greenhouse Gases

Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases" (GHGs). These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is re-radiated back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap its heat in the atmosphere. It is widely accepted that the accumulation of GHGs has contributed to an increase in the temperature of the earth's atmosphere and has contributed to global climate change. Many gases exhibit these greenhouse properties. Many occur naturally. Some are also produced by human activities and some are exclusively human made (for example, industrial gases). The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H_2O).

Carbon Dioxide (CO_2) results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, CO_2 accounted for approximately 84 percent of total GHG emissions in the state. In the SCAB, approximately 48 percent of CO_2 emissions come from transportation, residential and utility sources, which contribute approximately 13 percent each; 20 percent come from industry; and the remainder comes from a variety of other sources.

Atmospheric methane (CH_4) is emitted from both non-biogenic and biogenic sources. Non-biogenic sources include fossil fuel mining and burning, biomass burning, waste treatment, geologic sources, and leaks in natural gas pipelines. Biogenic sources include wetlands, rice, agriculture, livestock, landfills, forest, oceans, and termites. CH_4 sources can also be divided into anthropogenic and natural. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions. In the SCAB, more than 50 percent of human-induced CH_4 emissions come from natural gas pipelines, while landfills contribute 24 percent. CH_4 emissions from landfills are reduced by SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills. CH_4 emissions from petroleum sources are reduced by a number of rules in SCAQMD Regulation XI that control fugitive emissions from petroleum production, refining, and distribution.

Other regulated GHGs include Nitrous Oxide, Sulfur Hexafluoride, Hydrofluorocarbons, and Perfluorocarbons. These gases all possess heat-trapping potentials hundreds to thousands of times more effective than CO_2. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to CO_2 or CH_4 is relatively small. SF_6, HFC, and PFC emissions occur at even lower rates.

Chlorofluorocarbons (CFCs) are emitted from blowing agents used in producing foam insulation. They are also used in air conditioners and refrigerators and as solvents to clean electronic microcircuits. CFCs are primary contributors to stratospheric ozone depletion and to global climate change. Sixty-three percent of CFC emissions in the SCAB come from the industrial sector. Some CFCs are classified as TACs and regulated by SCAQMD Rule 1401 – New Source Review of TACs and SCAQMD Rule 1402 Control of TACs from Existing Sources.

Carbon dioxide equivalents are often used as a metric measure to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). Carbon dioxide equivalents are commonly expressed as "million metric tons of carbon dioxide equivalents." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP.

3.3.2 Affected Environment

<u>Regional Climate and Meteorological Conditions</u>

In large part, the strength and position of the subtropical high pressure cell over the Pacific Ocean, as with all of southern California, control the climate in and around the project area. The high pressure maintains moderate temperatures and comfortable humidities, and limits precipitation to a few storms during the winter “wet” season. Temperatures are normally mild, except in the summer months which commonly bring substantially higher temperatures. In all portions of the SCAB, temperatures well above 100 ºF have been recorded in recent years. The annual average temperature in the SCAB is approximately 62 ºF.

Although Riverside County generates the lowest emissions of any county in the SCAB, air quality in the county is among the Air Basin’s worst, due to onshore winds transporting vast amounts of pollutants from Los Angeles and Orange counties inland. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction, traveling towards the sea. Local canyons alter wind direction, with wind tending to flow parallel to the canyons. During the transition period from onshore to offshore pattern, the dominant wind direction rotates into the south and causes a minor southerly wind direction. The frequency of calm winds (less than two miles per hour) is less than ten percent. Therefore, little stagnation occurs in the project vicinity, especially during busy daytime traffic hours.

Southern California frequently has temperature inversions that inhibit the dispersion of pollutants. Inversions may be either ground-based or elevated. Ground-based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. The mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the SCAB and is responsible for the high levels of O_3 observed during summer months in the air basin.

Local Climate and Meteorological Conditions

Latitude, topography, and the influence of the nearby Pacific Ocean produce a Mediterranean climate in the project area, consisting of warm, dry summers and mild, wet winters. However, at a local level, the project area exhibits substantial climatic variation. Average January high temperatures range from 66 ºF in the northwestern project area near Riverside to 63 ºF near Perris in the southeastern project area. Nighttime lows in January and February can drop below freezing throughout the project area. Average July high temperatures range from 94 ºF in the northwestern project area near Riverside to 97 ºF near Perris in the southeastern project area. Low altitude areas (i.e. closer to sea level), however, have long mid-summer stretches of daily highs exceeding 110 ºF. Average annual precipitation ranges from about ten inches in the Riverside and Moreno Valley areas to eleven inches in Perris Valley. Annual rainfall in the project area typically ranges from ten to fifteen inches per year. Annual average wind speed in Riverside is six mph.

Local Air Quality

The SCAQMD monitors air quality conditions at 37 source receptor areas throughout the SCAB. The project area extends from the city of Riverside to the city of Perris. The closest air basin monitoring stations for this area are located in Rubidoux on Mission Boulevard, in Riverside on Magnolia Avenue, and in Perris on North D Street. The Rubidoux monitoring station measures ambient levels of O_3, particulates, CO, nitrogen dioxide, and sulfur dioxide. The Riverside monitoring station measures $PM_{2.5}$ and CO ambient levels. The Perris monitoring station measures O_3 and PM_{10} ambient levels. Data from the three monitoring stations, including two located in receptor areas along the study corridor at Riverside and Perris, were used to characterize existing conditions in the vicinity of the proposed project, and establish a baseline for estimating future conditions both with and without the proposed project.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant exceeds a state or federal standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. The CARB has designated the SCAB as nonattainment for O_3, $PM_{2.5}$ and PM_{10}; and the USEPA has designated the SCAB as nonattainment for O_3 (Severe-17 classification for the 8-hour standard); CO (Serious classification), PM_{10} (Serious classification) and $PM_{2.5}$ (refer to Table 3.3-4).

Table 3.3-5 summarizes the local levels of these four pollutants for 2006, 2007 and 2008 and compares them to national and state air quality standards. The Rubidoux monitoring station shows exceedances of the federal and state standards for O_3, PM_{10} and $PM_{2.5}$. At the Riverside monitoring station, the federal standard for $PM_{2.5}$ was exceeded. The Perris Valley monitoring station has exceeded the state standard for PM_{10}, and the federal and state standards for O_3.

Riverside County emissions inventories are presented in Table 3.3-6. These data are collected by CARB for the South Coast Air Basin.

Table 3.3-4
Regional Criteria Pollutants Attainment Status 2009

Pollutant	Status	
	Federal	State
O_3	1-hour: N/A 8-hour: Severe-17 Nonattainment	1-hour: Nonattainment Not yet rated for 8-hour standard
CO	Attainment	Attainment
NO_2	Attainment/Maintenance	Attainment
SO_2	Attainment	Attainment
Particulates (PM_{10})	Serious Nonattainment	Nonattainment
Fine Particulates ($PM_{2.5}$)	Nonattainment	Nonattainment
Pb	No Designation	Attainment
Source: Federal Register and CARB (2009)		

Table 3.3-5
2006-2008 Air Quality Summary for Project Area Monitoring System

Air-Pollutant	Standard Exceedance	Rubidoux			Riverside			Perris Valley		
		2006	2007	2008	2006	2007	2008	2006	2007	2008
Ozone (O_3)	Maximum 1-hr. concentration (ppm)	**0.151**	**0.131**	**0.146**	Not Monitored			**0.169**	**0.138**	**0.142**
	Maximum 8-hr. concentration (ppm)	**0.117**	**0.111**	**0.116**				**0.123**	**0.117**	**0.115**
	Days >0.09 ppm (state 1-hr. standard)	45	31	54				77	66	65
	Days >0.12 ppm (federal 1-hr. standard)[1]	8	2	8				12	4	4
	Days > 0.075 ppm (federal 8-hr. standard)	57	46	64				83	73	77
	Days > 0.070 ppm (state 8-hr standard)	75	69	89				98	88	94
Respirable Particulate Matter (PM_{10})	Maximum state 24-hr concentration (µg/m^3)	**106**	**540**	**70**	Not Monitored			**119**	**1155**	**87**
	Maximum federal 24-hr concentration(µg/m^3)	**109**	**559**	**82**				**125**	**1212**	**85**
	Days >50 µg/m^3 (state 24-hr. standard)	69	65	7				18	25	8
	Days >150 µg/m^3 (federal 24-hr. standard)	0	1	0				0	2	0
	Calculated >20 µg/m^3 (state annual standard)	52.7	57.0	44.8				N/A	N/A	N/A
	Calculated 3-year average ≤ 20 µg/m^3 (state annual standard)	53	57	57				37	37	N/A
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-hr. concentration (ug/m^3)	**68.4**	**75.6**	**53.3**	**55.3**	**68.5**	**42.9**	Not Monitored		
	Days >65 µg/m^3 (federal 24-hr. primary std.)[1]	32	33	7	9	8	2			
	Calculated >15 µg/m^3 (federal annual std.)	20.7	19.6	18.1	18.6	17.7	N/A			
	Calculated 3-year average ≤ 15 µg/m^3 (federal annual standard)	19	19	16.4	16.9	18.3	N/A			
Carbon Monoxide (CO)	Maximum 8-hr. concentration (ppm)	2.29	2.93	1.86	2.38	2.16	1.93	Not Monitored		
	Day > 9 ppm (state/federal 8-hr. standard)	0	0	0	0	0	0			
Nitrogen Dioxide (NO_2)	Maximum 1-hr. concentration (ppm)	0.076	0.072	0.092	Not Monitored			Not Monitored		
	Days >0.25 ppm (state 1-hr. standard)[2]	0	0	0						
	Calculated >0.0534 ppm (federal annual std)	0.020	0.020	0.019						
Sulfur Dioxide (SO_2)	Maximum 24-hr. concentration (ppm)	0.003	0.004	0.003	Not Monitored			Not Monitored		
	Days >0.04 ppm (state 24-hr. standard)	0	0	0						
	Days >0.14 ppm (federal 24-hr. standard)	0	0	0						
	>0.03 ppm (federal annual primary standard)	0.003	0.001	0.002						

Notes:
N/A = data not available ppm = parts per million µg/m^3 = micrograms per cubic meter **bold = exceedance of state or federal standard**
Source: SCAQMD Air Quality Data 2006-2008 California Air Quality Data Summaries 2006-2008, CARB (2009)
1. National 1-hour ozone standard revoked in all areas as of April 15, 2009
2. California measures its 24-hour PM_{10} standard using different methods than USEPA therefore 2 different concentrations are reported

This Page Intentionally Left Blank

Table 3.3-6
2008 Emission Inventory for Riverside County - South Coast Air Basin (Tons per Day)

Stationary Sources	TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$
Fuel Combustion	2.2	0.3	1.8	3.5	0.4	0.2	0.2	0.2
Waste Disposal	3.4	1.2	0	0.1	0	0.4	0.2	0
Cleaning And Surface Coatings	4.3	3.8	0	0	0	0.2	0.2	0.1
Petroleum Production And Marketing	2.4	2.3	-	-	0	-	-	-
Industrial Processes	2.5	2.3	0	0.1	0	4.5	2.6	1
*** Total Stationary Sources**	**14.8**	**10**	**1.9**	**3.7**	**0.4**	**5.2**	**3.1**	**1.4**
Areawide Sources	**TOG**	**ROG**	**CO**	**NO_X**	**SO_X**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Solvent Evaporation	14.4	12.6	-	-	-	0	0	0
Miscellaneous Processes	40.7	4	10.8	2.2	0.1	77.8	38.6	7.2
*** Total Areawide Sources**	**55.1**	**16.7**	**10.8**	**2.2**	**0.1**	**77.8**	**38.6**	**7.2**
Mobile Sources	**TOG**	**ROG**	**CO**	**NO_X**	**SO_X**	**PM**	**PM_{10}**	**$PM_{2.5}$**
On-Road Motor Vehicles	25.9	23.4	264.5	57.4	0.3	3.2	3.2	2.3
Other Mobile Sources	14.4	13.3	70.2	22.7	0.1	1.5	1.5	1.3
*** Total Mobile Sources**	**40.3**	**36.7**	**334.6**	**80.1**	**0.3**	**4.8**	**4.7**	**3.7**
Natural (Non-Anthropogenic) Sources	**TOG**	**ROG**	**CO**	**NO_X**	**SO_X**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Natural Sources	27.8	24.1	37.7	1.1	0.3	4	3.8	3.2
*** Total Natural (Non-Anthropogenic) Sources**	**27.8**	**24.1**	**37.7**	**1.1**	**0.3**	**4**	**3.8**	**3.2**
Total Riverside County In South Coast Air Basin	**138**	**87.4**	**385**	**87.2**	**1.2**	**91.8**	**50.3**	**15.4**

3.3.3 Environmental Consequences/Impacts

The fundamental approach to evaluating project-related air quality is to determine documented air quality conditions for the study area and assess the anticipated air quality impacts associated with the proposed project. The evaluation approach assesses t~~T~~he net increases and decreases in operational and construction air emissions ~~are compared to~~between the No Project Alternative and the proposed PVL project ~~for the opening year of 2012~~. The No Project Alternative includes air quality impacts of proposed I-215 highway improvements, as defined in the *Final Environmental Impact Statement: I-215 Improvements* (California Department of Transportation, 2001). ~~However, in the case of the regional assessments, because required No Project Alternative and PVL project data are not available at this time, the evaluation approach involved only assessing the net increases and/or decreases in operational and construction air pollutant emissions.~~

The air quality analysis was prepared to conform to FTA, CARB, SCAQMD, and SCAG criteria. Investigation methods, modeling protocols, and conformity issues relating to air quality were developed, discussed, and reviewed with the responsible agencies as needed.

The methodology used to evaluate the operational and construction effects of the PVL is described below.

Construction-Period Impacts Methodology

Construction is a source of fugitive dust and exhaust emissions that can have substantial temporary impacts on local air quality causing exceedance of CAAQS for PM_{10} and/or $PM_{2.5}$. Dust emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, and cut-and-fill operations. Dust emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. However, as most standard dust prevention measures would significantly reduce the level of soil-related dust, ~~As the proposed PVL project would not involve extensive soils work,~~ a major portion of the dust emissions ~~for~~from the proposed project would be caused by construction-related vehicle traffic ~~on temporary construction roadways~~. Construction emissions from vehicular exhaust would result from the movement and operation of vehicles related to construction activities. Emissions would be generated by both off-site and on-site activities. Off-site emission producing ~~actives~~activities include construction work crews traveling to and from the work site. They also include on-road emissions from delivery trucks and dump trucks in addition to locomotive emissions from freight deliveries. On-site emission producing ~~actives~~activities include the operation of off-road construction machinery and vehicles. Pollutants of interest with respect to construction exhaust emissions include CO, NO_x, ROC, SO_2, PM_{10}, $PM_{2.5}$ and the GHG CO_2.

In order to assess construction emissions, daily average emissions were calculated for all construction activities. These emissions were then compared to the SCAQMD daily construction emission pollutant thresholds shown above in Table 3.3-6. This reasonable worst-case construction day included installation of culverts, all road crossings and crossing improvements, embankment work, all track work, turnout work, stations (including parking areas where applicable) and the Layover Facility, Mapes Road construction, bridge replacement (including demolition and removal of existing bridges), noise barriers, landscape walls, and installation of signals and communication. For each activity, the duration of the activity, the number and types of construction equipment, and equipment horsepower were used as inputs to define daily emissions. Fuel type was assumed to be diesel, to assure a conservative analysis of particulate matter. The assessment assumed that low vehicle speeds and fugitive dust suppression measures (application of dust palliatives, covering of dust piles, etc.) would be strictly enforced within the construction zones. As a result, fugitive dust emissions of particulate matter were assumed negligible. Other key assumptions include:

- As the detailed PVL project construction schedule is not available at this point in the project ~~(30% engineering drawings)~~, estimates of construction machinery/equipment and construction duration, work crew trip estimates and delivery estimates using best professional judgments from a senior railroad professional engineer are provided in Appendix D of Air Quality Technical Report B. Estimates are provided for each individual construction task.

- On-site emissions come from USEPA NONROAD2008 construction model emissions tables.

- The "Embankment Construction" is the only task with extensive soils work. Therefore, a fugitive dust analysis was conducted using the 2007 URBEMIS Construction Emissions Model (see Appendix D of Air Quality Technical Report B).

- Some construction sites would require the export of soils. The amount of soils that would be removed is based on the "90% Mass Haul Diagram Exhibit" provided in Air Quality Technical Report B, Appendix D.

- ~~No construction site would require the import/export of soil material.~~

- Although the overall construction ~~would be approximately~~duration is estimated at 18 months, emissions estimates conservatively assume a peak construction year period for ~~all~~ most construction activities. Emissions estimates for soils exports are based on the first 12 months of construction when the majority of soils would be removed.

- All construction activities are conservatively assumed to occur simultaneously.

- The use of a "Diesel Oxidation Catalyst" and "Aqueous Diesel Fuel" will be required for all non-road construction vehicles and equipment. This would reduce NO_x emission by 15%.

- No idling of off road machinery or trucks would be allowed, which would reduce emission of exhaust particulate matter.

This approach also assumes that process emissions (which include on-site soil movement as well as fugitive dust emissions) will be negligible (with the exception of Embankment Work) due to inclusion of dust control measures such as:

- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission. Haul vehicles transporting soil into or out of the worksite shall be covered.

- Water shall be applied to disturbed areas a minimum of two times per day or more as necessary.

- On-site vehicles limited to a speed of less than five mph.

- All visibly dry disturbed soil surface areas of operation shall be watered to minimize dust emission.

- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s). Adequately secured tarps, plastic or other material shall be employed to further reduce dust emissions.

- SCAQMD Rule 1113 requires all facilities to use CARB-certified low-VOC paints during construction of commercial and industrial facilities. In accordance with that requirement, the project will include special conditions in its design-build specifications to require the following:

  - To the extent practicable, use required coatings and solvents with a VOC content lower than required under SCAQMD Rule 2113.

  - To the extent practicable, use non-VOC paints and architectural coatings.

- All paints shall be applied either by hand application or by using high-volume low-pressure spray equipment.

~~Other project control measures would include:~~

- ~~The use of a "Diesel Oxidation Catalyst" and "Aqueous Diesel Fuel" will be required for all non-road construction vehicles and equipment. This would reduce NO_x emission by 15%.~~

- ~~No idling of off-road machinery or trucks. Reduces exhaust PM.~~

Additions to the PVL project construction plans and documents shall be made for all control measures.

Analysis background material spreadsheet calculations, in addition to the URBEMIS model run, are included in Air Quality Technical Report B. Although not included in the SCAQMD construction threshold limits, emissions of the GHG CO_2 were calculated for the construction period to help give quantifiable estimate of the overall carbon footprint of the PVL project.

Operational-Period Impact Methodology

The operational air quality assessment associated with the proposed project includes the study of criteria pollutants, ozone precursors, MSATs and greenhouse gases. The emission of these pollutants can result in potential impacts on a local and/or regional level. Impacts from CO, particulate matter and MSATs can occur on a local and regional level while ozone precursors (ROC and NO_x) and greenhouse gases are primarily regional pollutants. These pollutants are primarily emitted via motor vehicle exhaust. Certain pollutants, MSATs (such as diesel particulate matter and acrolein) and SO_x are also emitted from the operation of diesel locomotives.

Regional Impact Analysis

The proposed project area is within the SCAB which is in nonattainment for ozone, $PM_{2.5}$ and PM_{10}. While a hot-spot analysis is not required for particulate matter, the region's nonattainment status prohibits the PVL from significantly contributing to particulate pollutant levels. The proposed project is also prohibited from significantly contributing to ozone pollutant levels.

Existing and future vehicle miles traveled (VMT) projections for the proposed project were not separately calculated for the PVL. However, projected PVL ridership data was available to make engineering judgments about project related VMT reductions as shown in Appendix E of Air Quality Technical Report B. Therefore, the regional assessment involved estimating the net project-related emissions of CO, NO_x, ROC, SO_x, PM_{10} and $PM_{2.5}$ from motor vehicles. Emissions estimates were calculated within the project area for the 2012 project build year. Emissions estimates were based on project-related VMT traveling at average speeds within the PVL project traffic network. An approximation of reduced VMT (as shown in Appendix E of Air Quality Technical Report B) was calculated based on the assumption that the proposed PVL service would replace single passenger vehicles driving from South Perris to Riverside to connect to SCRRA/Metrolink service. It is also considered that the South Perris to Los Angeles service is in addition to and not replacing any existing service. Therefore the emissions for the time of the entire trip to LA must be accounted for. The resulting diversion from private car use to PVL ridership is estimated to reduce VMT by approximately 34 million miles per year in the project area. This estimate includes vehicle miles traveled from private homes to the proposed stations. An average motor vehicle travel speed of 30 mph was assumed. Emission factors were determined by using the CARB emission factor model EMFAC2007 v2.3.

Regional emissions of CO, NO_x, ROC, SO_2, PM_{10} and $PM_{2.5}$ from PVL diesel locomotives scheduled to operate within the project area in the year 2012 were calculated based on a technical guidance from the USEPA. This USEPA technical memo provides diesel locomotive emission factors and methods to calculate daily project emissions, based on estimated daily usage for the locomotives.

Greenhouse Gas Emissions

GHGs are considered to contribute to global warming by absorbing infrared radiation and trapping heat in the atmosphere. Because this is a global effect, it is difficult to ascertain the effects from an individual project. While there are many types of greenhouse gases, the most prevalent contributors to the greenhouse effect in the Earth's atmosphere are water vapor, carbon dioxide (CO_2) (53 percent), methane (CH_4) (17 percent), near-surface ozone (O_3) (13 percent), nitrous oxide (N_2O) (12 percent), and chlorofluorocarbons (CFCs) (5 percent). Carbon dioxide is the greenhouse gas most closely linked to passenger car and light truck emissions and recent studies have shown that carbon dioxide (CO_2) accounted for approximately 84 percent of total GHG emissions in the state of California. Worldwide, the State of California ranks between the 12th to 16th largest emitter of CO_2 (the most prevalent GHG) and is responsible for approximately two percent of the world's CO_2 emissions (CEC, 2006). Since CO_2 is the most abundant greenhouse gas in the project area, it is assumed that a reduction in CO_2 will indicate a reduction in the less prominent greenhouse gases.

According to a recent paper by the Association of Environmental Professionals (Hendrix and Wilson, 2007), an individual project does not generate enough GHGs to significantly influence global climate change; rather, global climate change is a cumulative effect. However, for this project, some baseline quantification of the opportunity to switch from private vehicle to the PVL was prepared to demonstrate the regional benefits that would accrue with the PVL. The CO_2 emissions from the operation of the diesel locomotives is estimated based on national usage data for commuter rail and compared to the reduction in CO_2 emissions expected from the diverted ridership to the PVL.

As mentioned above for the regional pollutant assessment, projections of VMT were not separately prepared for this analysis, and assumptions regarding the operation of the proposed project were made, as detailed above. The same procedure described above for the regional impact analysis was used for the assessment of GHGs.

Local Impact Analysis

Carbon Monoxide Modeling Protocol—Screening Procedure

The California Department of Transportation, in coordination with the University of California, Davis, Institute of Transportation Studies, has developed the *Transportation Project-Level Carbon Monoxide Protocol* (California Department of Transportation, Garza et al., 1997). This CO Protocol details a qualitative step-by-step screening procedure to determine whether project-related CO concentrations have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for CO. If the screening procedure reveals that such a potential may exist, then the CO Protocol details a quantitative method to ascertain project-related CO impacts. FTA has no separate guidance for assessing CO impacts. Based on this protocol, a potential for air quality impacts was determined to exist and further analysis was required.

Carbon Monoxide Modeling Protocol—Intersection Analysis

Within an urban setting, vehicle exhaust is the primary source of CO emissions. Consequently, the highest CO concentrations are generally found within close proximity to congested intersection locations (LOS D or worse). Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For purposes of providing a conservative, worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations, because if impacts are less than significant in close proximity of the congested intersections, impacts would also be less than significant at more distant sensitive receptor locations.

The SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when volumes-to-capacity ratios are increased by two percent at intersections with a Level-of-Service (LOS) of ~~C~~D or worse. Based on these criteria, four intersections were selected for analysis based on information provided in the *Perris Valley Line Commuter Rail Traffic Technical Report* (STV Incorporated, ~~2010~~2011) to this SEA as presented in Technical Report D. The selected locations were at the proposed Downtown Perris Station site, where a large amount of parking is expected to be located and, thus, a significant number of vehicle trips would be expected to be generated. The traffic analyses did not include grade crossing locations since the project would operate with twelve trains per day and only one train daily during the peak traffic hours.

Moreover, it was determined that the delay to vehicular traffic due to peak hour crossing closings would not be any more disruptive to traffic operations than a single red phase of a typical traffic signal (30-40 seconds), which would not be considered significant.

Local area CO concentrations were projected using the CAL3QHC line-source dispersion model. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation, as detailed in their publication *Transportation Project-Level Carbon Monoxide Protocol* (California Department of Transportation, Garza et al., 1997). It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

Carbon Monoxide - Parking Lot Analysis

In addition to congested intersection locations, proposed parking lot locations were also evaluated for CO hot spots. There would be four stations with parking lots. Lot size would range from approximately 440 spaces (Downtown Perris Station) to 880 spaces (South Perris Station). For purposes of providing a conservative, worst-case impact analysis, CO concentrations were evaluated for the largest parking lot (880 spaces), because if impacts are less than significant at the largest parking lot location, impacts would also be less than significant at each of the smaller parking lot locations. Although the parking lot with the largest amount of vehicles was analyzed (South Perris), the screening distance of the lot closest to sensitive receptors (Downtown Perris) was used to model the pollutant concentration.

The parking lot CO hot spot analysis considered emissions from all three vehicular emissions categories: engine start, idle time, and vehicle miles of travel. Emissions factors were ascertained using EMFAC2007 emissions model. Dispersion modeling was conducted using the USEPA SCREEN3 model, using EMFAC2007-generated emissions factors. EMFAC2007 emissions factors and detailed emissions calculation worksheets are provided in Appendix B of Air Quality Technical Report B.

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the types of population groups exposed and the activities involved. According to CARB, air pollution has an adverse effect on four primary groups of people: (1) children under 14 years of age, (2) the elderly over 65 years of age, (3) athletes, and (4) people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For the proposed PVL project, the sensitive receptors closest to the alignment are:

- Highland Elementary School - located approximately ~~46 meters~~65 feet (~~150 feet~~20 meters) east of the alignment near the intersection of Watkins Drive and Blaine Street near the campus of UC-Riverside
- Highland Park - located approximately ~~26 meters~~75 feet (~~85 feet~~23 meters) east of the alignment

- UC-Riverside Child Development Center - located approximately ~~38 meters~~110 feet (~~125 feet~~34 meters) west of the alignment in Riverside
- Hyatt Elementary School - located in the Box Springs area near Watkins Drive approximately ~~152 meters~~130 feet (~~500 feet~~40 meters) west of the alignment
- Nan Sanders Elementary School - located approximately ~~38 meters~~100 feet (~~125 feet~~31 meters) west of the alignment in Perris
- City of Perris Senior Center – located approximately ~~24 meters~~70 feet (~~80 feet~~21 meters) east of the alignment in Perris

None of these sensitive receptors are located near the intersections that are projected to have the most potential for future congestion, as identified in Traffic Technical Report D. In addition, these receptors would not be close to any of the proposed parking lots. Potential air quality impacts at sensitive receptor locations with respect to both intersections and parking lots are discussed below.

An analysis of the potential for impact to sensitive receptors is performed in circumstances where CO pollution could be expected to occur, such as at parking facilities where extensive idling could occur and at intersections where a large volume of automobiles and trucks could be expected. At the intersections identified in the traffic analysis (refer to Traffic Technical Report D) as having the potential for most future congestion, the *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (USEPA, 1992) was used to determine receptor locations on sidewalks and near discrete sensitive receptor locations. Consequently, the CO hot spot analysis evaluated the potential impacts to these sensitive receptors and calculated pollutant concentrations. Pollutant concentrations decrease as distance from the pollutant source to a receptor increases; therefore, if the analysis determined that there would be a less than significant impact at the sensitive receptors closest to the congested intersection, then it is expected that impacts to receptors located further away from these intersections (such as the sensitive receptors listed above) would also be less than significant and would not require analysis. As mentioned above, none of the specific sensitive receptors listed above would be near any of these congested intersections.

In addition to the intersection analysis, an assessment of sensitive receptors near the proposed PVL station parking lots was also conducted. The assessment identified residential receptors located close to the proposed station parking lots. Specifically, the parking lot for the proposed commuter rail station at Palmyrita Avenue (one of the Hunter Park Station options) would be located approximately 35 meters (115 feet) south and east of residences, while the Downtown Perris Station would be located approximately 65 meters (215 feet) east of a row of homes. At these locations where receptor distances are nearest to the pollutant source, as shown previously in the Parking Lot Analysis, the proposed station parking lots are not expected to generate significant CO concentrations, and a less than significant impact would occur. Other receptors located even further away (such as St. James Catholic School and Perris Elementary School in Perris) would also experience less than significant impacts.

In addition to potential impacts from intersections and parking lots, a health risk assessment with respect to diesel emission from PVL locomotive operations was also considered. Emission would be from trains traveling along the alignment as well as those idling temporarily within layover yards. As a result, air quality modeling was conducted to predict maximum concentrations of air toxic pollutants. Based on these predicted concentrations, the resulting assessment indicated that the "health risk" to sensitive receptors within the project corridor would be substantially below the SCAQMD threshold of significance. Therefore, the potential health risk from train operations would be less than significant.

$PM_{2.5}$ and PM_{10} Evaluation Protocol—Screening Procedure

In March 2006, USEPA issued a guidance document titled *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. This guidance details a qualitative step-by-step screening procedure to determine whether project-related particulate emissions have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for $PM_{2.5}$ or PM_{10}.

The proposed project is in an area designated as nonattainment for PM_{10} and $PM_{2.5}$. According to the most recent USEPA Transportation Conformity Guidance, a PM_{10}/$PM_{2.5}$ hot-spot analysis is required for POAQC in non-attainment areas (40 CFR 93.123 (b) (1)). Projects that are exempt under 40 CFR 93.126 or not POAQC do not require hot-spot analysis.

The proposed project does not meet the criteria of an exempt project under 40 CFR 93.126. However, the USEPA specifies in 40 CFR 93.123(b) (1) that only projects considered POAQC are required to undergo a PM_{10}/$PM_{2.5}$ hot-spot analysis. USEPA defines projects of air quality concern as certain highway and transit projects that involve significant levels of diesel traffic or any other project that is identified by the $PM_{2.5}$ SIP as a localized air quality concern. A discussion of the proposed PVL compared to POAQC, as defined by 40 CFR 93.123(b) (1), is provided below:

1. New or expanded highway projects with greater than 125,000 annual average daily traffic (AADT) and 8 percent or more of such AADT is diesel truck traffic. The proposed project is not a new or expanded highway project.

2. New or expanded highway projects affecting intersections that are at Level of Service (LOS) D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project. The proposed project is not a new or expanded highway project.

3. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location. Although the proposed project has a rail terminal component, it would not alter travel patterns to/from any existing bus or rail terminal.

4. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location. Although the proposed project would expand service to an existing commuter rail terminal (Riverside Downtown Station), it would not increase the number of diesel vehicles congregating at any single location. In addition, the proposed Layover Facility in South Perris would only accommodate a maximum of four SCRRA/Metrolink trains. These trains would

receive overnight light maintenance (cleaning, inspection etc.). Heavy maintenance of these vehicles requiring excessive engine idling would be done at an existing off-site SCRRA/Metrolink facility.

5. Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. The project site is not in or affecting an area or location identified in any $PM_{2.5}$ or PM_{10} implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

Based on the discussion provided above, the proposed project would not be considered a POAQC with respect to PM_{10} or $PM_{2.5}$ emissions as defined by 40 CFR 93.123(b) (1). Therefore, a $PM_{10}/PM_{2.5}$ hot-spot evaluation is not required, and the proposed project can be screened from further analysis.

An Interagency Consultation project review form for $PM_{2.5}$ and PM_{10} hot spot concurrence is required to be submitted to the SCAG Transportation Conformity Working Group (TCWG) for concurrence with this finding prior to final project approval. On April 16, 2010, the SCAG TCWG determined that the PVL was not a POAQC. (http://www.scag.ca.gov/tcwg/projectlist/march10.htm). A copy of the TCWG review form is included in Air Quality Technical Report B, Appendix F.

Mobile Source Air Toxics—Screening Procedure

The FHWA has issued interim guidance on how MSATs should be addressed for highway projects and has subsequently developed a tiered approach for analyzing them. FTA has no separate guidance. Depending on the specific project circumstances, FHWA has identified three levels of analysis:

1. No analysis for exempt projects or projects with no potential for meaningful MSAT effects,

2. Qualitative analysis for projects with low-potential MSAT effects, or

3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

For the PVL, the amount of MSATs emitted would be proportional to the amount of project-related rail activity, assuming that other variables (such as traffic and rail activity not associated with this project) would remain the same. The rail activity estimated for the proposed project would be higher than that for the no-action condition, because of the additional activity associated with the proposed rail line extension. This increase in rail activity would mean that the twelve daily train trips between Riverside and Perris would result in MSAT emissions (particularly diesel particulate matter) in the vicinity of the SJBL alignment. The higher emissions could be offset somewhat by two factors: 1) the decrease in regional automobile commuter traffic due to increased use of commuter rail; and 2) increased speeds on area highways due to the decrease in automobile traffic (according to USEPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases). However the extent to which these emissions decreases would offset the project-related emissions increases is difficult to determine.

In addition, even with the PVL in place, emissions would likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the USEPA-projected reductions are so significant (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future as well. Therefore the PVL has a low-potential for impacts from MSATs and falls under category (2) of the FHWA guidance above and only requires a qualitative assessment.

Mobile Source Air Toxics—Health Risk Assessment

To estimate the localized MSAT effect of the new train service, a health risk assessment ~~will be~~was conducted following CEQA air quality guidelines. This health risk assessment takes into account the effects of TACs on human health. Diesel $PM_{2.5}$ and $PM_{10,}$ and acrolein were selected for analysis as they would be the primary MSAT pollutants emitted by diesel train exhaust and are identified by the USEPA as in the group of priority MSATs. This assessment calculates a health risk index based on the emissions from diesel locomotives currently being used by SCRRA/Metrolink on other rail lines, ~~factors of the existing SCRRA/Metrolink diesel locomotives~~ as well as the running and idle times of the engines. This estimate is conservative since engines used by the project completion year will be required to meet stricter USEPA emissions standards. SCAQMD, in its CEQA Air Quality Handbook, identifies an excess individual cancer risk of one in one million to be a minimal and risk levels up to ten in one million are considered less than significant. The chronic hazard indexes for these two toxics are also calculated to determine the likelihood of chronic health effects due to exposure. As shown above in Table 3.3-3, per SCAQMD, a hazard index less than 1.0 is considered less than significant.

Impact Assessment

Regional Emissions

Table 3.3-7 shows the air quality impacts that would occur during operation of the proposed PVL, with the following operational characteristics. The proposed project would operate 12 one-way trains (four from Perris to LA and one from LA to Perris in the morning peak; one round-trip from LA to Perris to LA midday; four from LA to Perris and one from Perris to LA in the afternoon/evening). This schedule is executed using six train sets featuring F59PHI locomotives, which are currently used by SCRRA/Metrolink. Four of the trains would layover at South Perris to fulfill the morning schedule, while two train sets would reside at LA Union Station to perform the AM and midday schedule out of LA Union Station. The operational analysis includes the incremental increase in train service over the approximately 168-mile round-trip route between South Perris and LA Union Station. In addition, the operational air quality impacts analysis includes the four new stations anticipated to be in service during the initial operation, plus Riverside Downtown Station which is already in service. SO_x emissions were calculated by assuming operational times based on the proposed schedule and use of ultra-low sulfur diesel (ULSD) fuel which will be used exclusively by 2012 as mandated by USEPA. The operational emissions of the trains are based on fuel consumption during the entire trip from South Perris to LA Union Station, and thus include fuel consumed during the train's running and idling phases. Appendix E of Air Quality Technical Report B details the calculation.

The proposed PVL project would result in decreased emissions of carbon monoxide, volatile organic compounds, SO_x $PM_{2.5}$ and PM_{10}. Nitrogen oxide emissions would increase, but the increase would be less than significant. With the reductions in these pollutants, the proposed project would produce a cumulative net benefit to the region's air quality. As rail passenger ridership increases over time and the diesel engines continue to meet EPA's more stringent emission standards, there would be ongoing and increasing air quality benefits.

It is also important to note that the proposed project is included in SCAG's 2008 Adopted RTIP (Project ID RIV520109), as shown in Appendix A of Air Quality Technical Report B. Its presence in the RTIP shows that the project's operational emissions meet the transportation conformity requirements imposed by USEPA and SCAQMD.

Table 3.3-7
2012 Net Change in Operational Emissions (in pounds per day)

Source Category	Pollutant					
	Sulfur Oxides (SO_x)	Carbon Monoxide (CO)	Reactive Organic Compounds (ROC)	Oxides of Nitrogen (NO_x)	Particulate Matter (PM_{10})[1]	Fine Particulates ($PM_{2.5}$)[1]
Train Emissions[2]	0.1	30	6	114	4	4
Vehicular Emissions Reduced	1	1227	26	73	8	8
NET PROJECT EMISSIONS	-1	- 1197	- 20	41	- 4	- 4
SCAQMD Significance Thresholds for Operation	150	550	55	55	150	55
Significant (Yes/No)	No	No	No	No	No	No

Notes: Vehicular Emissions assessed with EMFAC2007, V2.2, July 15, 2009 for summertime.
1. $PM_{2.5}$ emissions calculated consistent with methodology provided in the SCAQMD guidance document Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology (2006).
2. Assumes 6 F59PHI diesel engines (meeting USEPA Tier 2 emission standards) each operating one 168 mile round-trip per day between South Perris and L.A.
3. ~~NO_x is primarily a regional pollutant so localized impacts from parking lot operations would be less than significant.~~

Source: STV Incorporated (2010)

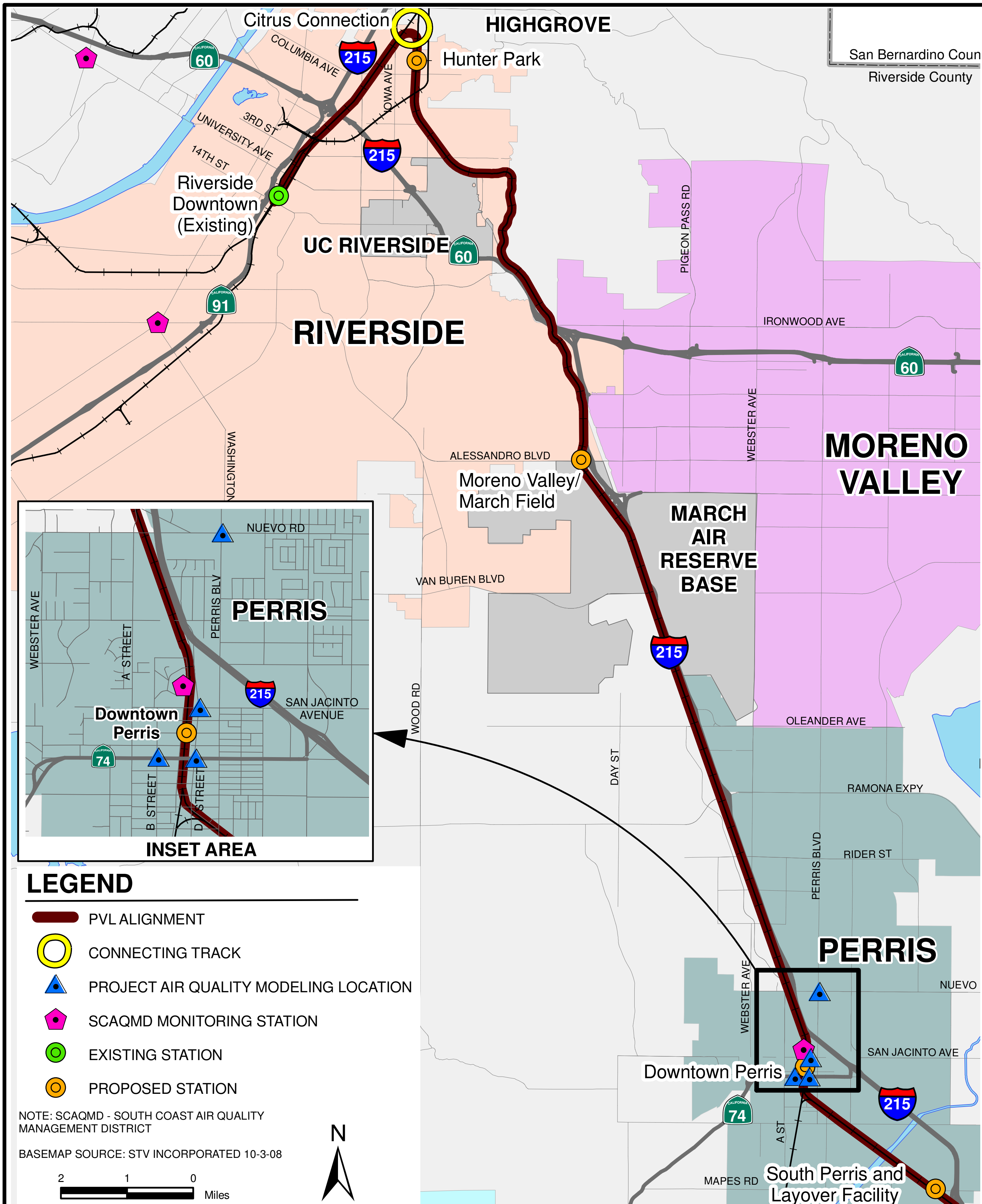
Localized Emissions

Carbon Monoxide - Intersection Analysis

Figure 3.3-1 shows the location of the intersections chosen for microscale air quality analysis. The project's CO concentrations for AM and PM peak hour periods (one- and eight-hour) are provided in Table 3.3-8 (~~opening year~~ 2012 concentrations). As shown in this table, the project would not have a significant impact upon one-hour or eight-hour local CO concentrations due to mobile source emissions.

Because significant impacts would not occur at the intersections with the highest traffic volumes located adjacent to sensitive receptors, no significant impacts are anticipated to occur at any other locations in the study area because the conditions yielding CO hotspots would not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors included in this analysis would not be significantly affected by CO emissions generated by the net changes in traffic that would occur with the project. Because the project does not cause an exceedance or exacerbate an existing exceedance of an AAQS, the project's localized operational air quality impacts would therefore be less than significant. No mitigation measures are necessary.

This Page Intentionally Left Blank



Perris Valley Line | RCTC | KLEINFELDER Bright People. Right Solutions.

PROJECT NO.	92666
DRAWN:	1/12/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666scaqmd.MXD

AIR QUALITY MONITORING AND MODELING LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.3-1

Table 3.3-8
Local Area Carbon Monoxide Dispersion Analysis

Location	Peak Period[a]	2008					
		Maximum 1-Hour Base Concentration (ppm) [b]	Maximum 1-Hour With-Project Concentration (ppm) [c]	Significant 1-Hour Impact? [d]	Maximum 8-Hour Base Concentration (ppm) [e]	Maximum 8-Hour With-Project Concentration (ppm) [f]	Significant 8-Hour Impact? [d]
C St. @ 4th St.	AM	4.3	4.3	No	3.1	3.1	No
	PM	4.4	4.4	No	3.2	3.2	No
D St. @ 4th St.	AM	4.2	4.2	No	3.0	3.0	No
	PM	4.4	4.4	No	3.2	3.2	No
D St.@ San Jacinto Avenue	AM	4.1	4.1	No	3.0	3.0	No
	PM	4.4	4.4	No	3.2	3.2	No
Perris Blvd @ Nuevo Road	AM	4.5	4.5	No	3.3	3.3	No
	PM	4.7	4.7	No	3.4	3.4	No

Notes:
CAL3QHC dispersion model output sheets and EMFAC 2007 emission factors
ppm = parts per million
[a] Peak hour traffic volumes are based on the Traffic Technical Report prepared by STV Incorporated, ~~2010~~2011.
[b] SCAQMD 2012 1-hour ambient background concentration (4.1 ppm) + 2012 base traffic CO 1-hour contribution.
[c] SCAQMD 2012 1-hour ambient background concentration (4.1 ppm) + 2012 with-project traffic CO 1-hour contribution.
[d] The state standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.
[e] SCAQMD 2012 8-hour ambient background concentration (2.9 ppm) + 2012 base traffic CO 8-hour contribution.
[f] SCAQMD 2012 8-hour ambient background concentration (2.9 ppm) + 2012 with-project traffic CO 8-hour contribution.

Carbon Monoxide - Parking Lot Analysis

The analysis of parking lot conditions was prepared to assess the potential impacts to individuals from “cold start” emissions. Emissions from “cold starts” are those that could occur when peak hour riders, in this case, return to their vehicles from the train. This would occur during the evening peak periods for the PVL. The pollutant of concern is CO. NO_x is primarily a regional pollutant so localized impacts from parking lot operations would be less than significant.

The largest project parking lot, at South Perris was evaluated, and if impacts were to be identified at this location, then the next largest parking lot would be evaluated as well. If no impacts were identified, then none of the other parking lots would result in impacts. To prepare the parking lot analysis, a key modeling assumption was to place sensitive receptors around the proposed 880-space parking lot perimeter, set back at a model default distance of 25 meters. This assumption is conservative, as there are no sensitive receptors within 200 meters of the proposed parking lot at South Perris.

Based on the above-described approach, the maximum off-site CO concentration at any sensitive receptor location was determined to be 7.9 parts per million and 5.6 parts per million for the one-hour and eight-hour averaging periods, respectively. These maximum concentrations occurred at a distance of 100 meters from the proposed parking lot. At the model default distance of 25 meters, the one-hour and 8 hour-concentrations were 7.2 and 5.0 parts per million respectively, as shown in Table 3.3-9. These worst-case concentrations are below the NAAQS of 35 parts per million and 9 parts per million for the one-hour and eight-hour averaging periods, respectively. They are also below the CAAQS one-hour concentration not exceeding 20 parts per million (ppm), and the eight-hour concentration of nine ppm. Accordingly, the project's localized operational air quality impacts would be less than significant. No mitigation measures are necessary.

Table 3.3-9
Parking Lot Carbon Monoxide Analysis

Parking Lot	1-Hour Concentration (ppm)	Significant Impact?		8-Hour Concentration (ppm)	Significant Impact?	
		CAAQS (20 ppm)	NAAQS (35 ppm)		CAAQS (9 ppm)	NAAQS (9 ppm)
South Perris Station	7.2	No	No	5.0	No	No
Concentrations measured at model default distance of 25 meters CAAQS = California Ambient Air Quality Standards NAAQS = National Ambient Air Quality Standards						

PM_{10} and $PM_{2.5}$

Based on the criteria listed in *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*, the proposed project would not be considered a POAQC with respect to PM_{10} or $PM_{2.5}$ emissions as defined by 40 CFR 93.123(b) (1). The steel on steel interaction between the train wheels and the rails is not expected to cause any fugitive dust. Therefore, a PM_{10}/$PM_{2.5}$ hot-spot evaluation is not required, and the proposed project can be screened from further analysis.

An Interagency Consultation project review form for $PM_{2.5}$ and PM_{10} hot spot concurrence is required to be submitted to the SCAG TCWG for concurrence with this finding prior to final project approval. On April 16, 2010, the SCAG TCWG determined that the PVL was not a POAQC (http://www.scag.ca.gov/tcwg/projectlist/march10.htm).

Mobile-Source Air Toxics

The FHWA has established interim guidance for analyzing the potential effect of MSATs. FTA currently has no guidance on this topic. This guidance stipulates that a qualitative assessment be performed for highway related projects that establish a low-potential for MSAT effects. Based on this guidance document, the proposed project falls under category (2) above, projects with low potential MSAT effects. As such, a qualitative MSAT analysis utilizing a health risk assessment is provided for diesel exhaust particulates and acrolein.

The results of the health risk assessment are shown in Table 3.3-10. The health risk assessment is presented in full detail in Appendix C of Air Quality Technical Report B. Per the SCREEN3 modeling program, the maximum concentrations of these pollutants occurs at a distance of 25 meters from the source.

Table 3.3-10
Calculated Risk at Point of Greatest Concentration

Pollutant	Risk Factor	Maximum Concentration ($\mu g/m^3$)[1]	Calculated Risk (Health Index - HI)	Threshold of Significance
Diesel Exhaust Particulate	Excess Lifetime Cancer Risk	0.01078	3.235/million	10/million
Diesel Exhaust Particulate	Chronic Hazard	0.01078	HI = 0.002	HI = 1.0
Acrolein	Acute Hazard	0.005055	HI = 0.004	HI = 1.0

Source: SCAQMD CEQA Air Quality Handbook, STV Incorporated (2010)
1. Represents the maximum calculated pollutant concentrations.

The additional commuter rail activity contemplated as part of the PVL would have a negligible effect on diesel particulate matter or acrolein emissions in the vicinity of nearby homes, schools and businesses along the PVL alignment. As locomotive diesel engines continue to meet USEPA's more stringent TIER3 emission standards, there would be ongoing and increasing air quality benefits. In addition, on a region-wide basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, would cause substantial reductions over time so that in almost all cases, the MSAT levels in the future would be significantly lower than today.

Greenhouse Gas Emissions

On February 16, 2010, the Office of Administrative Law filed with the Secretary of State the amendments to the CEQA Guidelines providing guidance regarding the analysis of GHGs in CEQA documents. The amendments, which were approved by the Natural Resources Agency in December 2009 pursuant to Senate Bill (SB) 97, became effective on March 18, 2010. The amendments are intended to minimize inconsistencies in the analysis of GHG going forward and to provide CEQA lead agencies with guidance on the evaluation of GHG emissions and their associated impacts. Specifically, the new Guidelines confirm that the method of analysis is left to the sound discretion of the lead agency (CEQA Guidelines §15064.4). Additionally, the new guidelines confirm that a lead agency may use either a quantitative analysis or a qualitative analysis in determining whether a project may have a potentially significant impact on climate change (CEQA Guidelines §15064.4). The analysis required by RCTC includes both quantitative and qualitative elements. The results of the quantitative portions of this assessment are shown in Table 3.3-11. Moreover, and as permitted by the revised CEQA Guidelines and Appendix G, RCTC has determined that the analysis of GHGs and Climate Change is more appropriate included in the Air Quality Section 3.3. Accordingly, this analysis fully complies with the newly revised state CEQA Guidelines.

~~In accordance with the CEQA Guidelines, a qualitative assessment of GHG emissions was performed. The results of the assessment are shown below in Table 3.3-11.~~

Table 3.3-11
Greenhouse Gas Qualitative Assessment

Pollutant Source	CO_2 pounds/day
Diesel Locomotives	11,400
Passenger Vehicles	-158,000
Net change in CO_2	-146,600

The existing and future VMT projections for the proposed project were not available. Therefore an approximation of reduced VMT (as shown in Appendix E of Air Quality Technical Report B) was calculated based on the assumption that the proposed PVL service would replace the single passenger vehicles driving from South Perris to Riverside to connect to the existing rail service. The diversion from private car use to PVL ridership is estimated to reduce VMT by approximately 34 million miles per year in the project area. This estimate includes VMT from private homes to the proposed stations. Based on emission factors from EMFAC2007 in the project operation year of 2012, the reduction in VMT was calculated to result in decreased CO_2 emissions of about 160,000 lbs per day. As CO_2 is the most abundant GHG found in automobile emissions, a reduction in CO_2 indicates a reduction in the less prominent exhaust based GHGs. Therefore, it is unlikely that the proposed PVL project operations would increase the GHG burden in the region, but would likely result in a quantifiable reduction in GHG.

Summary of Impacts

The proposed PVL project would reduce some long-distance trip-making that now occurs via automobile, resulting in a corresponding improvement in air quality. Although the total amount of air quality improvement is small compared to the region, the introduction of commuter rail service provides an ongoing opportunity for reducing automobile trips. The proposed rail service would result in a net decrease in CO, ROC, and NO_x emissions. In addition, SCRRA/Metrolink will be replacing engines over time and the next generation would meet USEPA TIER3 requirements, which have lower emission characteristics than the current fleet. As these new engines are incorporated into the fleet, air quality benefits would increase.

Riverside County and the study corridor are forecasted to have substantial increases in population and employment over the coming decades. The general result of such growth would be increased travel on the existing roadway network, demand for additional capacity on those existing facilities, demand for new roadways, as well as additional demand for transit services. The cumulative impacts of increased transportation demands would likely be degradation of air quality as the volume of travel continues to expand, conversion of land use from agriculture/vacant to residential and commercial development, a corresponding reduction of habitats as land uses change, and increased demands on public facilities.

Construction Period Air Quality Evaluation

As shown in Table 3.3-12, based upon the evaluation of the reasonable worst-case construction day, the construction of the PVL would not result in exceedances of the SCAQMD CEQA daily construction emission limits. Significant adverse impacts would not occur; nonetheless, best management practices are recommended following to control localized emissions.

Table 3.3-12
PVL Predicted Daily Construction Emissions (lbs)

	CO	NO_X	PM_{10}	$PM_{2.5}$	VOC	SO_X
PVL Total Emissions	~~40~~44	~~88~~98	49	15	~~8~~9	2
SCAQMD Construction Emission Limits	550	100	150	55	75	150
Significant (Yes/No)	No	No	No	No	No	No

In accordance with the CEQA Guidelines, a qualitative assessment of CO_2 emissions was performed. The results of the assessment indicate that emissions created by construction activities would total approximately ~~10,083~~12,118 lbs per day during the construction period. This estimate coupled with the net decrease in operational emissions of ~~160,000~~146,600 lbs per day indicates that the implementation of the proposed PVL project would not result in increases in CO_2 pollutant emissions.

Construction Best Management Practices

During the construction period, contractors would be required to implement Best Management Practices (BMPs) to control fugitive dust emissions in accordance with SCAQMD Rule 403. In addition to these regulatory requirements, the following construction-phase air quality BMPs would also apply and be included in RCTC contract documents:

- All land clearing/earth-moving activity areas shall be watered to control dust as necessary to remain visibly moist during active operations.
- Streets shall be swept as needed during construction, but not more frequently than hourly, if visible soils~~ material~~ ~~has~~have been carried onto adjacent public paved roads.
- Construction equipment shall be visually inspected prior to leaving the site and loose dirt shall be washed off with wheel washers as necessary.
- Water three times daily or apply non-toxic soil stabilizers, according to manufacturers' specifications, as needed to reduce off-site transport of fugitive dust from all unpaved staging areas and unpaved road surfaces.
- Traffic speeds on all unpaved roads shall not exceed 5 mph.
- All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.
- Contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use, to reduce vehicle emissions.

- Establish an on-site construction equipment staging area and construction worker parking lots, located on either paved surfaces or unpaved surfaces subject to soil stabilization.

- Use electricity from power poles, rather than temporary diesel or gasoline powered generators.

- Use on-site mobile equipment powered by alternative fuel sources (i.e., ultra-low sulfur diesel, methanol, natural gas, propane or butane).

- Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries (2) utilizing the existing rail freight line for materials delivery.

- Construction grading on days when the wind gusts exceed 25 miles per hour would be prohibited to control fugitive dust.

With application and compliance with the construction-period mitigation measures, potential impacts during construction would be less than significant. By such avoidance, impacts would be less than significant.

Summary of Construction Period Impacts

The overall potential for air quality impacts to be cumulatively significant is reduced because the proposed project would comply with state and regional air quality requirements that construction projects mitigate their individual impacts to less than significant levels, based on their forecasted construction schedule and levels of activity. Traffic and construction data pertaining to the construction of the other projects is a requirement for a quantitative assessment of cumulative impacts. However, it is assumed that concurrent projects are following the same construction BMPs or are included in the RTIP (in which the impacts of their emissions would be already accounted for in the regional burden) and thus their impacts would not be considered significant.

Construction of the proposed Downtown Perris Station could occur simultaneously with the construction of other proposed downtown revitalization projects, which could result in cumulative construction impacts. One of these, the Perris Multimodal Transit Center, is currently in the process of being built so there would be no potential for any cumulative impacts since it would be completed before the PVL project. The extent of the potential impacts with other projects would depend on the location, magnitude, and duration of construction activities for each of the projects. CEQA analysis conducted for this proposed project indicates the use of several pollution control measures to aid in reducing emissions. However, the proposed project would avoid exceeding SCAQMD criteria thereby would reduce any potential for cumulative construction period impacts. It is assumed and likely that other construction projects in Perris would also be conducted with similar mitigation and control measures in place.

Development projects, such as the Meridian Business Park within the March JPA (formerly known as March Business Center), would also be required to impose mitigation measure to address fugitive dust or exceedances of other criteria pollutants during construction. Since construction of each element of these master planned developments would also have to include mitigation measures the overall potential for cumulative air quality impacts would be reduced.

However, the Meridian Business Park would be built over the next 20 to 25 years and as such is unlikely to interfere with the PVL construction schedule which would be implemented over the next two years. As such, the overall potential for cumulative impacts would be reduced.

3.3.4 Mitigation Measures

Implementation of the PVL project would not result in significant impacts with regard to air quality. No mitigation measures are recommended.

This Page Intentionally Left Blank

3.4 NOISE AND VIBRATION

This section describes the existing noise and vibration conditions for the PVL project and assesses long-term changes in noise and vibration conditions resulting from proposed rail service operations, as well as short-term effects related to construction activities. The proposed PVL project was assessed based on the state of the existing noise environment and the resultant effect that future project-related rail traffic would have on nearby noise sensitive areas. Where noise or vibration impacts were predicted, mitigation measures are identified and discussed. This analysis is based on the *Perris Valley Line Commuter Rail Noise and Vibration Technical Report* (STV Incorporated, ~~2010~~2011) to this SEA as presented in Technical Report C.

The FTA guidelines, *Transit Noise and Vibration Impact Assessment (2006)* (the FTA Manual), were followed to conduct the detailed noise and vibration impact assessments presented in this report. The FTA Manual provides explicit procedures for producing accurate impact assessments for federally-funded mass transit projects. It contains the standard and accepted methodologies for analyzing transit-related noise and vibration impacts throughout the country. It also contains techniques and procedures for development of mitigation of predicted impacts. This report presents the findings of updated noise analyses, and also updates the 2004 Draft EA for the PVL, prepared under the NEPA.

As part of this SEA, previously measured noise levels were augmented with new field measurements of existing noise. These measurements include specific locations previously requested by the public through comment on the 2004 Draft EA and the CEQA Mitigated Negative Declaration. Beyond this augmented program, additional noise measurements were taken for the detailed analysis to ensure a representative and accurate assessment of the existing noise environment.

I. Noise Fundamentals

Noise, otherwise known as unwanted sound, is what humans hear when our ears are exposed to small pressure fluctuations in the air (FTA, 2006). Noise is generated by a source and the magnitude of the noise depends on the type of source and its operating characteristics. In the case of the PVL project, the commuter rail would be the primary source of noise. Noises associated with commuter rail are primarily generated from the following system elements:

- Diesel train engines, which is in part a function of the rate of acceleration and speed.
- Cooling fans.
- Wheel/rail interaction, a function of the condition of wheels and type (e.g., welded or jointed), rail car suspension and condition of the rails.
- Structures, such as trestles, that may amplify sound. Horns and crossing gate bells (at and approaching grade crossings).

When excessive noise interrupts ongoing activities, such as sleeping, conversing, and watching TV, it can create annoyance in communities, especially residential areas. In order to quantify and measure this noise annoyance in the environment, beginning in the 1970s, the USEPA undertook a number of research and synthesis studies relating to community noise of all types. As a result of this research, the USEPA developed descriptors, noise impact criteria, and methods of noise assessment, as described below.

Noise is measured using several descriptors:

- Decibel (dB) - The logarithmic unit used to measure sound.

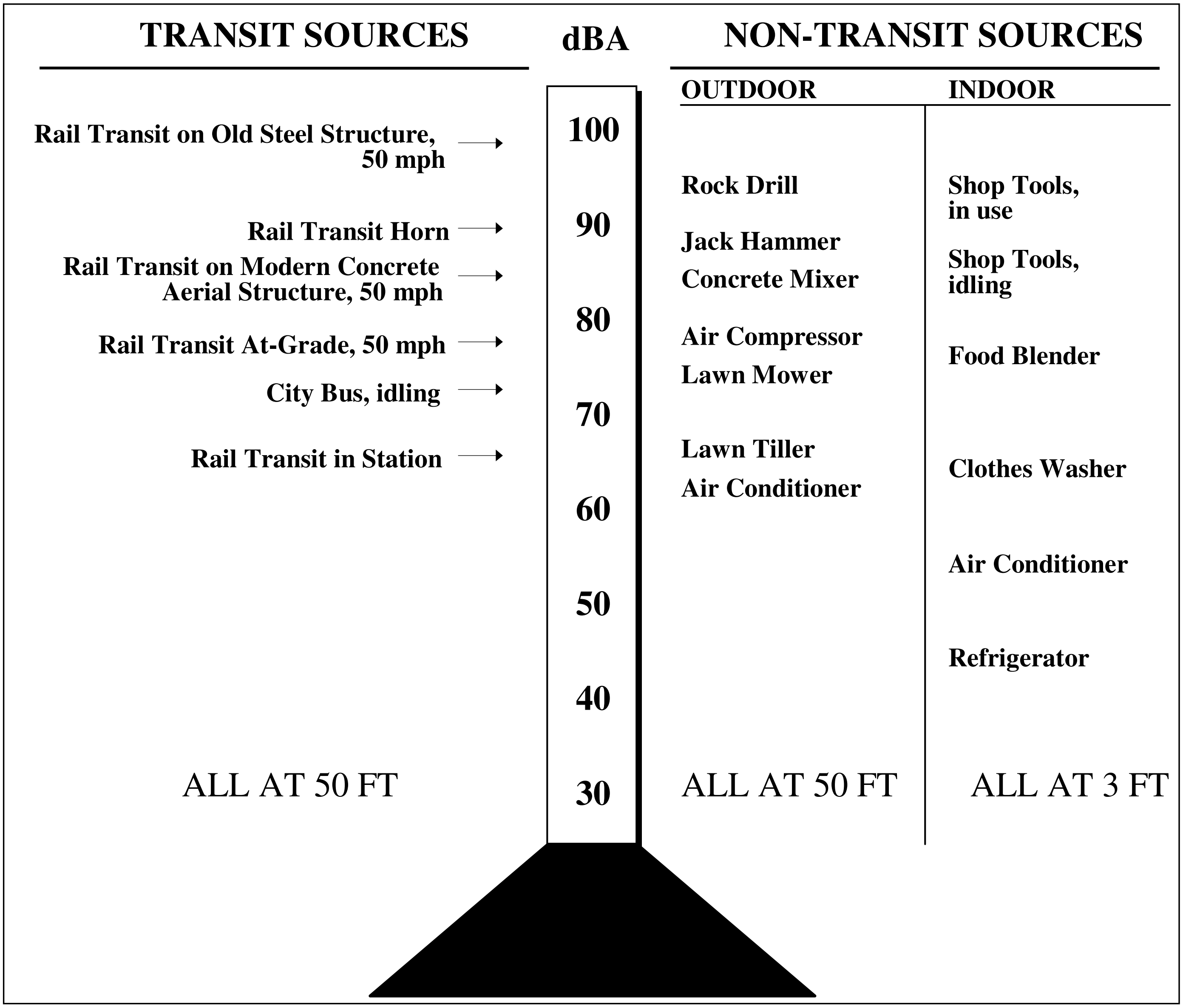
- A-weighting Sound Level (dBA) –The basic noise unit that measures sound audible to humans. Noises contain sound energy at different frequencies whose range depends on the individual noise source. Human hearing does not register the sound levels of all noise frequencies equally, which reduces the impression of the magnitude of high and low pitched sounds. dBA units are sound levels measured through a process that filters noise levels to predominantly include sounds that are audible to humans. This process reduces the strength of very low and very high pitched sounds, such as low-frequency seismic disturbances and dog whistles, to more accurately measure sounds that affect humans. Normally occurring sounds lie in the range of 40 to 120 dBA. A sample of the dBA of common transit-related and other noise sources is shown on Figure 3.4-1.

- Equivalent Sound Level (L_{eq}) – L_{eq} represents a single value of sound level that quantifies the amount of noise in a specific environment for a particular period of time.

- Hourly Equivalent Sound Level (L_{eq} ($_h$)) - A value that accounts for all levels of sound that occur in a particular location for one hour. For example, as a train approaches, passes by, and recedes into the distance, the dBA will rise, reach a maximum level, and eventually fade. The L_{eq} ($_h$) for this event would be a value that measures the cumulative impact of each level of sound that resulted from the train's passing, in addition to any other sounds that occurred during one hour. It is particularly useful when measuring the cumulative noise impact for communities. Day-Night Sound Level (L_{dn}) - a value that accounts for all levels of sound that occur in a particular location for 24 hours. This cumulative value also includes a ten dB penalty imposed on any noise that occurs between 10 PM and 7 AM. L_{dn} is used to measure the cumulative noise impact at residential areas primarily because it takes into account the increased sensitivity to noise at night, which is when most people are sleeping. Typical ranges for community noise in various settings are shown in Table 3.4-1.

Table 3.4-1
Typical Range of L_{dn} in Populated Areas

Area	L_{dn}, dBA
Downtown City	75–85
"Very Noisy" Urban Residential Areas	65-75
"Quiet" Urban Residential Areas	60-65
Suburban Residential Areas	55-60
Small Town Residential Areas	45-55
Notes: L_{dn}= cumulative noise exposure	
Source: FTA Transit Noise and Vibration Assessment Manual, (2006)	



SOURCE:

FTA MANUAL FOR TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT, FTA, MAY 2006

PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666dia2.MXD

COMMON INDOOR AND OUTDOOR NOISE LEVELS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.4-1

A few general relationships may be helpful in understanding the dB scale:

- An increase of one dBA cannot be perceived by the human ear.
- A three dBA increase is normally the smallest change in sound levels that is perceptible to the human ear.
- A ten dBA increase in noise level corresponds to tenfold increase in noise energy, but a listener would only judge a ten dBA increase as being twice as loud.
- A 20 dBA increase would result in a dramatic change in how a listener would perceive the sound.

3.4.1 Noise Regulatory Setting

Federal Policies and Regulations

Noise Control Act of 1972 and Quiet Communities Act of 1978

The Noise Control Act of 1972 (42 USC) and the Quiet Communities Act of 1978 (42 USC 4913) were established by the USEPA to set performance standards for noise emissions from major sources, including transit sources. Though these acts are still in effect, the enforcement of the stated noise emission standards shifted to state and local governments in 1981.

Federal Railroad Administration

The Federal Railroad Administration (FRA) adopted the USEPA railroad noise standards as its noise regulations (49 CFR 11, part 210) for the purpose of enforcement. The standards provide specific noise limits for stationary and moving locomotives, moving railroad cars, and associated railroad operations in terms of A-weighted sound level at a specified measurement location.

Federal Transit Administration

The FTA provides capital assistance for a wide range of mass transit projects from new rail rapid transit systems to bus maintenance facilities and vehicle purchases. FTA's environmental impact regulation is codified in Title 23, CFR, Part 771. In addition, as noted in this analysis, FTA has developed the prevailing noise and vibration assessment procedures, which are used herein.

State Policies and Regulations

California Noise Control Act of 1973

The California Health and Safety Code established the California Noise Control Act of 1973 (§46000 et seq.) to "establish and maintain a program on noise control." This act mirrors the federal Noise Control Act of 1972 and also defers the enforcement of noise emission standards to local county and city agencies.

California Government Code Section 65302 (f)

California Government Code Section 65302 (f) states that general plans must include a noise element section which identifies and appraises noise problems in the community, and which recognizes the guidelines established by the Office of Noise Control. The adopted noise element should serve as a guideline for compliance with the state's noise standards.

California Public Utilities Commission Requirements

The current CPUC requirements for audible warning devices at grade crossings dictate that bells or other audible warning devices shall be included in all automatic warning device assemblies and shall be operated in conjunction with the flashing light signals (AREMA, 2007).

Local Policies and Regulations

The PVL project would be subject to local policies and regulations relative to construction noise and local nuisance noise levels. These statutes define maximum noise limits for existing community activities and future land development projects; however, as they do not contain explicit noise criteria governing future rail operations, they do not pertain to the assessment of these future operations. As a result, for the PVL project, local policies and regulations are applied to potential on-site project construction activities.

Riverside County General Plan

The Riverside County General Plan Noise Element provides several policies pertaining to the location of new potentially noise-sensitive uses and sets forth planning criteria to maximize the compatibility of uses adjacent to rail corridors and stations. The Noise Element addresses excessive noise exposure and provides community planning for the regulation of noise (Riverside County, 2008). This element includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise. Policy No. 10.4 recommends noise mitigation features where rail operations impact existing adjacent residential or other noise-sensitive uses.

The Riverside County General Plan defines “noise sensitive land uses” as a series of land uses that have been deemed sensitive by the State of California. These land uses require a serene environment as part of the overall facility or residential experience and include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas.

Riverside County Ordinance No. 847

Riverside County Ordinance No. 847 establishes countywide standards for regulating noise (Riverside County, 2007). For example, in residential land uses, the maximum dB level allowed from 7 AM to 10 PM is 55, while the maximum dB level allowed from 10 PM to 7 AM is 45. With a few exceptions, no person shall create any sound that causes the exterior sound level on any other occupied property to exceed the stated sound level standards. For construction-related activities that exceed these standards, an application for a construction-related exception must be made to the Director of Building and Safety accompanied by the appropriate filing fee.

In this ordinance, “sensitive receptors” are defined as land uses that are identified as sensitive to noise in the Noise Element of the Riverside County General Plan.

Riverside County Code, Title 15.04.020 (F)

According to the Riverside County Municipal Code, Title 15.04.020 (F), whenever a construction site is within one-quarter mile of an occupied residence or residences, no construction activities may be undertaken between the hours of 6 PM and 6 AM during the months of June through September and between the hours of 6 PM and 7 AM during the months of October through May. Exceptions are allowed only with the written consent of the building official.

Operational noise levels are regulated by the Riverside County Department of Industrial Hygiene to limit the level of noise from industrial and other stationary source operations. Worst-case scenario levels for stationary noise sources projected to the property line of an occupied residential property are to remain below 45 dBA during nighttime hours (10 PM to 7 AM), and are not to exceed 65 dBA during daytime hours (7 AM to 10 PM). Sensitive receptors, such as rest homes, schools, hospitals, mental care facilities, places of worship, and libraries, are described in the Riverside County General Plan. Noise generating uses that result in noise levels greater than 65 dBA are discouraged near these areas of increased sensitivity.

City of Riverside General Plan

The Noise Element in the City of Riverside General Plan includes policies and plans that protect existing and planned land uses from significant noise impacts and ways to minimize noise impacts. Policies N - 4.1 through N - 4.5 specifically address ground transportation-related noise impacts and noise reduction features that should be considered, including earthen berms and landscaped walls.

The Noise Element also refers to the City of Riverside Municipal Code, Title 7 for regulations regarding construction noise.

City of Riverside Municipal Code, Title 7

The City of Riverside Municipal Code, Title 7 sets forth standards and regulations that control unnecessary, excessive, and/or annoying noise in the City (City of Riverside, 2007). It is enforced by the Code Enforcement Division of the Community Development Department and the Riverside Police Department. Based in Table 3.4-2, unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour; or

2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour; or

3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or

4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for the cumulative period of more than one minute in any hour; or

5. The exterior noise standard of the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Table 3.4-2
City of Riverside – Exterior Noise Standards

Land Use Category	Time Period	Noise Level
Residential	Night (10 PM to 7 AM) Day (7 AM to 10 PM)	45 dBA 55 dBA
Office/Commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community Support	Any time	60 dBA
Public Recreation Facility	Any time	65 dBA
Non-urban	Any time	70 dBA

Section 7.35.010 specifically addresses construction-related activities. Construction work that exceeds the allowable noise standards (in Table 3.4-2) may not occur between the hours of 7 PM and 7 AM on weekdays, between 5 PM and 8 AM on Saturday, or at any time on Sunday or federal holidays.

City of Perris General Plan

The City of Perris General Plan does not discuss specific noise requirements for railroads, but it does provide goals, policies, and implementation measures that address future land use compatibility with noise from rail traffic (City of Perris, 2006). Implementation Measure III.A.1 of Policy III.A states that the city of Perris will work with BNSF and RCTC to upgrade aging rail with new continuous welded rail and to install noise reduction features in residential areas.

City of Perris Municipal Code, Chapter 7.34

Chapter 7.34 of the City of Perris Municipal Code declares that excessive noise levels are detrimental to the health and safety of individuals and are therefore prohibited by the provisions of Ordinance 1082 codified in this chapter (City of Perris, 2000). The maximum noise level allowed during the hours of 10 PM and 7 AM is 60 dBA, and 80 dBA is allowed between 7 AM and 10 PM.

Construction noise is restricted to 80 dBA at residential property lines, and construction is restricted to the hours of 7 AM to 7 PM. Construction is prohibited on Sundays and holidays except for Columbus Day and Washington's Birthday.

FTA Noise Impact Criteria

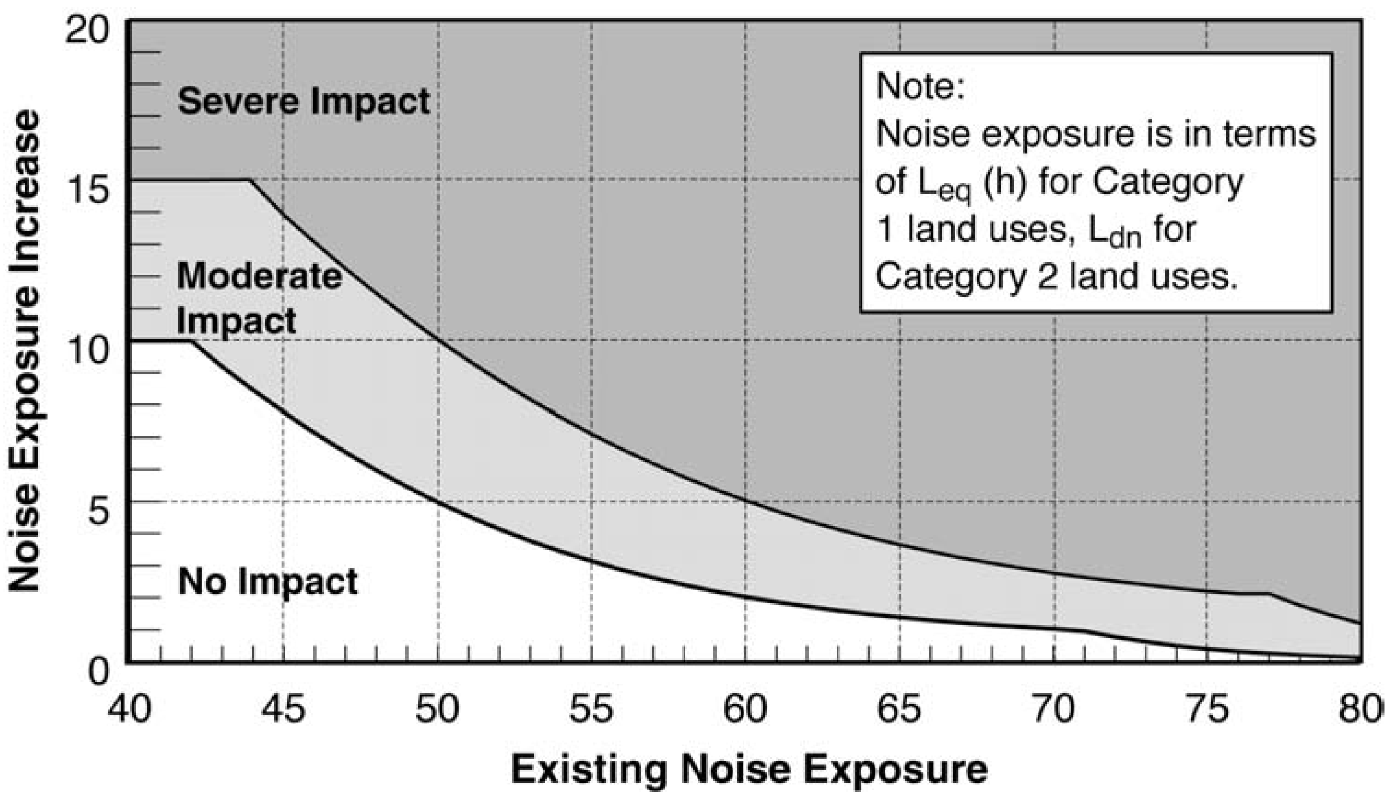
The FTA has established noise criteria to assess potential impacts of transit projects, as shown on Figure 3.4-2. These criteria were developed based on the research done by the USEPA that identified environments particularly sensitive to annoying noises. These environments are known as “noise sensitive land uses” or “sensitive receptors”. The FTA noise criteria group noise sensitive land uses into three categories, as shown in Table 3.4-3.

For Categories 1 and 3, the L_{eq} noise descriptor is used, while Category 2 properties are assessed utilizing the L_{dn} descriptor. In most cases, these three categories are the only land uses that would be negatively impacted by high noise levels because industrial or commercial areas are generally compatible with high noise levels.

Noise impacts to these three categories as a result of a proposed project are assessed by comparing the existing and future project-related outdoor noise levels as illustrated in the graph provided on Figure 3.4-2. These potential noise impacts fall into three types: “No Impact,” “Moderate Impact,” and “Severe Impact”.

- No Impact - The project, on average, will result in an insignificant increase in the number of instances where people are “highly annoyed” by new noise.
- Moderate Impact - The change in cumulative noise is noticeable to most people, but may not be sufficient to cause strong, adverse community reactions.
- Severe Impact - A significant percentage of people would be highly annoyed by the noise, perhaps resulting in vigorous community reaction.

This Page Intentionally Left Blank



SOURCE:

FTA MANUAL FOR TRANSIT NOISE AND VIBRATION
IMPACT ASSESSMENT, FTA, MAY 2006

PROJECT NO.	92666	ALLOWABLE TRANSIT NOISE INCREASES	FIGURE
DRAWN:	1/5/10		3.4-2
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666dia3.MXD			

KLEINFELDER

Table 3.4-3
Land Use Categories and Metrics for Transit Noise

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq(h)}$*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor $L_{eq(h)}$*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.
Notes: *$L_{eq(h)}$ for the noisiest hour of transit-related activity during hours of noise sensitivity		
Source: FTA Transit Noise and Vibration Impact Assessment Manual (2006)		

As the existing level of ambient noise increases, the allowable level of transit noise also increases, but the total amount by which that community's noise can increase without an impact, is reduced. As shown in Table 3.4-4, as existing and allowable combined total noise levels increase, the allowable change in noise level decreases.

Table 3.4-4
Allowable Transit Noise Level Increases(L_{dn} and L_{eq} in dBA)

Existing Noise Levels	Allowable Project Noise Level	Allowable Combined Total Noise Level	Allowable Noise Level Increase
45	51	52	7
50	53	55	5
55	55	58	3
60	57	62	2
65	60	66	1
70	64	71	1
75	65	75	0
Source: FTA Transit Noise and Vibration Impact Assessment Manual (2006)			

3.4.2 Noise Affected Environment

Noise sensitive land use areas within the proposed PVL project area were identified by screening GIS data for buildings with residential or institutional uses nearby the PVL corridor. Field observations were also made to identify and confirm noise sensitive land use locations within the larger study area.

The proposed PVL project area would include portions of the existing BNSF alignment, between the Downtown Riverside Station and the Highgrove area, as well as the SJBL alignment between the areas of Highgrove and south of Perris. These two active railways would be connected by the proposed new Citrus Connection.

The noise environmental conditions for each segment are described below.

- BNSF segment - The noise environment in the Riverside to Highgrove BNSF Mainline segment is dominated by an extremely heavy volume of rail activity; between 60 and 80 trains travel along it during a typical 24-hour period. The majority of these trains (about eighty percent) are freight. These trains generally operate with three to four diesel locomotives and about 50 to 100 freight cars. Typical speeds are approximately 30 mph. The remaining rail traffic consists of mostly SCRRA/Metrolink, and a few Amtrak trains. The SCRRA/Metrolink trains have a single diesel locomotive and about three passenger cars and travel at average speeds of approximately 50 mph. The Amtrak trains have two to three diesel locomotives and about 15 cars, traveling at about 50 mph. Train traffic occurs during both day and night hours. In addition to rail activity, vehicles traveling on I-215 and SR-60 make a significant contribution to the noise environment, as do vehicles on local streets.

- SJBL segment - The SJBL alignment from Highgrove to south of Perris currently has about two freight trains traveling on it daily. These trains typically consist of three diesel locomotives and about 25 freight cars and travel at maximum speeds of 20 mph. In those portions of the rail segment that have grade crossings (where the majority of the corridor's noise sensitive receptors are located), horn noise is a significant contributor to the existing noise environment. Noise from automobile traffic becomes significant along the corridor from near Moreno Valley to Perris, where the I-215 freeway parallels the SJBL, and grade crossings are limited. However, this portion of the SJBL alignment contains very few sensitive noise receptors.

As a result of the train activity, the existing alignment contains grade crossings areas where warning bells would be required for passing trains. At most crossings, these devices are represented by electro-mechanical railroad warning gongs. At a point 10 feet from the gong and in increments of 20 degrees, the sound level should not be more than 105 dBA and not less than 85 dBA. The gongs typically operate between 30 to 60 seconds per normal through-train movement. Whenever a train is physically occupying the space where the railroad and roadway intersect, the gongs will be active.

The current CPUC requirements for audible warning devices at grade crossings are as follows:

> Bells or other audible warning devices shall be included in all automatic warning device assemblies and shall be operated in conjunction with the flashing light signals. See American Railway Engineering and Maintenance of Way Association's *Communications and Signals Manual of Recommended Practices* for reference (AREMA, 2007).

<u>Noise Measurement Programs</u>

To assist in the assessment of potential impacts, noise measurements were conducted at several selected sensitive receptors. The measurement sites were selected on the basis of several factors, the most important of which was the site's potential sensitivity to changes in noise levels. Measurements were taken in 2002 and 2005, and again in 2008/2009 to update and enhance the data.

For all noise measurements, each site was either representative of a unique noise environment, or of nearby similarly situated receptors. Along the BNSF alignment, the primary land uses are industrial and commercial; however, noise monitoring was conducted at several pockets of residential properties near the alignment. As the Citrus Connection and the existing SJBL alignment pass through predominately residential neighborhoods, most of the sensitive receptors monitored along these segments are residential in nature. Several non-residential land uses also exist along these segments and were included in the monitoring program as well. These sites include schools, churches and senior centers, also deemed sensitive receptors (Riverside County, 2007; 2008). Both long-term (24-hour) and short-term (20 minutes to 1 hour) measurements were conducted.

2002 Measurement Program

For the 2002 measurement program, 31 noise sensitive sites were monitored along the project corridor. A tabulation of these monitored locations is provided in Table 3.4-5 and monitoring locations are mapped on Figure 3.4-3 (North) and Figure 3.4-4 (South). In general, existing L_{dn} noise levels at sensitive receptors along the BNSF alignment were high and in the “downtown city” noise range, while existing L_{dn} noise levels at residential areas of Riverside and Perris adjacent to the SJBL alignment are in the “’very noisy’ urban residential areas” range, as shown in Table 3.4-5.

2005 Measurement Program

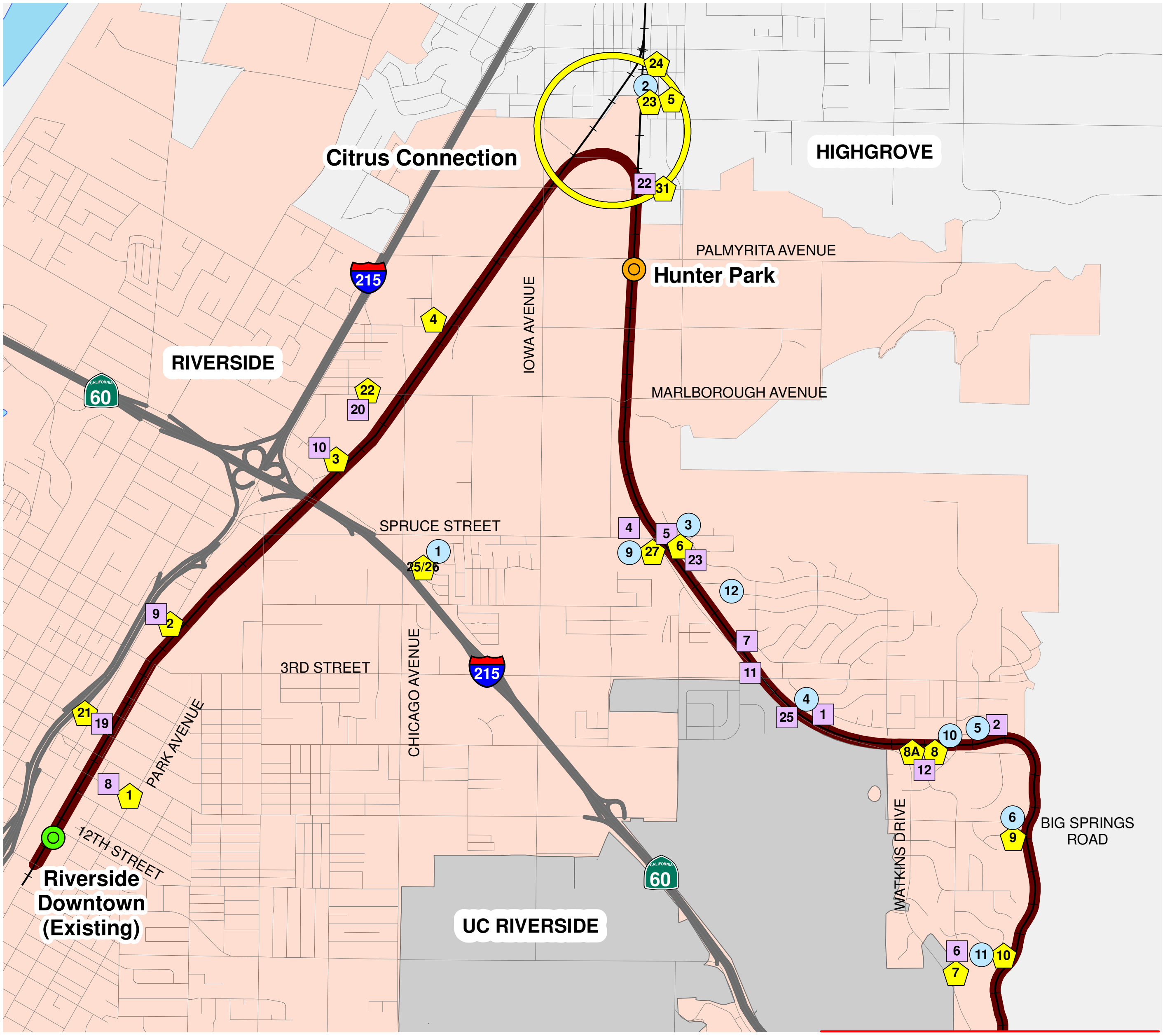
In 2005, several additional noise measurement locations were identified, including locations suggested by public comment on the Draft EA. In all, the 2005 measurement program included additional monitoring at 12 noise sensitive sites along the SJBL alignment. A tabulation of these monitored locations is provided in Table 3.4-6 and monitoring locations are mapped on Figure 3.4-3 and Figure 3.4-4. The monitoring at locations along the SJBL alignment indicates that existing L_{dn} noise levels at residential locations of Riverside and Perris are generally in the “’very noisy’ urban residential areas” range, as shown in Table 3.4-1. Additional monitoring at non-residential locations indicated L_{eq} values ranging from 49 to 61 dBA.

Table 3.4-5
Summary of Noise Measurements (2002)

Site No.	Land Use	Description	Dist. from Tracks (ft)	Existing Noise Level (L_{dn})
1	SF	3015 9th St	450	74
2	SF	3112 1st St	180	79
3	SF	1901 Thornton Ave	80	82
4	SF	1148 Ardmore St	340	76
5	SF	Transit & Villa Streets	330, 20 [1]	78
6	SF	890 Kentwood Dr	55	70
7	MF	10 Watkins Dr	125	68
8	SF	121 Nisbet Way	80	68
8A	SF	277 Nisbet Way	50	70
9	SF	396 E Big Springs Road	125	54
10	SF	298 E Manfield St	110	56
11	SF	20511 Claremont	560	61
12	SF	7005 Old Frontage Rd	500	60
13	SF	California & Wade Streets	240	68
14	School	Nan Sanders Elementary School	140	60*
15	SF	234 Bowen St	230	59
16	SF	30 C St	210	66
17	SF	10th St & Perris Blvd	75	69
18	SF	124 8th St	250	64
19	Hotel	27272 SR-74	130	75
20	SF	25688 Sherman Rd	330	54
21	Commercial	Old Spaghetti Factory	250	72*
22	SF	Marlborough Avenue (between Catania Drive & PVL)	320	76
23	SF	Villa St (between Transit Ave & PVL)	330,125 [1]	76
24	SF	Transit Ave (near Fountain St)	200,30 [1]	79
25/26	SF	Trailer park (274 Sir Belvidere Dr)	50	72
27	Church	St George's Episcopal Church (Spruce St & Watkins Dr)	180	67*
27A	MF	Box Spring & Morton	125	57
28	Cemetery	Riverside National	100	61*
29	Senior Citizens Center	San Jacinto & D St	95	70*
30	SF	C St & 7th St	60	71
31	SF	1021 Citrus Street	60	70

Notes:
* = Noise levels presented as L_{eq}
SF = Single-family residence and MF = Multi-family residence
(1) = BNSF and SJBL alignments

Source: STV Incorporated (2002)



CONTINUED ON FIGURE 3.4-4

LEGEND

- PVL ALIGNMENT
- CONNECTING TRACK
- EXISTING STATION
- PROPOSED STATION
- 2002 MONITORING LOCATION
- 2005 MONITORING LOCATION
- 2008/2009 MONITORING LOCATION

Basemap Source: STV Incorporated 10-3-08

0.3 0.15 0 0.3 0.6 Miles

N

Perris Valley Line
RCTC
KLEINFELDER Bright People. Right Solutions.

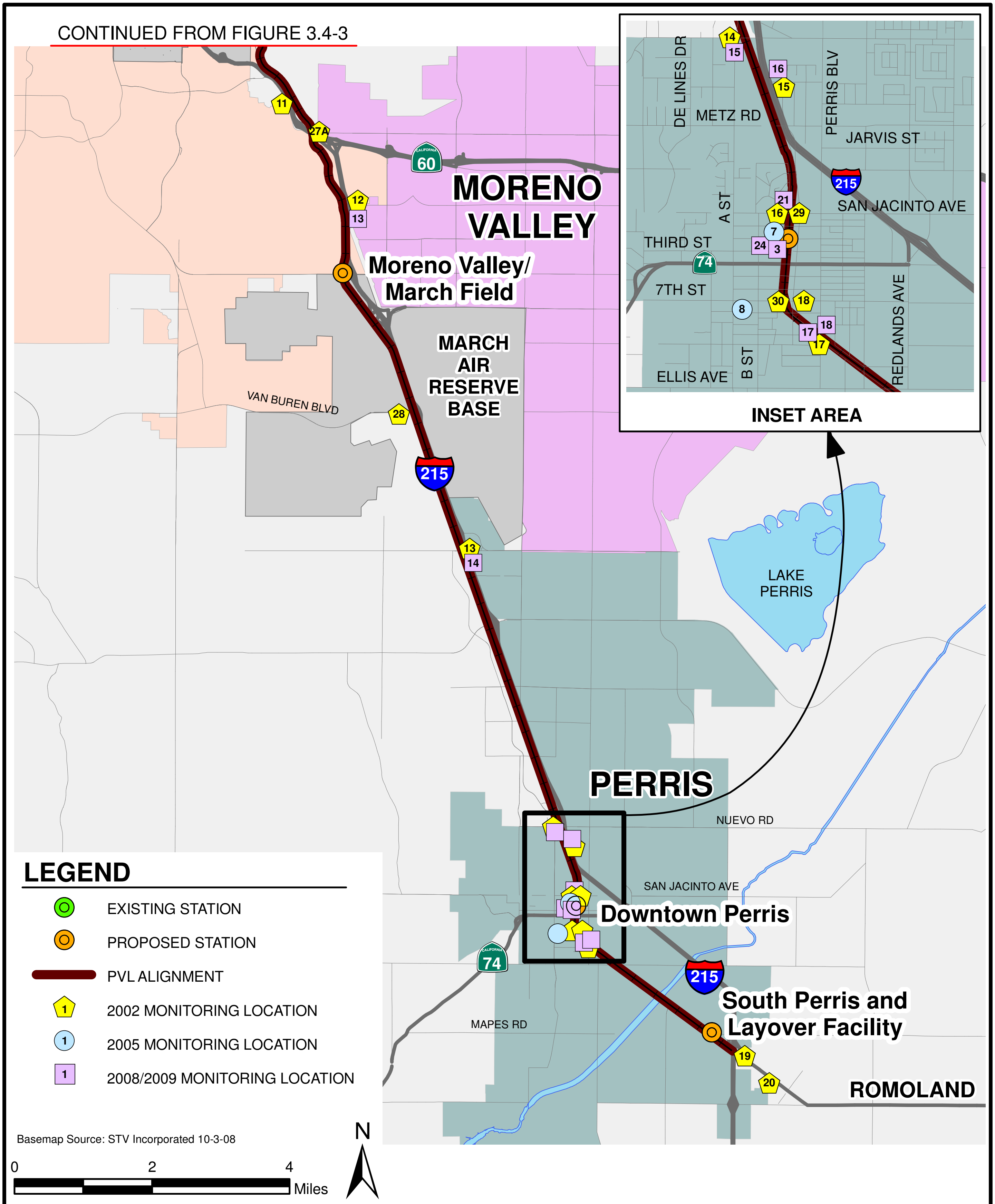
PROJECT NO.	92666
DRAWN:	1/12/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666noise2.MXD

NOISE AND VIBRATION MONITORING LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.4-3



PROJECT NO.	92666
DRAWN:	1/12/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666noise3.MXD

NOISE AND VIBRATION MONITORING LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.4-4

Table 3.4-6
Summary of Noise Measurements (2005)

Site No.	Description	Measure Type(1)	Dist. from Tracks (ft.)	L_{dn}, dBA With Trains	L_{dn}, dBA Without Trains(2)	No. of Trains(3)
1	103 Sir Dames Dr, Riverside	LT	35	63	62	3
2	441 Transit Avenue, Highgrove	LT	35	67	67	3
3	2294 Kentwood/Spruce, Riverside	LT	100	67	59	8
4	518 W. Campus View, Riverside	LT	83	66	57	8
5	232 E. Campus View, Riverside	LT	62	65	49	2
6	396 E. Big Springs Rd., Riverside	LT	90	62	54	2
7	228 C Street, Perris	LT	240	67	67	2
8	81W. 8th Street, Perris	LT	300	--	59	0
9	Church at Spruce & Watkins, Riverside	ST	150	--	61	0
10	Church at Mt. Vernon Crossing, Riverside	ST	50	--	49	1
11	Hyatt Elementary School/E. Manfield Rd., Riverside	ST	50	--	50	1
12	Highland Park off Kentwood, Riverside	ST	50	--	56	0

Notes:
(1) LT = long term (24 hours or more), ST = short term (30 minutes to one hour).
(2) For measurements that included one or more train events, this column shows what the L_{dn} would have been without the train noise. No trains passed during the short term noise measurements.
(3) Total number of trains passing during measurement. Measurement period may be for more than 24 hours.

Source: ATS Consulting (2005)

2008/2009 Measurement Program

The 2008/2009 noise measurement program included measurements of noise sensitive locations previously monitored in 2002 and 2005, in addition to several new locations. Schools along the SJBL alignment were specifically re-monitored and other residential and institutional uses were added to the monitoring program. In general, the results of the 2008/2009 monitoring program were consistent with the existing noise environment during the monitoring programs for 2002 and 2005. There were however, several sites within the area of University of California Riverside (UCR) which tended to exhibit lower noise levels for the 2008/2009 measurement program. The overall results of the measurements are summarized in Table 3.4-7 and monitoring locations mapped on Figure 3.4-3 and Figure 3.4-4.

Table 3.4-7
Noise Monitoring Locations for Detailed Noise Assessment 2009

Site No.	Description	Measure Type(1)	Dist. from Tracks (ft.)	Ldn, dBA
1	518 West Campus View Dr	LT	117	59
2	232 East Campus View Dr	LT	65	56
3	228 C Street	LT	244	70
4	St. George's Episcopal Church @ Spruce & Watkins Drive	ST1	190	57*
5	Terrace Crest Community Baptist Church (12354 Mount Vernon)	ST1	163	52*
6	Hyatt Elementary School (4466 Mount Vernon Ave)	ST1	370	60* 2
7	Highland ~~Park~~ Elementary School (700 Highlander Dr)	ST1	88	54* 2
8	3015 9th Street	ST2	450	69
9	3112 1st Street	LT	210	75
10	1901 Thornton Ave	LT	90	76
11	2970 Watkins Dr	LT	124	66
12	137 Nisbet Way	LT	180	62
13	7005 Old Frontage Rd	ST2	564	62
14	California & Wade Streets	ST2	258	70
15	Nan Sanders Elementary School (1461 N. A Street)	ST1	123	64* 2
16	234 W. Bowen St	ST2	235	59
17	116 State Street	ST2	80	72
18	New Homes on 9th Street in Perris	ST2	300	66 3
19	Old Spaghetti Factory (3191 Mission Inn Avenue)	ST1	280	65*
20	1824 Marlboro Ave	ST2	260	63
21	Senior Citizens Center (146 W. San Jacinto Ave)	ST1	96	59*
22	1027 Citrus St	LT	62	73
23	842 Kentwood Drive	LT	80	63 2, 3
24	St. James Catholic Church/School (269 West 3rd St)	ST1	370	64* 2, 3
25	UCR Day/Childcare (3338 Watkins Dr)	ST1	175	54* 2

Notes:
* Represents an L_{eq} value
(1) LT = long term (24 hours or more), ST1 = short term (30 minutes to one hour), ST2 = short term (measurement adjusted to reflect LT L_{dn}).
(2) Noise monitoring conducted in 2009.
(3) New monitoring site.
Source: STV Incorporated, (2008/2009)

Noise Analysis Methodology

Following is an outline of the approach used to identify potential noise and vibration impacts from the proposed PVL. The approach follows the Detailed Assessment guidelines outlined in the FTA Noise and Vibration Assessment Manual (2006). The steps taken were:

1. Identify representative noise sensitive receptors. Sensitive land uses along the corridor were identified for monitoring and assessment, by first referencing recent aerial photography. Sensitive receptors, such as residential and non-residential buildings including schools, churches and senior centers were then grouped together based on their location relative to the tracks, grade crossings, and other geographic and PVL operational factors that might affect noise levels. Within each grouping, a representative receptor was included in the noise model. Sites closest to the alignment were selected first. If no impacts were predicted at these locations then impacts at locations further from the alignment would be unlikely. If impacts were

predicted for Category 2 properties, the next closest row of properties would be assessed for impact. When impacts were predicted at Category 3 sites, no further assessment was required since the next closest receptors were located too far away from the noise source and their lines of sight to the alignment would be blocked by intervening buildings. These two factors eliminated any potential impact at Category 3 locations located further from the alignment.

2. Determine existing noise levels as described above.

3. Develop noise prediction models. For FTA noise predictions, the major noise components related to the operation of the PVL project are represented in the prediction model which utilizes equations and tables contained in the FTA Manual. They include horn noise and locomotive engine noise. Also included in the model were noise from rail cars and bells at grade crossings. Noise from wheel squeal (near the tight radius curve at the proposed "Citrus Connection") was assessed separately since the operation of the PVL train would include wayside applicators as part of the design plans, which would ~~eliminate~~ significantly reduce noise from wheel squeal for all tight radius curves.

   For horn noise, the key modeling factor is that trains are required by law to blow their horns from 15 to 25 seconds or ¼ mile before a grade crossing. The effect of horn noise increases at properties closest to grade crossings. Locomotive and rail car noise are primarily dependent upon the speed of travel along the tracks. Crossing bells are required to be sounded before any train passes by a grade crossing for at least 30 seconds. The prediction of wheel squeal is dependent upon the length of the curve and the rate of speed that the train is traveling along the curve. The "Citrus Connection" curve is the only proposed new curve for the PVL project and, it also represents the longest tight-radius curve along the entire PVL corridor.

   Reference levels for all of the above described noise components (e.g., horn, locomotive, rail car, crossing bells and wheel squeal) were obtained from the FTA Manual tables. Their combined impact at nearby sensitive properties was then calculated. For potential noise from PVL stations, parking lots and the Layover Facility, the FTA Manual noise screening table was utilized. Because night-time noise is more annoying to humans than day-time noise (e.g., a train horn heard at 3 AM is more annoying than a train horn heard at 1 PM), the FTA prediction formulas applied to the PVL project include an adjustment in the actual noise level to simulate the increased annoyance of night-time activities. Utilizing the adjustments penalty, the noise from project-related night-time activity is effectively increased to account for the increased annoyance level of residents.

   Existing freight operations along the PVL corridor were also considered in the analysis. However, their relevance to the assessment is only in terms of their ~~affect~~ effect on the existing 24-hour monitoring levels shown in the noise monitoring Table 3.4-5, Table 3.4-6 and Table 3.4-7, above. Essentially, existing freight operations increases a community's existing 24-hour Ldn level. As described above in the impact criteria section, this increase in noise level results in a lessening in the amount of noise that a future rail project would be allowed to contribute to a community without resulting in an impact.

4. Estimate future noise levels at the representative receivers. Using the FTA noise model described above, future train-generated noise levels were estimated and compared against the applicable FTA impact thresholds to identify potential noise impacts.

5. Identify noise mitigation. For the proposed PVL project, noise mitigation would be accomplished by two methods, including the construction of noise barriers and the use of building sound insulation. Noise barriers are very effective in eliminating severe and moderate impacts to affected properties; the technique is recognized by FTA as effective, and is used by state agencies and commissions such as RCTC. The length of the barrier is important to its effectiveness so that noise generated beyond the ends of the barrier do not compromise the effectiveness of the barrier at noise-sensitive locations. A solid, impervious wall that is sufficiently high to block the direct view of the noise source will typically reduce community noise levels, at locations within about 200 feet of the track, by five to 15 dBA. At locations where noise barriers are not feasible and/or cannot totally eliminate potential impacts, building sound insulation is recommended for individual residences. Building sound insulation typically involves caulking and sealing gaps in the building envelope, wall insulation and installation of acoustical windows and solid-core doors. Depending on the quality of the original building façade, especially windows and doors, sound insulation treatments can improve the noise reductions from transit noise by 5 to 20 dBA.

   Using the noise methodology described above, future train-generated noise levels were estimated and compared against the applicable FTA impact thresholds to identify potential noise impacts.

3.4.3 Noise Environmental Consequences/Impacts

With regard to the PVL project rail operations, criteria applicable to the assessment of potential project-related noise would be governed by the FTA impact criteria described above. Based on these criteria, Table 3.4-9, Table 3.4-10, and Table 3.4-11 shows the results from Noise and Vibration Technical Report C. The projected noise impacts are summarized below. Table 3.4-9, Table 3.4-10, and Table 3.4-11 characterize the type of impact using the FTA criteria, and identify the proposed mitigation and the number of decibels that the mitigation would reduce noise by.

Trains

By ~~2012~~2014, commuter train operations would consist of twelve total train movements per day with the proposed project. These operations would include four trains leaving South Perris for Riverside (to connect to LA Union Station) in the AM, two trains from South Perris to Riverside in the PM, one train from Riverside to South Perris in the AM, and five trains from Riverside to South Perris in the PM.

Trains are assumed to operate with one diesel locomotive and six to eight passenger cars on rail. The PVL would use welded rail throughout, reducing train-rail noise. Free flow train speeds along the study corridor would range from 25 to approximately 60 mph. FRA and CPUC rules currently require that all trains approaching roadway-rail grade crossings blow their horns for one-quarter of a mile prior to reaching the grade crossing. In addition, as trains pass grade crossings, warning devices are sounded.

Under the FTA methodology, noise impacts are projected at several Category 2 land uses (residences and buildings where people normally sleep) located along the SJBL in Riverside, north of the UCR campus. The majority of the predicted impacts would be a result of the train horns being sounded by trains scheduled to pass through areas with sensitive land uses prior to 7 AM, the demarcation between nighttime and daytime in the calculation of Ldn. Noise from grade crossing warning devices would only affect homes near the intersection and would be minimal in comparison to the sounding of train horns. Noise impacts are projected at a total of 83 residential locations all of which are located in the UCR area. Impacts at 18 of the total 83 residential locations would be characterized as severe. Table 3.4-9 and Table 3.4-10 present the findings of the noise analysis and its characterization for Category 2 land uses, along the length of the SJBL.

Noise impacts are also predicted for three Category 3 buildings. In the UCR area of Riverside, these impact locations would include the school gymnasium of ~~the Hyatt~~Highland Elementary School, St. George's Episcopal Church, and Crest Community Baptist Church. None of these impacts would be severe. No impacts on Category 3 buildings were predicted in Perris. Table 3.4-11 presents the land use Category 3 noise impact predictions.

Stations and Parking Lots

Noise due to the operation of a train station is primarily associated with automobile traffic entering and exiting the station drop-off and parking areas. The noise analysis considered the parking lots at each of the four proposed opening year stations. The proposed station parking lots would range in size from approximately 440 to 880 cars. However, all noise sensitive receptors are located beyond the FTA screening distances (as shown in Appendix C of Noise and Vibration Technical Report C) for all proposed stations and parking lots. This is significant since screening distances are conservatively based on the lowest FTA threshold of impact as indicated in Chapter 4 of the FTA Manual. As a result, sensitive receptors located beyond this distance would not experience noise disturbance from station or parking lot operations (see Section 4.2 of the FTA Manual). Noise from station emergency generators would also not result in any impact from stations as they are not considered to be a normal operating component of the project and would only be used in the event of an emergency (e.g., a power outage).

Layover Facility

Trains in the vicinity of the Layover Facility in South Perris would be traveling at low rates of speed and therefore are not expected to be significant sources of noise. In addition, the proposed Layover Facility (for overnight storage and light, routine maintenance of the trains) is located substantially further away from noise sensitive resources than 1,000 feet, the FTA noise screening distance for noise sensitive land uses with respect to noise from a Layover Facility. As a result, noise impacts related to the Layover Facility are not expected.

Wheel Squeal

In addition to noise from train horns, locomotives and crossing bells, wheel squeal on tight radius curves (<10 times the SCRRA/Metrolink locomotive wheel base or 900 feet) can contribute to community noise levels. Table 3.4-8 lists all short radius curves along the proposed PVL alignment. As wheel squeal noise can be significant, wayside applicators will be installed as part of project implementation in all areas of the corridor with short radius curves. Wayside applicators apply a friction control material to the top of the rail and the gage face to reduce the metal to metal friction that causes wheel squeal. According to the Transit Cooperative Research Program – "Wheel/Rail Noise Control Manual" (Transportation Research Board, 1997), a report which was sponsored by the FTA, the use of a petroleum lubricant would reduce squeal while the use of a water lubricant would eliminate squeal. These steps taken to reduce wheel squeal from the commuter rail operations would also reduce the existing wheel squeal from BNSF freight trains, which do and would continue to operate along the SJBL.

Table 3.4-8
Summary of Short-Radius Curve Locations

Curve Number	Description	Residential Area
P-1A	Citrus Connection	Yes
P-3B	Near East Campus Drive	Yes
P-3D	Box Springs Area	Yes
P-4A	Box Springs Area	Yes
P-4C	Box Springs Area	Yes
P-4D	Box Springs Area	Yes
P-4E	Box Springs Area	Yes
P-4F	Box Springs Area	Yes
P-4G	Near Watkins Drive and Poarch Road	No
P-6C	Near the Intersection of I-60 and I-215	No
P-18A	Perris	Yes
Source: STV Incorporated, based on PVL 30% Engineering Drawings		

The only location at which the construction of new PVL rail would result in a short radius curve would be the "Citrus Connection" (P-1A). The Citrus Connection curve is also the longest curve along the entire extent of the PVL alignment. This length, along with the required slower train speeds along the curve, would increase the wheel squeal noise exposure time. Therefore, as requested by the FTA, an analysis of wheel squeal noise was conducted at this location. The analysis of the noise contribution from wheel squeal was conservatively performed for nearby sensitive residences. A reference SEL of 136 dBA used in the wheel squeal prediction equation was obtained from the FTA Manual, Table 6-7. The resulting analysis indicated that the wheel squeal noise component would result in impacts to residences in the area of Transit Avenue. Predicted project noise levels would surpass the FTA noise impact criteria by one dB. However, as mentioned above, it is important to note that as part of the PVL project, RCTC will include wayside applicators on all short radius curves. These measures would successfully reduce the significance of wheel squeal noise on all segments of the PVL alignment, including the "Citrus Connection" area. As a result, with the wheel squeal noise component successfully reduced, no noise impacts would result at residences along Transit Avenue.

Table 3.4-9
Detailed Noise Impact Assessment Category 2 Land Uses for Riverside

Description[1]	Dist. to Track CL, ft	Land Use	No. Dwelling Units	Track Side[2]	Horn	Exist Ldn, dBA	Speed, mph		Predicted Ldn, dBA	Impact Threshold		Impacts			
													No. Dwelling Units		
							IB	OB		Impact	Severe	Type[3]	Impact	Severe	Mitigation[4]/ Barrier Reduction
RIVERSIDE															
1st Street	210	SF	4	OB	IB	75	45	45	59.9	65.0	73.2	None			
Thornton Avenue	90	SF	17	OB	OB	76	45	45	58.6	65.0	74.0	None			
Transit Avenue	141	SF	12	IB	OB	67	30	30	63.2	62.2	67.5	Moderate			
Citrus Street 1	62	SF	1	IB	OB	73	30	30	66.7	65.0	71.7	Moderate	1		SI
Citrus Street 2	102	SF	2	IB	OB	73	30	30	60.9	65.0	71.7	None			
Kentwood 1	170	SF	3	IB	OB	67	60	60	54.8	62.2	67.5	None			
Kentwood 2	186	SF	2	IB	OB	67	60	60	54.9	62.2	67.5	None			
Kentwood 3	80	SF	7	IB	IB	63	60	60	63.7	59.6	65.0	Moderate	14		NB / 7dB
Kentwood 4	80	SF	6	IB	IB	63	60	60	62.1	59.6	65.0	Moderate	6		NB / 4dB
Kentwood 5	80	SF	1	IB	Both	63	60	60	65.1	59.6	65.0	Severe		1	SI
Kentwood 6	150	SF	1	IB	OB	67	60	60	62.0	62.2	67.5	None			
Kentwood 7	186	SF	2	IB	OB	67	60	60	59.3	62.2	67.5	None			
Kentwood 8	160	SF	1	IB	Both	67	60	60	62.2	62.2	67.5	Moderate	1		SI
Watkins 1	124	MF	3	OB	IB	66	60	60	60.8	61.5	66.8	None			
Watkins 2	140	MF	6	OB	IB	66	60	60	59.7	61.5	66.8	None			
Watkins 3	140	MF	7	OB	NO	66	60	60	53.9	61.5	66.8	None			
Watkins 4	140	MF	10	OB	OB	66	60	60	55.3	61.5	66.8	None			
Watkins 5	124	MF	9	OB	OB	66	60	60	56.0	61.5	66.8	None			
Watkins 6	124	MF	6	OB	IB	66	60	60	60.2	61.5	66.8	None			
Highlander 1	127	SF	8	IB	OB	59	30	30	57.4	57.2	62.9	Moderate	8		NB / 3dB
Highlander 2	127	SF	1	IB	Both	59	30	30	63.2	57.2	62.9	Severe		1	SI

Table 3.4-9 (cont'd)
Detailed Noise Impact Assessment Category 2 Land Uses for Riverside

Description[(1)]	Dist. to Track CL, ft	Land Use	No. Dwelling Units	Track Side[(2)]	Horn	Exist Ldn, dBA	Speed, mph		Predicted Ldn, dBA	Impact Threshold		Impacts No. Dwelling Units			
							IB	OB		Impact	Severe	Type[(3)]	Impact	Severe	Mitigation[(4)]/ Barrier Reduction
Highlander 3	152	SF	1	IB	Both	59	30	30	56.7	57.2	62.9	None	1		
W. Campus View 1	127	SF	6	IB	IB	59	30	30	61.9	57.2	62.9	Moderate	6		NB / 5dB
W. Campus View 2	117	SF	7	IB	NO	59	30	30	55.4	57.2	62.9	None			
W. Campus View 3	125	SF	9	IB	OB	62	30	30	61.4	58.9	64.5	Moderate	9		NB / 6dB
W. Campus View 4	104	SF	8	IB	OB	59	30	30	60.3	57.2	62.9	Moderate	8		NB /5dB
W. Campus View 5	104	SF	6	IB	NO	59	30	30	55.9	57.2	62.9	None			
Nisbet Street 1	137	SF	6	OB	OB	62	30	30	60.9	58.9	64.5	Moderate	6		NB / 3dB
Nisbet Street 2	137	SF	5	OB	OB	62	30	30	60.8	58.9	64.5	Moderate	5		NB / 3dB
Mt. Vernon 1	110	SF	1	OB	OB	62	30	30	65.0	58.9	64.5	Severe		1	SI
Shady Grove	356	SF	11	IB	OB	62	30	30	56.8	58.9	64.5	None			
E. Campus View 1	80	SF	4	IB	IB	56	25	25	65.3	55.7	61.6	Severe		4	NB / 11dB
E. Campus View 2	65	SF	4	IB	IB	62	25	25	67.9	58.9	64.5	Severe		4	NB[(5)] / 10dB
E. Campus View 3	65	SF	4	IB	IB	56	25	25	66.8	55.7	61.6	Severe		7	NB[(6)] / 13dB
Big Springs	120	SF	4	OB	No	62	30	30	57.3	58.9	64.5	None			
Quail and Swain	140	SF	5	OB	No	62	30	30	56.7	58.9	64.5	None			
Masters Avenue	170	SF	4	OB	No	62	30	30	55.8	58.9	64.5	None			
E. Manfield Street	130	SF	3	OB	No	62	30	30	57.0	58.9	64.5	None			
Total, SJBL, Riverside													**65**	**18**	

Notes:
(1) See Appendix A of the Noise and Vibration Technical Report to this SEA for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria
(4) NB= Noise Barrier, SI = Sound Insulation
(5) Home would require mitigation at this location (see Mitigation Measure NV-2).
(6) Includes three moderately impacted second row buildings.

Source: STV Incorporated (2009)

Table 3.4-10
Detailed Noise Impact Assessment Category 2 Land Uses for Perris

Description[1]	Dist. To Track CL, ft	Land Use	No. Dwelling Units	Track Side[2]	Horn	Exist Ldn, dBA	Speed, mph		Predicted Ldn, dBA	Impact Threshold		Impacts No. Dwelling Units			
							IB	OB		Impact	Severe	Type[3]	Impact	Severe	Mitigation[4]/ Barrier Reduction
PERRIS															
C Street	220	SF	19	OB	Both	70	46	46	61.8	64.4	69.5	None			
10th Street	120	SF	1	OB	Both	72	30	30	61.2	65.0	70.9	None			
State Street	80	SF	1	OB	Both	72	30	30	63.3	65.0	70.9	None			
9th Street	208	SF	3	IB	Both	66	30	30	53.7	61.5	66.8	None			
Case Road	130	MF	12	OB	IB	72	30	30	61.7	65.0	70.9	None			
Total, SJBL, Perris													**0**	**0**	

Notes:
(1) See Appendix A of the Noise and Vibration Technical Report to this SEA for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria
(4) NB= Noise Barrier, SI = Sound Insulation

Source: STV Incorporated (2009)

Table 3.4-11
Detailed Noise Impact Assessment Category 3 Land Uses

Description	Dist. To Track CL, ft	Track Side(1)	Horn	Exist Leq,(2) dBA	Speed, mph		Predict Leq, dBA	Impact Threshold		Impact Type3	Mitigation Type(4)/Barrier Reduction
					IB	OB		Impact	Severe		
St George's Episcopal Church	190	OB	IB	57	60	60	61.4	61.2	67.0	Moderate	SI
UCR Day Care	175	OB	IB	54	30	30	57.1	59.9	65.8	None	
Highland Elementary School	88	IB	IB	52	~~30~~60	~~30~~60	60.5	59.9	65.8	Moderate	NB / 3dB
Crest Community Baptist Church	163	IB	OB	52	30	30	63.3	59.1	65.1	Moderate	NB / 6dB
Mt Vernon Day Care	180	OB	IB	52	25	25	58.7	59.1	65.1	None	
Hyatt Elementary School	370	OB	No	60	35	35	58.1	62.8	68.4	None	
Nan Sanders Elementary School	123	OB	No	64	60	60	55.6	65.2	70.6	None	
Senior Citizens Center	96	IB	OB	59	44	44	60.2	62.2	67.9	None	
St. James School	370	OB	Both	64	46	46	56.2	65.2	70.6	None	

Notes:
(1) See the Noise and Vibration Technical Report to this SEA for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria
(4) NB= Noise Barrier, SI = Sound Insulation

Source: STV Incorporated (2009)

Summary of Results

Utilizing FTA noise impact criteria, the results of the noise study indicate that both moderate and severe noise impacts would occur at several locations along the proposed PVL corridor. For the 2012 operational year, moderate impacts were predicted at 83 separate Category 2 locations along the alignment. Of these 83 impact locations, 18 were predicted to be severe. The predicted noise impacts were located in the UCR area. Noise predictions at Category 3 locations revealed moderate impacts at three locations which included St. George's Episcopal Church, Crest Community Baptist Church, and ~~Hyatt~~Highland Elementary School.

As a result of the noise prediction analysis, an assessment of measures that would mitigate the predicted noise impacts was conducted. The identified mitigation measures (noise barriers, sound insulation) which would eliminate all predicted noise impacts at noise sensitive properties are also shown in Table 3.4-9, 3.4-10 and 3.4-11 above (Mitigation Measures NV-1 and NV-2).

Construction Period Noise Impacts

The construction noise assessment indicates that ~~Site-related~~ construction activities would not result in any significant noise impacts at any nearby noise-sensitive receptors. The conclusions of the construction noise assessment are based on the use of the FTA construction noise criteria and they apply to both day- and night-time construction activities. While no significant impacts would be predicted to occur, construction activities may result in ~~occasional and sporadic~~ temporary, short-term increases in noise levels, not unlike ~~in noise-sensitive areas adjoining the project alignment. Many of these site-related construction activities needed to implement the proposed project are~~ those typical of ~~those that occur for~~common street and utility projects. However, given the linear configuration of the construction corridor, only small area segments would likely experience construction noise at any given time. Once grade crossing improvements along with the excavation and grading of the track base are completed, specialized track equipment would move continuously along the alignment constructing the new track. The export of soils from the project site may result in increased noise levels along roadways in the immediate project area. However, because the amount of exported soils from each location along the PVL alignment is finite, the site vehicular access would change frequently as construction moves along the alignment. Therefore, any resulting noise increase would be temporary since no single roadway segment would be affected for more than a few weeks. According to the FTA Manual, this would not constitute a long period of time for a construction-related activity and, thus, would not result in any impact. With respect to noise from the construction of the stations, only the proposed Downtown Perris Station would be located nearby noise sensitive receptors; however, station construction would only last approximately two months. ~~Some night-time work may also have to occur, such as track realignment. This would require prior approval by the locality in which the night-time activity is to take place. With respect to noise from the construction of the stations, only the proposed Downtown Perris Station would be located nearby noise sensitive receptors; however, station construction would only last approximately two months.~~ Any potential i~~mpacts~~ increase in noise levels would be temporary in nature and would generally only occur between about 6 AM and 7 PM, Monday through Friday. The exact hours when project construction would be allowed are restricted to the hours described in the local construction noise policies above for the individual localities. For all construction activities, standard construction noise control measures would be required to reduce the likelihood of any temporary noise increases.

As mentioned above, some night-time work may also have to occur, such as track realignment. Because local ordinances typically allow only day-time construction, this would require prior approval by the locality in which the night-time activity is to take place.

Although the overall length of construction for the entire PVL project would be approximately 18 months, disturbances at individual receptor locations would not last for more than several months. As mentioned above, any potential construction noise impacts on schools and churches would be less than significant since project construction noise levels would not surpass the FTA construction noise criteria levels; however, both sporadic and temporary increases in construction noise above local construction noise ordinances levels may occur. Any temporary increases would be based on potential occurrences of atypical events given the inconsistent and transitory nature of some construction activities and equipment usage. Consequently, the contractor would be required to use standard construction noise control measures such as temporary construction noise barriers, low noise emission equipment, and the use of acoustic enclosures for particularly noisy equipment to reduce the likelihood of any increases in construction noise above the local noise ordinance maximum levels. The longest sustained construction period near ~~these~~ sensitive receptors would likely result from station construction and, as mentioned above, would last approximately two months. However, because of the relative small scale of a typical rail station, the use of heavy construction equipment would only occur during a short segment of that two month period. According to the PVL Construction Staging Plan, some nighttime construction is scheduled to occur specifically for new track layout. Because local codes allow construction only during day-time hours, any project-related night-time construction activity would require the project to obtain from the municipality written consent for an exemption, or variance to these codes.

For mobile construction activities, the delivery of construction materials, such as the rail, rail ties, ballast, and specialized track equipment, would be accomplished using the existing rail rather than being delivered by truck. Also, staging yards would be located strategically so as to limit the travel time for construction crews. These processes would serve to limit the exposure radius of traffic-related construction noise in sensitive areas.

The construction activity that would create the most noise and vibration is pile driving associated with the San Jacinto River bridge replacement~~s~~ which is ~~near~~ adjacent to the proposed~~South Perris~~ Layover Facility~~, around the San Jacinto River~~. However, as there are no noise sensitive receptors ~~locations~~ located within approximately one mile of ~~nearby~~ the proposed Layover Facility and the pile driving sites, construction-related noise impacts would not occur. In addition, pile driving would be temporary in nature, and any site specific pile driving would likely be completed in under a week.

Other locations along the alignment would also be potentially impacted by construction noise. To determine whether construction of the proposed PVL project would result in any noise impacts to sensitive receptors at these locations, an FTA general assessment procedure for construction noise was conducted for a representative residential location at 228 C Street in Perris. This location was chosen because it would be representative of a property which would be affected by typical track laying construction represented by activities such as culvert modifications and embankment work as well as track and road crossings construction. In addition, due to the proposed Perris Station, it would also be affected by construction noise from station and parking elements, which include earthwork, utility work and landscaping among others.

As a result, based on construction noise projections shown in Noise and Vibration Technical Report C, the combined noise level for two of the noisiest pieces of construction equipment would result in a construction noise level of 79 dBA at the property line of the residential home. This would be below the FTA construction noise criteria described in Chapter 12 of the FTA Manual. It would also be below the 80 dB noise level set by Section 7.34.060 of the Perris General Plan. Therefore, although the total project construction period is estimated to last approximately 18 months, because the FTA construction noise criteria level for both day- and night-time construction would not be surpassed, noise impacts due to construction ~~noise~~ activities are not expected and would be less than significant.

Subsequently, although the total construction period is estimated to last approximately 18 months, not all activities during that time would be substantive sources of noise. Therefore, because of the temporary and episodic nature of potential noise increases, construction activities would not result in significant noise impacts under NEPA.

3.4.4 Noise Mitigation Measures

The locations where noise impacts are predicted to occur, and at which mitigation would be needed to reduce noise levels, have been determined through utilization of the FTA Detailed Assessment methodology. Table 3.4-12 identifies the recommended noise barrier locations and heights for each area where noise impacts were predicted. The ~~number of decibels by which~~reduction in sound levels (decibels) provided by the noise barriers would reduce predicted impacts, ~~are~~as shown in Tables 3.4-9, 3.4-10 and 3.4-11. Accordingly, the mitigation imposed below will eliminate predicted moderate and severe impacts and reduce noise levels to a less than significant level:

Noise barrier heights were calculated based on the predicted sound level in the area, local terrain and the amount by which the FTA impact thresholds were exceeded. The barriers were designed so as to reduce the level of noise such that where an affected property would be exposed, there will be no significant noise impact predicted with the inclusion of the barrier. Where noise barriers would not be completely effective at reducing noise levels to less than significant levels, additional building sound insulation was evaluated and recommended at eight individual properties so that interior noise levels at those eight properties would also be reduced to less than significant.

- **NV-1**: As shown on Figure 3.4-5, noise barriers shall be ~~provided~~ constructed at the following locations (based on 30% Design Drawings):
    - NB 1: 10’ high and 530’ long between Sta. 264+00 and Sta. 269+30
    - NB 2: 13’ high and 570’ long between Sta. 269+30 and Sta. 275+00
    - NB 3: 9’ high and 680’ long between Sta. 283+00 and Sta. 289+40
    - NB 4: 12’ high and 600’ long between Sta. 289+40 and Sta. 295+40
    - NB 5: 8’ high and 530’ long between Sta. 297+70 and Sta. 303+00

- NB 6: 8' high and 800' long between Sta. 303+00 and Sta. 311+00
- NB 7: 10' high and ~~700~~800' long between Sta. 322+00 and Sta. 330+00
- NB 8: 11' high and 320' long between Sta. 331+00 and Sta. 334+20
- NB 9: 13' high and 950' long between Sta. 323+40 and Sta. 332+40
- NB 10: 13' high and 250' long between Sta. 332+80 and Sta. 334+80
- NB 11: 9' high and 310' long between Sta. 336+00 and Sta. 339+10
- NB 12: 9' high and 310' long between Sta. 339+10 and Sta. 342+20
- NB 13: 13' high and 380' long between Sta. 342+20 and Sta. 346+00

- **NV-2:** Based on the topography and engineering constraints at seven residential locations and St. George's Episcopal Church (eight properties total), the use of noise barriers will not provide adequate noise reduction. Improving the sound insulation of these properties by replacing windows facing the tracks with new sound-rated windows, as well as caulking and sealing gaps in the building envelope, eliminating operable windows and installing specially designed solid-core doors, will reduce noise to below the FTA impact criteria, and to less than significant levels. Sound insulation for eight properties shall be provided at the following locations:

  - Northeast corner of the grade crossing at West Blaine Street (619 West Blaine Street)
  - Northeast corner of the grade crossing at Mount Vernon Avenue (116 East Campus View Drive)
  - Southwest corner of the grade crossing at Mount Vernon Avenue (first home on Mount Vernon Avenue)
  - Northeast corner of the grade crossing at Citrus Street (1027 Citrus Street)
  - Northeast corner of the grade crossing at Spruce Street (first two homes on Kentwood Drive)
  - Southeast corner of the grade crossing at Spruce Street (first home on Glenhill Drive)
  - St. George's Episcopal Church

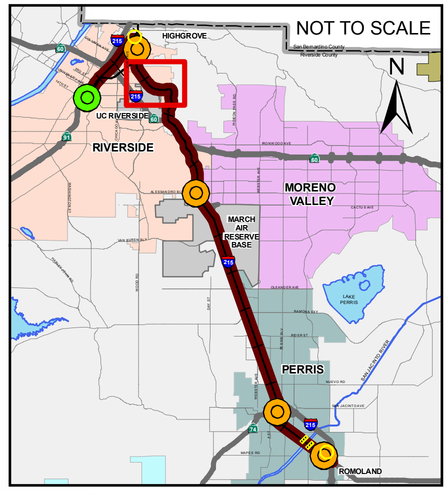
Table 3.4-12
Proposed Noise Barrier Locations

Location		Max Thresh. Exceed, dB(1)	Civil Stations*		Length, ft	Height, ft(2)	Comment
			Start	End			
NB 1.	Watkins Drive (south of Spruce Street, east side of alignment)	4	264+00	269+30	530	10	
NB 2.	Watkins Drive (south of Spruce Street, east side of alignment)	3	269+30	275+00	570	13	
NB 3.	Highland Elementary School (north of W. Blaine Street, east side of alignment)	<1	283+00	289+40	680	9	Includes 40' of barrier segment perpendicular to track.
NB 4.	W. Blaine Street (north of Blaine Street, east side of alignment)	<1	289+40	295+40	600	12	
NB 5.	W. Blaine Street (south of Blaine Street, east side of alignment)	5	297+70	303+00	530	8	
NB 6.	W. Blaine Street (south of Blaine Street, east side of alignment)	3	303+00	311+00	800	8	
NB 7.	Mt. Vernon Avenue (west of Mt. Vernon Avenue, north side of alignment)	3	322+00	330+00	~~700~~800	10	
NB 8.	Crest Community Baptist Church @ Mt. Vernon Avenue	4	331+00	334+20	320	11	
NB 9.	Nisbet Way (west of Mt. Vernon Avenue, south of alignment)	2	323+40	332+40	950	13	Includes 50' of barrier segment perpendicular to track.
NB 10.	Nisbet Way (west of Mt. Vernon Avenue, south of alignment)	2	332+80	334+80	250	13	Includes 50' of barrier segment perpendicular to track.
NB 11.	East Campus View (East of Mt. Vernon Avenue, north of alignment)	9	336+00	339+10	310	9	For residences at elevations above the rail elevation, the noise barrier will be located along the ROW.
NB 12.	East Campus View (East of Mt. Vernon Avenue, north of alignment)	11	339+10	342+20	310	9	For residences at elevations above the rail elevation, the noise barrier will be located along the ROW.
NB 13.	East Campus View (East of Mt. Vernon Avenue, north of alignment)	10	342+20	346+00	380	13	For residences at elevations above the rail elevation, the noise barrier will be located along the ROW.

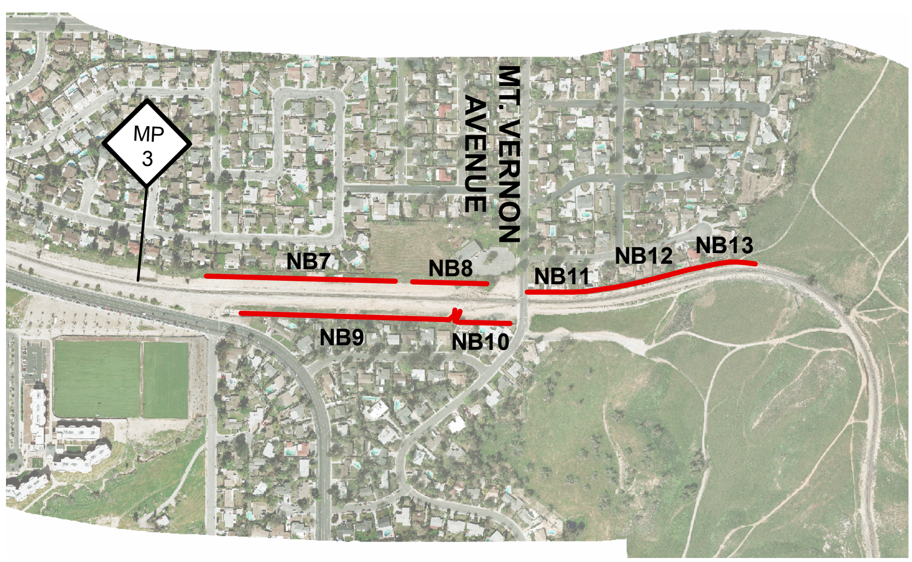
Notes: (1) Maximum amount that the predicted levels exceed the applicable noise impact threshold.
(2) Noise barrier heights are relative to top of ROW boundary elevation. Noise barriers for mitigation may be modified to account for specific field conditions and PVL final design features.
* Stationing is based upon the 30% engineering drawings; final stationing will be determined during final design and linked to final design drawings.

Source: STV Incorporated, 2010

This Page Intentionally Left Blank



KEY MAP FOR INSET AREAS



LEGEND

NB1 — APPROXIMATE NOISE BARRIER LOCATION (FOR GRAPHICAL PURPOSES ONLY)

MILE POST

N

0 1,000 2,000
Feet

PROJECT NO.	92666	**NOISE BARRIER LOCATIONS**	FIGURE
DRAWN:	6/11/10		**3.4-5**
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666noise3.MXD			

II. Vibration Fundamentals

Vibration is a type of movement that rapidly fluctuates back and forth, potentially causing "feelable" and audible sensations for humans. Ground-borne vibration (GBV) is usually caused by trains and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment. With trains, GBV is a result of the interaction of wheels and rails, which can cause windows, pictures on walls, or items on shelves to rattle. A rumbling sound can also accompany GBV, known as ground-borne noise (GBN) or noise that radiates from the motion of building surfaces.

Although GBV effects usually go unnoticed outdoors, it can be a significant annoyance to people inside buildings. Though GBV is almost never of sufficient magnitude to cause even minor cosmetic damage to buildings, the primary consideration is whether GBV would be intrusive to building occupants or interfere with interior activities or machinery.

GBV is often measured by the descriptor "vibration decibels", abbreviated in this document as VdB. The vibration decibel level in residential areas is usually 50VdB or lower, though humans usually begin to perceive vibration effects once the vibration level reaches 65 VdB (FTA, 2006). Beyond 80 VdB, vibration levels are often considered unacceptable by humans. GBN is measured in dBA. Figure 3.4-6 shows examples of typical vibration levels, sources, and human responses.

3.4.5 Vibration Regulatory Setting

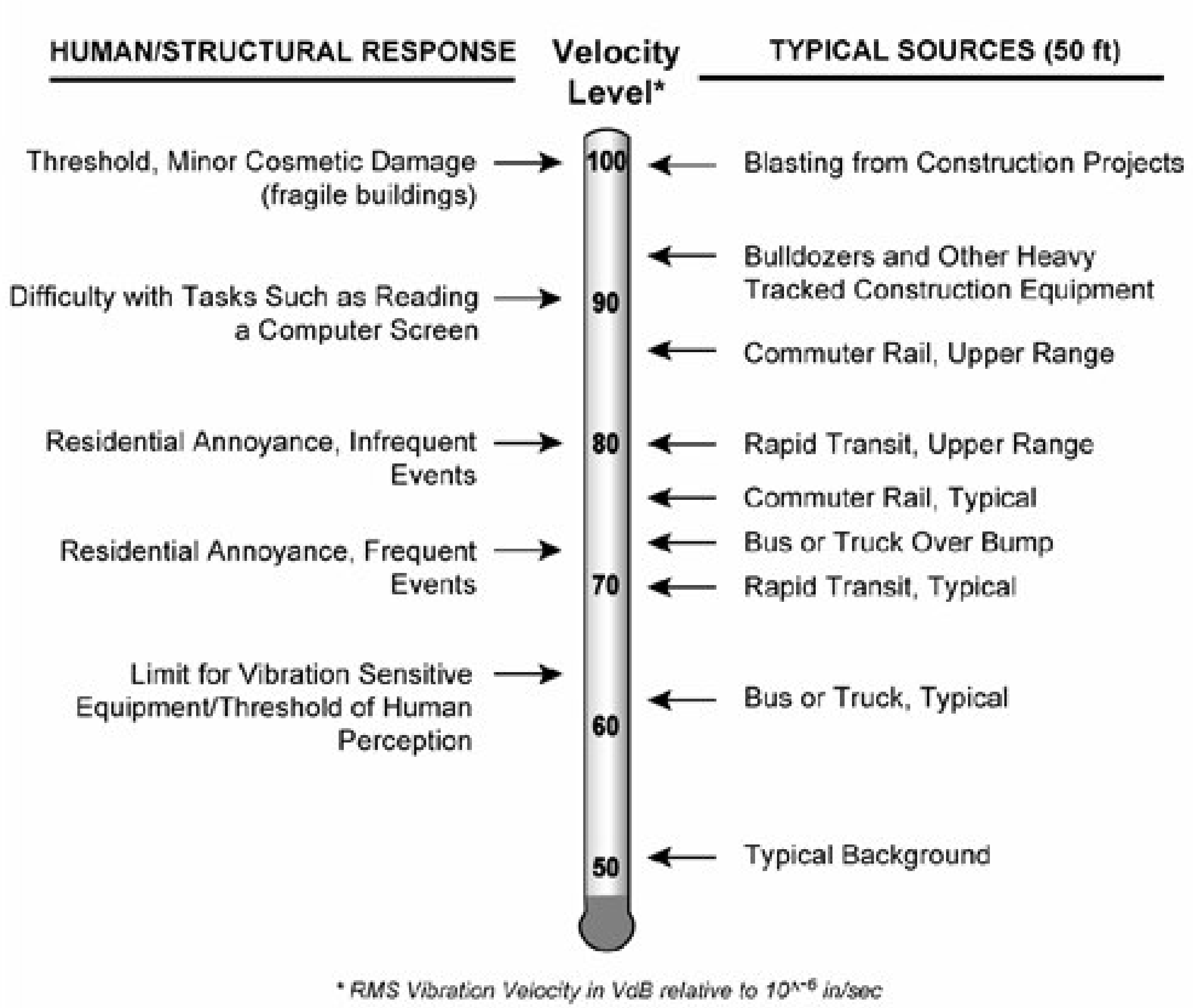
FTA Vibration Impact Criteria

Like the noise impact criteria, the FTA vibration impact criteria are based on the three land use categories, although the categories are somewhat different. One important difference is that outdoor spaces are not included in Category 3 for vibration. This is because human annoyance from GBV requires the interaction of the ground vibration with a building structure. Consequently, the criteria apply to indoor spaces only, and there are no vibration impact thresholds for outdoor spaces such as parks.

Although there has been relatively little research into human and building response to GBV, there is substantial experience with vibration from rail systems. In general, this collective experience indicates that:

- The threshold for human perception is approximately 65 VdB. Vibration levels in the range of 70 to 75 VdB are often noticeable but acceptable. Beyond 80 VdB, vibration levels are often considered unacceptable.
- Human response to vibration is more closely related to the maximum vibration level than to the number of vibration causing events. The FTA guidelines do however have different standards for "frequent" vs. "infrequent" events.
- For human annoyance, there is a relationship between the number of daily events and the degree of annoyance caused by GBV. FTA guidance includes an eight VdB higher impact threshold if there are fewer than 70 events per day. This higher threshold is applicable to the PVL project.

This Page Intentionally Left Blank



SOURCE:

FTA MANUAL FOR TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT, FTA, MAY 2006

PROJECT NO.	92666	**TYPICAL VIBRATION LEVELS**	FIGURE
DRAWN:	1/12/10		
DRAWN BY:	JP		3.4-6
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666dia1.MXD			

Vibration impact criteria assume that there is a relationship between the number of daily events and the degree of annoyance caused by GBV and GBN (when there are fewer vibration events each day, it takes higher vibration levels to evoke the same community response). This assumption is accounted for in the vibration impact criteria by setting different allowable VdB and dBA levels for proposed projects with varying numbers of vibration events - "Frequent Events" are defined as more than 70 events per day, "Occasional Events" range between 30 and 70 events per day, and "Infrequent Events" are fewer than 30 events per day.

The FTA vibration impact criteria are shown in Table 3.4-13. The VdB and dBA levels shown are the vibration limits allowed for each category.

Table 3.4-13
Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for General Assessment

Land Use Category	GBV Impact Levels (VdB re: 1 micro-inch / sec)			GBN Impact Levels (dB re: 20 micro Pascals/ sec)		
	Frequent Events ~~1~~(1)	Occasional Events ~~2~~(2)	Infrequent Events ~~3~~(3)	Frequent Events ~~2~~(1)	Occasional Events ~~3~~(2)	Infrequent Events 4(3)
Category 1: Buildings where vibration would interfere with interior operations	65 VdB	65 VdB	65 VdB	N/A 4(4)	N/A 4(4)	N/A 4(4)
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primary daytime use	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Notes:
(1) "Frequent Events" is defined as more than 70 vibration events per day.
(2) "Occasional Events" is defined as between 30 and 70 vibration events per day.
(3) "Infrequent Events" is defined as less than 30 vibration events per day.
(4) N/A means "not applicable". Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: FTA *Transit Noise and Vibration Impact Assessment* (2006)

These FTA vibration criteria do not specifically account for existing sources of vibration. The existing environment may currently cause a significant number of perceptible GBV or GBN events, regardless of the components of a proposed project. Because of this, the FTA established several separate criteria for existing vibration sources and the methods for addressing each, three of which are described below:

- Infrequently-used rail corridor (corridors with fewer than five trains per day). Use the general vibration criteria (Table 3.4-13).

- Moderately-used rail corridor (corridors with five to twelve trains per day). If existing vibration exceeds the general vibration criteria and if estimated vibration levels are at least 5

VdB less than existing vibration, there would be no impact from the proposed project. For other situations, use the general vibration criteria. Heavily-used rail corridor (corridors with more than twelve trains per day). If existing vibration exceeds the general vibration criteria and if the proposed project would double the number of vibration events, the project would cause additional impact. If estimated vibration levels for the proposed project would be 3 VdB or less than existing vibration, there would be no impact.

3.4.6 Vibration Affected Environment

The proposed PVL project would be located within an existing transit corridor that currently causes GBV and GBN. The vibration environmental conditions for each segment are described below:

- The BNSF alignment is a heavily used rail corridor with 80 to 100 trains traveling along it during a typical 24-hour period. Vibration along the BNSF alignment is dominated by the existing train activity. Heavy-duty vehicle traffic also contributes to “feelable” vibration in the area.
- The SJBL alignment is an infrequently used rail corridor with about two freight trains per day. Vibration along the SJBL is dominated by the existing train activity. In addition, heavy-duty vehicle traffic along I-215 and other local roads contribute to “feelable” vibration in the area.

Vibration Measurement Program

To assess the potential vibration impacts as a result of the PVL project, vibration measurements were conducted at 12 selected sensitive receptors in 2005. A tabulation of these monitored locations is provided in Table 3.4-14 and monitoring locations are mapped on Figure 3.4-3 and Figure 3.4-4.

Table 3.4-14
Summary of Vibration Measurements (2005)

Site No.	Description	Measure Type (1)	Dist. From Tracks (ft.)	Avg. Train Vib., VdB(2)	No. of Trains(3)
1	103 Sir Dames Dr, Riverside	LT	50	82	3
2	441 Transit Avenue, Highgrove	LT	50	72	3
3	2294 Kentwood/Spruce, Riverside	LT	50	73	8
4	518 W. Campus View, Riverside	LT	50	72	8
5	232 E. Campus View, Riverside	LT	50	70	2
6	396 E. Big Springs Rd., Riverside	LT	50	58	2
7	228 C Street, Perris	LT	50	--	2
8	81W. 8th Street, Perris	LT	50	--	0
9	Church at Spruce & Watkins, Riverside	ST	50	--	0
10	Church at Mt. Vernon Crossing, Riverside	ST	50	78	1
11	Hyatt Elementary School/E. Manfield Rd., Riverside	ST	50	68	1
12	Highland Park off Kentwood, Riverside	ST	50	--	0

Notes:
(1) LT = long term (24 hours or more), ST = short term (30 minutes to one hour).
(2) Average train vibration level when locomotives passed measurement position.
(3) Total number of trains passing measurement position during measurements. Measurement period may be for more than 24 hours.
Source: ATS Consulting (2005)

There has been no major development within the PVL project area since 2005, and therefore no significant increase in traffic, and the volume and type of freight service on the BNSF and SJBL alignments has remained relatively constant. Since the dominant source for ambient vibration levels was and still is the existing freight service on these alignments, the 2005 data is representative of 2009 ambient noise levels.

The 12 measurement sites were selected on the basis of several factors, the most important of which was the site's potential sensitivity to changes in vibration levels. Each site was either representative of a unique vibration environment, or of nearby, similarly situated receptors. Along the BNSF alignment, the primary land uses are industrial and commercial; however, vibration monitoring was conducted at two pockets of residential properties near the alignment. As the Citrus Connection and the existing SJBL alignment pass through predominately residential neighborhoods, most of the sensitive receptors monitored along these segments are residential in nature. Several non-residential land uses also exist along these segments and were included in the monitoring program; these sites include schools, churches and senior centers. Pass-by vibration measurements were taken during existing freight operations.

Vibration Analysis Methodology

Following is an outline of the approach used to identify potential vibration impacts from the proposed PVL commuter rail extension. In general, the approach follows the Detailed Assessment guidelines outlined in the FTA Manual with modifications to account for the measurement results in the PVL corridor and previous experience with SCRRA/Metrolink vibration. The general steps are:

1. Identify representative vibration-sensitive receptors. Sensitive land uses along the corridor were identified, first by referencing recent aerial photography. Field visits were then conducted to confirm land uses and gather additional relevant information. Sensitive receivers were then grouped together based on their location relative to the tracks and other geographic and PVL operational factors that might affect vibration levels. Within each grouping, a representative receptor was included in the FTA vibration model (see step 3 below). The representative locations were developed based on previous studies, additional field review and comments received during the Draft EA process.

2. Determine existing vibration levels as described above.

3. Develop vibration prediction models. The FTA impact criteria for GBV are based on the amount of vibration generated within buildings. This means that accurate predictions of GBV require accounting for: (a) the forces generated by the interaction of the wheels and rails (b) the effects that the localized soil conditions have on vibration propagation, and (c) how building structures respond to ground vibration.

   To develop predictions of GBV for the PVL, the FTA Manual's generalized base vibration curve was applied. The base curve is referenced to typical locomotive vibration characteristics and the distance from the vibration source to the affected receiver. Applying key adjustment elements to the curve such as speed and building response results in the final vibration prediction level.

   Based on the results, the appropriate vibration criteria are then applied to determine potential impact. The FTA vibration criteria are based on the frequency of operation (less than 30 events per day based on the forecasted number of SCRRA/Metrolink trains) along the PVL corridor. For the PVL corridor, this would mean that the forecasted number of SCRRA/Metrolink trains would be in the "Infrequent Events" category, as described in the FTA Manual. Because the impact criteria already takes into account the frequency or number of train trips, only one single train event is required for the assessment.

   According to Chapter 8 of the FTA Manual, the number of existing daily freight train events along the SJBL is too few to warrant inclusion in the analysis. When existing rail corridors have less than five freight train trips per day, the existing environment would not include a significant number of perceptible GBV events. As a result, the FTA vibration assessment for the PVL project would only be related to future Metrolink trains traveling along the SJBL.

4. Estimate future noise and vibration levels at the representative receivers. Using the noise and vibration models described above, future train-generated noise and vibration levels were estimated and compared against the applicable FTA impact thresholds to identify potential noise and vibration impacts.

5. Identify vibration mitigation. With respect to vibration impacts, according to the FTA Manual, the application of mitigation measures such as the use of ballast mats or resiliently supported ties would significantly reduce the level of predicted vibration. One of these mitigation measures would be applied to the track alignment and would extend along areas where impacts were predicted. When assessing vibration mitigation it is important to consider both the degree of impact and the cost as any mitigation should be both reasonable and feasible.

3.4.7 Vibration Environmental Consequences/Impacts

Details of the vibration predictions are presented in Table 3.4-15 and Table 3.4-16 for residential land uses in Riverside and Perris, respectively. Table 3.4-17 presents the vibration predictions for institutional land uses (schools and churches) for the entire SJBL. All vibration levels have been predicted using the procedures outlined above.

Table 3.4-15
Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Riverside

Description	Dist (Ft)	Land Use	No. Dwell Units	Track Side1	Speed (mph)		Impact Threshold VdB	Predicted Vibration VdB	Impact Y/N?	No.
					IB	OB				
Citrus Street	62	SF	3	IB	30	30	80	78	N	
Kentwood 1	170	SF	5	IB	35	35	80	69	N	
Kentwood 2	140	SF	4	IB	60	60	80	76	N	
Kentwood 3	80	SF	14	IB	60	60	80	81	Y	14
Watkins 2	140	MF	6	OB	60	60	80	76	N	
Watkins 4	140	MF	7	OB	60	60	80	76	N	
Watkins 3	140	MF	10	OB	60	60	80	76	N	
Watkins 1	124	MF	9	OB	60	60	80	78	N	
Watkins 5	124	MF	4	OB	60	60	80	78	N	
Highlander	127	SF	10	IB	30	30	80	72	N	
W. Campus View 1	127	SF	13	IB	30	30	80	72	N	
W. Campus View 2	117	SF	13	IB	30	30	80	73	N	
W. Campus View 3	125	SF	9	IB	30	30	80	72	N	
W. Campus View 4	104	SF	5	IB	30	30	80	74	N	
Nisbet Way	137	SF	11	OB	30	30	80	71	N	
Mt. Vernon 1	110	SF	1	OB	30	30	80	73	N	
Mt. Vernon 2	180	SF	1	OB	30	30	80	68	N	
E. Campus View 1	80	SF	3	IB	25	25	80	73	N	
E. Campus View 2	65	SF	9	IB	25	25	80	75	N	
Big Springs	120	SF	4	OB	30	30	80	73	N	
Quail and Swain	140	SF	5	OB	30	30	80	70	N	
Masters Avenue	170	SF	4	OB	30	30	80	68	N	
E. Manfield Street	130	SF	3	OB	30	30	80	72	N	
Total, SJBL, Riverside										**14**
Source: STV Incorporated (2009)										

Table 3.4-16
Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Perris

Description	Dist (Ft)	Land Use	No. Dwell Units	Track Side1	Speed (mph) IB	Speed (mph) OB	Impact Threshold VdB	Predicted Vibration VdB	Impact Y/N	No.
C Street	244	SF	19	OB	46	46	80	67	N	
10th Street	120	SF	1	OB	30	30	80	73	N	
State Street	80	SF	1	OB	30	30	80	75	N	
9th Street	300	SF	5	IB	30	30	80	62	N	
Case Road	130	MF	12	OB	30	30	80	72	N	
Total, SJBL, Perris										**0**
Source: STV Incorporated (2009)										

Table 3.4-17
Predicted Levels of Ground-Borne Vibration, Category 3 (Institutional) Land Uses

Description	Dist (Ft)	Land Use	Track Side1	Speed (mph) IB	Speed (mph) OB	Impact Threshold VdB	Predicted Vibration VdB	Impact Y/N	No.
St George's Episcopal Church	190	Church	OB	60	60	83	74	N	
UCR Day Care	175	Day Care	OB	30	30	83	69	N	
Highland Elementary School	88	School	IB	60	60	83	81	N	
Crest Community Baptist Church	163	Church	IB	30	30	83	69	N	
Hyatt Elementary School	370	School	OB	35	35	83	63	N	
Senior Citizens Center	72	Community Center	IB	44	44	83	81	N	
St. James School	370	School	OB	~~60~~ 46	~~60~~ 46	83	68	N	
Total, SJBL, Perris									**0**
Source: STV Incorporated (2009)									

Summary of Results

Rail Operations

Utilizing FTA vibration criteria, the results of the PVL vibration study indicate that future SCRRA/Metrolink rail vibration levels generated under the 2012 operational year would be generally in ranges below the FTA vibration impact thresholds. However, vibration impacts would occur along one residential section of the PVL corridor. Affected homes are located in the UCR area just south of Spruce Street and north of ~~the Hyatt~~Highland Elementary School along the eastern side of the proposed PVL alignment. A total of 14 homes extending approximately 1,200 feet along the proposed alignment would be affected. The distances between the PVL alignment and existing homes in this section range from 80 to 90 feet.

Train operations from the proposed PVL project will result in vibration impacts in the UCR area of Riverside. Mitigation measures to reduce vibration include the installation of ballast mats or resiliently supported ties (under-tie pads). The proposed mitigation measures allows for the selection of either one or of these two methods to reduce vibration to below a significant impact (Mitigation Measures NV-3 and NV-4).

Stations, Parking Lots and the Layover Facility

Trains in the vicinity of stations and the Layover Facility would be traveling at low rates of speed and therefore are not expected to result in any vibration impacts at nearby sensitive receptors. In addition, automobile parking areas would be utilized by rubber-tired vehicles. Rubber-tired vehicles do not generate vibration impacts because of the nature of tire-pavement interaction with respect to vibration impacts. No impacts are expected from these areas.

Construction Period Vibration Impacts

Vibration impacts could occur during construction activities from the operation of equipment at a site. Site related construction elements would include excavation of the rail ROW, the construction of grade crossings, the laying of track followed by systems and passenger station construction.

Although the overall length of construction would be approximately 18 months, disturbances at individual receptor locations would not last for more than several months. Any potential construction noise impacts on schools and churches would be sporadic and temporary. The longest sustained construction period near these receptors would likely result from station construction and, as mentioned above, would last approximately two months. However, because of the relative small scale of a typical rail station, the use of heavy construction equipment would only occur during a short segment of that two month period.

According to Section 7.34.060 of the Perris General Plan, construction is restricted to the hours of 7 AM to 7 PM. Construction is prohibited on holidays.

According to the Riverside County Code, Title 15.04.020, whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6 PM and 6 AM during the months of June through September and between the hours of 6 PM and 7 AM during the months of October through May.

According to the PVL Construction Staging Plan, some nighttime construction is scheduled to occur specifically for new track layout. As such, written consent for an exemption, or variance to these codes would have to be obtained from the municipality.

The construction activity that would create the most vibration is pile driving associated with the San Jacinto River bridge replacement~~s~~ which is~~near~~ adjacent to the proposed~~South Perris~~ Layover Facility~~, around the San Jacinto River~~. However, as there are no vibration sensitive receptors ~~locations~~located within approximately one mile of~~ nearby~~ the proposed Layover Facility and the pile driving sites, construction related vibration impacts would not occur. In addition, pile driving would be temporary in nature, and any site specific pile driving would likely be completed in under a week.

As a result, although the total construction period is estimated to last approximately 18 months, not all activities during that time would be substantive sources vibration. Therefore, because of the temporary and episodic nature of potential vibration increases, construction activities would not result in significant impacts under NEPA.

3.4.8 Vibration Mitigation Measures

Train operations from the proposed PVL project will result in vibration impacts in the UCR area of Riverside from civil stations 263+00 to 275+00 (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of ~~Hyatt~~Highland Elementary School). Mitigation measures to reduce vibration to below a significant impact are listed below.~~:~~ ~~(~~It should be noted that either one of the two methods would be effective at mitigating the impacts to below a level of significance.

- **NV-3:** *Ballast Mats*: A ballast mat consists of a rubber (such as shredded rubber tires), cork or other type of resilient elastomer pad that is placed under the normal ballast, ties, and rail. The ballast mat shall be placed on a concrete or asphalt layer to be most effective. Ballast mats can provide 5 to 12 dB attenuation at frequencies above 25 to 30Hz.

- **NV-4:** *Resiliently Supported Ties (Under-Tie Pads):* This treatment consists of resilient rubber pads placed underneath concrete ties. A resiliently supported tie system consists of concrete ties supported by rubber pads. The rails are fastened directly to the concrete ties using standard rail clips.

Implementation by RCTC of either one of the above described vibration mitigation measures ~~described above~~ (NV-3 or NV-4) between Sta. 263+00 and 275+00 will eliminate the 2 VdB impact predicted in the UCR area of Riverside (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of ~~Hyatt~~Highland Elementary School).

3.5 TRAFFIC AND PARKING

This section of the SEA presents the findings of the *Perris Valley Line Commuter Rail Traffic Technical Report* (STV Incorporated, ~~2010~~2011) to this SEA as presented in Technical Report D, and an assessment of the potential impacts related to traffic within the PVL corridor.

3.5.1 Regulatory Setting

In compliance with California state law, Riverside County and each city within the county limits maintains a General Plan Circulation Element that identifies transportation routes, terminals, and facilities and their performance criteria. Level-of-service (LOS) standards based on the *Highway Capacity Manual 2000 (HCM2000)* procedures are used to assess the performance of a street or highway system and the capacity of a roadway. For a signalized intersection, levels of service are determined for the intersection and its individual lane groups, and are defined in terms of the average control delays experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the intersection or lane group is saturated. For an unsignalized intersection, levels of service are determined for minor movements only, and are defined as the total elapsed time between a vehicle stopping at the end of the queue and departing from the stop line. The delay levels for signalized and unsignalized intersections for various levels of service are detailed below (see Table 3.5-1).

Table 3.5-1
Level-of-Service Descriptions

LOS	Definition	Signalized Intersection Delay (seconds/vehicles)	Unsignalized Intersection Average Stop Delay (seconds)
A	Describes operations with very low delay. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high.	<10	<10
B	Describes operations with moderately low delay and stable flow. Drivers begin to feel somewhat restricted within platoons of vehicles.	>10 and <20	>10 and <15
C	Describes operations with average delays. The range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	>20 and <35	>15 and <25
D	Describes a crowded operation, with below average delays. Speed and freedom to maneuver are severely restricted.	>35 and <55	>25 and <35
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low but relatively uniform value.	>55 and <80	>35 and <50
F	Forced or breakdown flow. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection.	>80	>50

The cities of Riverside, Moreno Valley, and Perris, and the county of Riverside, which are the agencies whose jurisdiction the study area falls under, have adopted the following thresholds for levels of service.

According to the City of Riverside General Plan:

> Maintain LOS D or better on arterial streets and LOS C or better on Local and Collector streets in residential areas. LOS E may be acceptable as determined on a case-by-case basis at key locations such as City arterial roadways which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges.

According to the City of Moreno Valley General Plan:

> Maintain LOS C where possible. Peak hour levels of service in the LOS D range may be acceptable in certain locations including areas of high employment concentration, north/south roads in the vicinity of SR-60 or other locations in already developed areas of the City with geometric constraints that prevent LOS C from being achieved.

According to the City of Perris General Plan:

> Maintain LOS E along all Local roads (for both segments and intersections) and LOS D along I-215 and SR-74 (including intersections with local streets and roads).

According to the Riverside County General Plan:

> Maintain LOS C along all County maintained roads and conventional state highways. As an exception, LOS D may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections. LOS E may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

3.5.2 Affected Environment

The proposed PVL corridor is approximately 21 miles long, and traverses through the cities of Riverside to south of Perris in Riverside County.

The project corridor contains a variety of land uses and related street/intersection layouts. In the more developed areas of the corridor, such as the city of Riverside, traffic signals control intersection movements, while in the less developed areas of the corridor stop signs control traffic movements. Additionally, it should be noted that many of the current grade crossings do not have crossing arms to block access when a train is passing. Traffic study areas were identified for each of the four stations that would be in service in 2012 that considered the primary streets serving the general area, the potential access points to the station, and key intersections likely to be affected by the assignment of project-generated trips.

A total of 29 intersections were selected for analysis for the four stations, and are identified by station area location.

Hunter Park Station: the Draft SEA considered three proposed station location options along Palmyrita, Columbia and Marlborough Avenues as shown on Figure 3.5-1. RCTC during the development of the Final SEA has selected the Marlborough site to be the Hunter Park Station.

- Iowa Avenue at Center Street
- Iowa Avenue at Palmyrita Avenue
- Northgate Street at Palmyrita Avenue
- Iowa Avenue at Columbia Avenue
- Northgate Street at Columbia Avenue
- Northgate Street at Marlborough Avenue
- Iowa Avenue at Marlborough Avenue
- Rustin Avenue at Marlborough Avenue

Moreno Valley/March Field Station as shown on Figure 3.5-2

- Alessandro Boulevard at Mission Grove Parkway
- Alessandro Avenue at Old 215
- Cactus Avenue at Old 215
- Cactus Avenue at southbound I-215 ramps

Downtown Perris Station as shown on Figure 3.5-3

- Nuevo Road at Perris Boulevard
- San Jacinto Avenue at Redlands Avenue
- San Jacinto Avenue at Perris Boulevard
- San Jacinto Avenue at C Street
- San Jacinto Avenue at D Street
- SR-74 at Navajo Road
- SR-74 at C Street
- SR-74 at D Street
- SR-74 at Perris Boulevard
- 6th Street at C Street
- 6th Street at D Street
- 7th Street at C Street
- 7th Street at D Street
- 7th Street at Perris Boulevard

South Perris Station as shown on Figure 3.5-4

- Bonnie Drive at southbound I-215 ramps
- SR-74 at northbound I-215 off-ramp
- SR-74 at Sherman Road

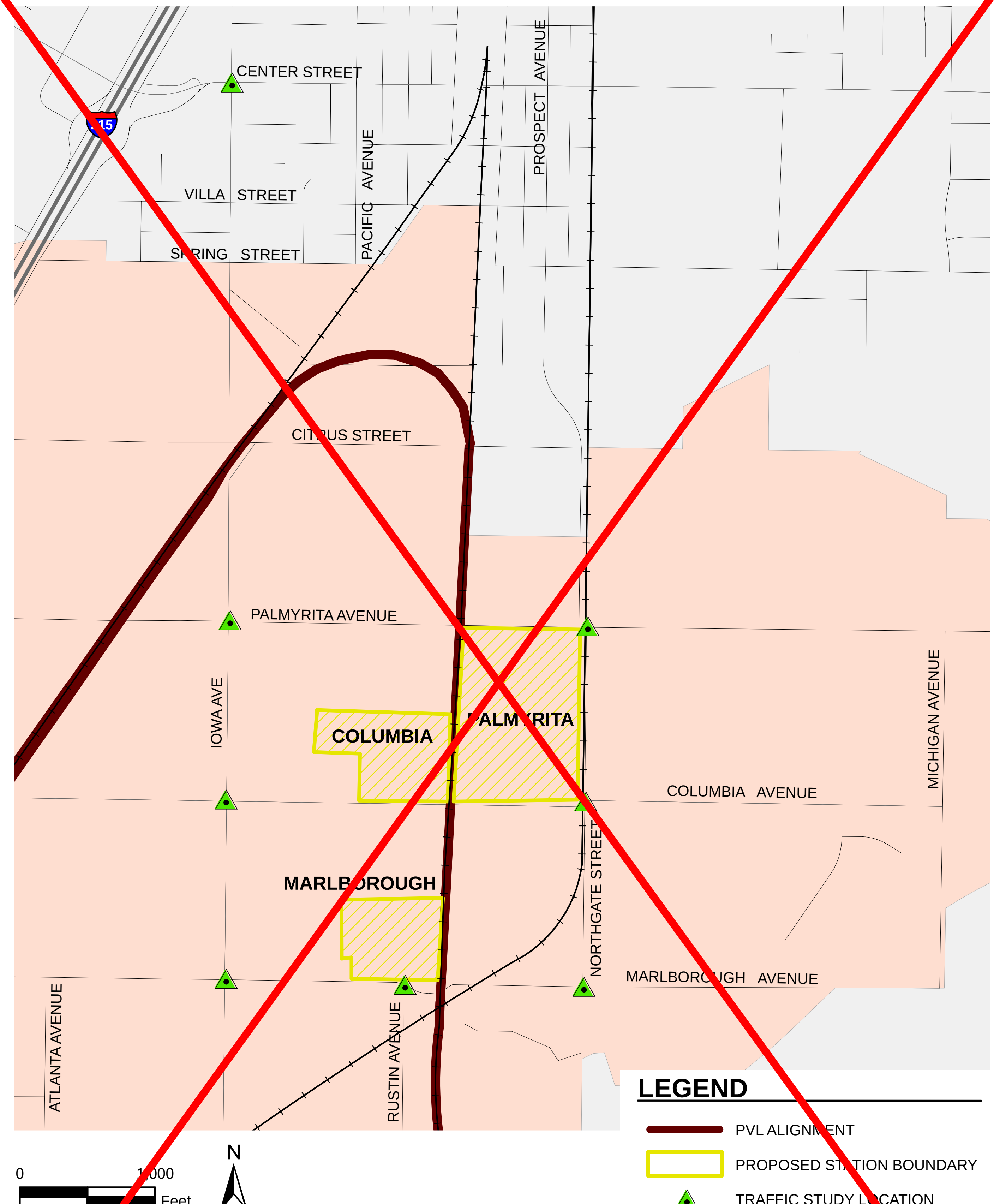
This Page Intentionally Left Blank

PROJECT NO.	92666
DRAWN:	12/19/11
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666traf.MXD

HUNTER PARK STATION
TRAFFIC STUDY LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.5-1



Perris Valley Line

RCTC

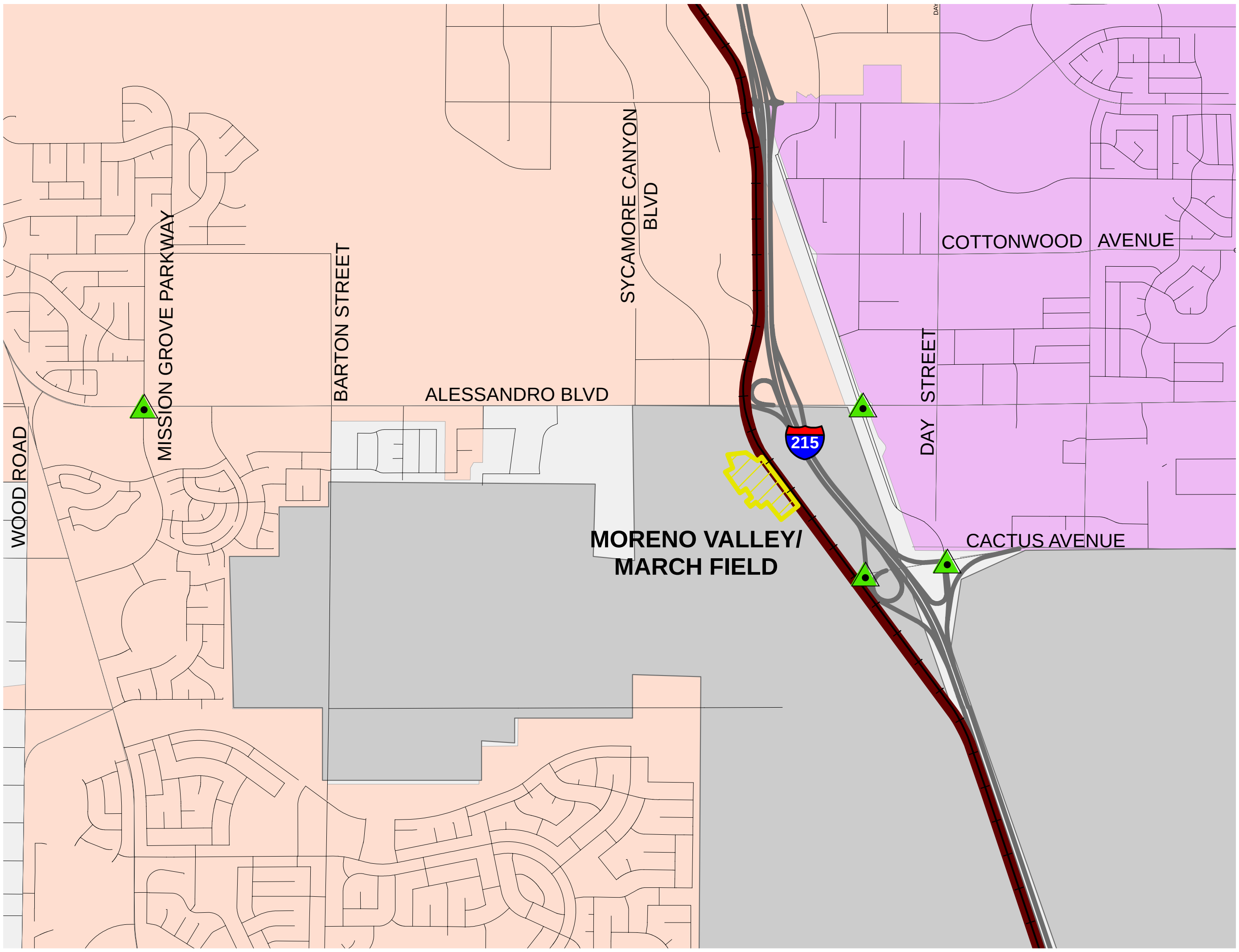
KLEINFELDER

PROJECT NO.	92666
DRAWN:	1/5/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666traf.MXD

HUNTER PARK STATION OPTIONS
TRAFFIC STUDY LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.5-1



LEGEND

- PVL ALIGNMENT
- PROPOSED STATION BOUNDARY
- TRAFFIC STUDY LOCATION

N

0 3,000 Feet

PROJECT NO.	92666	MORENO VALLEY/ MARCH FIELD STATION TRAFFIC STUDY LOCATIONS	FIGURE
DRAWN:	1/5/10		3.5-2
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME:	92666traf1.MXD		

LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- TRAFFIC STUDY LOCATION

PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666traf2.MXD

DOWNTOWN PERRIS STATION
TRAFFIC STUDY LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.5-3

PROJECT NO. 92666		**SOUTH PERRIS STATION TRAFFIC STUDY LOCATIONS**	FIGURE
DRAWN: 1/5/10			
DRAWN BY: JP			
CHECKED BY: RM		SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	3.5-4
FILE NAME: 92666traf3.MXD			

The key travel routes in the vicinity of each station are described below:

Hunter Park Station options

- *Iowa Avenue* is a six-lane, north-south arterial that carries traffic between the Hunter Industrial Park neighborhood to the north and the Canyon Crest neighborhood to the south in Riverside. RTA Route (Rte) 25 runs along Iowa Avenue within the study area.

- *Center Street* is a four-lane undivided arterial oriented in the east-west direction within the study area, and ends just west of its intersection with I-215.

- *Palmyrita Avenue* between Iowa and Prospect Avenues is a two-lane undivided roadway extending in the east-west direction. It is lined with office buildings and warehouses within the study area.

- *Columbia Avenue* is a four-lane arterial that carries traffic in the east-west direction between Hunter Industrial Park and the Northside areas in Riverside.

- *Marlborough Avenue* is an east-west collector road that becomes an arterial between Chicago and Rustin Avenues in Riverside. East of Iowa Avenue, a bike lane is provided along both sides of the street.

Moreno Valley/March Field Station

- *Alessandro Boulevard* is a six-lane, divided arterial roadway extending in the east-west direction within the study area, and is served by the Rte 20 bus.

- *Cactus Avenue* between Meridian Parkway and Old 215 is an undivided east-west arterial within the limits of the city of Moreno Valley providing access to north and southbound I-215. It provides four lanes east of Old 215, and narrows to two lanes at its intersection with southbound I-215 ramps.

Downtown Perris Station

- *Perris Boulevard* is a north-south, primary arterial that extends from downtown Perris to Moreno Valley. The Rte 19, 22, 27, 30, and 74 buses travel along Perris Boulevard in downtown Perris.

- *San Jacinto Avenue* is a two-lane, secondary arterial oriented in the east-west direction.

- *State Route (SR)-74* provides regional access to downtown Perris, and is a four-lane facility oriented in the east-west direction in this area. SR-74 is known as 4th Street in downtown Perris as this portion of roadway between Redlands Avenue and Navajor Road is owned and maintained by the City of Perris. The Rte 19, 22, 27, 30, 74, and 208 buses travel along a section of SR-74 to serve downtown Perris. SR-74 extends into the South Perris Station study area.

- *D Street* is a two-lane, north-south collector road that extends from 11th Street to I-215 in downtown Perris. It is served by the Rte 30 bus. On-street parking is available on the east and west sides of D Street between 1st and 7th Streets.

- *C Street* is a north-south, local road that extends from 11th Street to San Jacinto Avenue in downtown Perris.

South Perris Station

- *Sherman Road* is a two-lane, undivided roadway that extends in the north-south direction. It is mostly lined with empty lots and some residential land uses in the study area.

- *Bonnie Drive* is a short, two-lane roadway segment that connects Case Road with southbound I-215 on- and off-ramps and SR-74.

Traffic Volumes

Intersection counts, including manual turning movement and vehicle classification, were conducted at the study intersections during the weekday AM and PM periods. Additionally, 24-hour automatic traffic recorder (ATR) machine counts were collected at the following locations concurrent with turning movement counts:

- Iowa Avenue south of Spring Street
- Iowa Avenue south of Marlborough Avenue
- Columbia Avenue east of Iowa Avenue
- Alessandro Boulevard east of Mission Grove Parkway
- Cactus Avenue west of Old 215
- Perris Boulevard south of Bowen Road
- SR-74 east of D Street
- SR-74 east of Trumble Road

The manual and ATR count data were reviewed to ensure that traffic volumes for a representative day (during clear weather and while schools are in session) are reflected in the traffic analyses. From the data collected, the weekday AM and PM peak traffic hours throughout the entire PVL study area typically occur during the 7:15 to 8:15 AM and 4:30 to 5:30 PM periods, respectively. However, peak PVL ridership periods within the study area are from 5 to 7 AM and 5 to 7 PM based on ridership projections (before and after the existing AM and PM peak travel time for area traffic, respectively, with a little overlap in the PM peak). This is due to the travel times of PVL passengers to/from stations depending on their desired arrival/departure times in Los Angeles, taking approximately one hour 15 minutes to two hours and 20 minutes of train travel time into account. For analysis purposes, the 6-7 AM and 5-6 PM analysis hours were selected since the combination of project-generated traffic and background volumes would be highest. Following is a brief description of traffic volumes on the roadways serving the station areas during these time periods.

Iowa Avenue carries the highest traffic volumes in the Hunter Park Station option areas, with approximately 330 to 1,490 vehicles per hour (vph) per direction during the 6-7 AM and 5-6 PM analysis hours. The remaining roadways in the vicinity of Hunter Park Station process up to 280 vph per direction during the AM analysis hour and 615 vph per direction during the PM analysis hour.

The analysis-hour volumes are between 450 and 2,200 vph along eastbound Alessandro Boulevard and between 810 and 1,815 vph along westbound Alessandro Boulevard (higher near Mission Grove Parkway) within the study area for the Moreno Valley/March Field Station. Westbound Cactus Avenue volumes are between 1,360 and 1,875 vph, and eastbound Cactus Avenue volumes are between 485 to 720 vph at Old 215, and decrease to 500-715 vph and 90-280 vph respectively at southbound I-215 ramps as a result of entering/exiting vehicles to/from I-215 in between these two intersections.

The traffic volumes within the Downtown Perris Station area are highest along SR-74, ranging from 430 to 1,200 vph eastbound and from 350 to 1,375 vph westbound. Bi-directional traffic volumes along the remaining roadways in the area are less than 420 vph during the analysis hours, with the exception of Nuevo Road, which carries up to 1,170 vph eastbound; and D Street and Perris Boulevard, both of which carry up to 830 vph southbound during the PM analysis hour. SR-74 also carries the highest traffic volumes in the vicinity of South Perris Station. The volumes in this area are higher compared to Downtown Perris, and vary between 600 and 1,095 vph in the eastbound direction and between 820 and 1,145 vph in the westbound direction.

Existing traffic volumes at study intersections are presented in Traffic Technical Report D.

Existing Conditions

Each of the study intersections was analyzed in terms of its capacity to accommodate existing traffic volumes as defined by the resulting levels of service. A summary of the findings is discussed below and presented in Traffic Technical Report D.

Hunter Park Station options

All movements at the study intersections operate at LOS D or better during both the AM and PM analysis hours, with the exception of Iowa Avenue at Center Street, where the northbound Iowa Avenue through movement operates at LOS E during the PM analysis hour.

Moreno Valley/March Field Station

The intersection operations are at LOS D or better during both analysis hours with the following exceptions:

- At Alessandro Boulevard and Mission Grove Parkway, westbound Alessandro Boulevard and southbound Mission Grove Parkway left-turn movements operate at LOS E during the PM analysis hour.

- Westbound Cactus Avenue's through movement at Old 215 operates at LOS E during the PM analysis hour.

Downtown Perris Station

All movements at the study intersections operate at LOS D or better during both the AM and PM analysis hours, with the exception of D Street northbound shared through/left-turn movements at SR-74, which operates at LOS E during the PM, and southbound C Street shared through/left-turn movements at SR-74, which operates at LOS F, during both the AM and PM analysis hour.

South Perris Station

All movements at the three study intersections operate at LOS C or better during both analysis hours with the following exceptions:

- Bonnie Drive's eastbound right-turn movement at southbound I-215 ramps operates at LOS F during the PM analysis hour.

- Sherman Road's northbound left-turn movement at SR-74 operates at LOS F during both the AM and PM analysis hours, and the southbound left/right-turn movement operates at LOS F during the PM analysis hour.

2012 Future Conditions without the Project

The analysis of the future traffic conditions without the proposed project serves as the baseline against which impacts of the project are compared. These analyses include the traffic volume increases expected due to an overall growth in traffic through and within the study area, and major approved land developments and roadway system changes scheduled to be occupied or implemented by the ~~2012~~ opening year for the PVL.

A generally applied background growth rate of two percent per year, resulting in an overall growth of approximately eight percent by 2012, was assumed for Hunter Park and Moreno Valley/March Field station areas per the guidelines of the cities of Riverside and Moreno Valley. For Downtown and South Perris stations, which are within the city of Perris, an annual background growth rate of three percent (approximately 13 percent over four years) was used, per City guidelines.

No major developments are planned in the area surrounding Hunter Park Station by 2012. Although the Hunter Business Park development is not fully built out according to the city of Riverside, this development is not expected to be a significant generator of traffic due to its designated industrial/warehouse land use and the size of the remaining parcels. ~~Two~~ In addition, three major improvement projects involving railroad grade separations at Columbia and Iowa Avenues and 3rd Street are planned to be completed ~~in 2009 and 2011, respectively~~prior to 2013. The grade separation of Columbia Avenue and the BNSF railroad tracks would raise Columbia Avenue over the BNSF railroad between La Cadena Drive and Iowa Avenue. Similarly, the Iowa Avenue grade-separation project would raise Iowa Avenue over the BNSF tracks between Palmyrita Avenue and Spring Street. These projects are not expected to affect the traffic volumes in the area, and would neither increase nor reduce roadway capacity.

A number of approved development projects were identified by the city of Moreno Valley within the Moreno Valley/March Field Station area:

1. Centerpointe Industrial and Business Park project is located northeast of Cactus Avenue and Graham Street; it will be a 162-acre business park.

2. Meridian Business Park (formerly known as March Business Center) project is located southwest of I-215 and Alessandro Boulevard on a 1,290-acre site. The project land uses consist primarily of industrial park, warehousing, research and development, and associated business support uses. It is planned to be constructed in three phases, two of which would be completed by 2012.

3. Gateway Center is an industrial/business park project on a 25-acre site on Day Street south of Alessandro Boulevard.

4. Cactus/Commerce Commercial Center is a 16,000-square-foot commercial/retail development on Cactus Avenue between Day and Elsworth Streets.

   The trip generation and assignment for these projects were taken from the *Cactus Avenue and Commerce Center Drive Commercial Center Traffic Impact Study* (Urban Crossroads, 2008).

5. March Lifecare Campus is a development project including a mix of healthcare and ancillary uses, including hospitals, general and specialty medical offices, medical retail, research and education, a wellness center, senior center, independent/assisted-living facilities, skilled nursing facilities, and related support facilities. The project will be developed in five planning areas, of which the first two are expected to be developed by 2011, and include a 50-bed hospital, 660 units of institutional residential, 190,000 square feet of medical office, 200,000 square feet of research and education, and 210,000 square feet of retail land uses. The remaining planning areas will be developed over the next 20 to 25 years. Therefore, the trip generation and vehicle assignments associated with only the first two planning areas for this project were incorporated into the 2012 future traffic volumes without the project. Vehicle trip generation and assignments for this development project were obtained from the *March Lifecare Campus Specific Plan Draft Program Environmental Impact Report* (Applied Planning Inc., 2009).

As previously noted, the AM analysis hour for the PVL is earlier than the AM peak hour analyzed for these development projects. It was determined that the trip distribution for the 6-7 AM time period (PVL AM analysis hour) corresponds to 35 percent of the typical AM peak hour traffic based on the *Southern California Association of Governments Year 2000 Post-Census Regional Travel Survey.* Therefore, AM peak hour trip generation for the above projects was reduced by 65 percent.

In addition to the development projects, a major roadway improvement project to widen Cactus Avenue and to reconfigure its intersection with southbound I-215 ramps (March Joint Powers Authority Cactus Avenue Extension/Railroad Bridge Widening project) is planned to be completed by 2012 within the Moreno Valley/March Field study area. Upon the completion of this project, Cactus Avenue would provide two east and westbound through lanes, one westbound left-turn lane, and one eastbound right-turn lane. In addition, southbound through and left-turn movements from I-215 off-ramp onto Cactus Avenue would be no longer allowed.

Two approved projects are to be completed in the Downtown Perris Station study area by 2012:

1. The Venue at Perris development project is located on the northeast corner of I-215 and Redlands Avenue. It would include a movie theater, home improvement superstore, discount superstore, and other retail space. The trip generation for this project was developed based on rates for Land Use 862 ("Home Improvement Superstore"), 813 ("Free-Standing Discount Superstore"), 820 ("Shopping Center"), and 444 ("Movie Theater with Matinee") from the *Institute of Transportation Engineers Trip Generation, 7th Edition* (Institute of Transportation Engineers, 2007). Traffic was assigned based on existing travel patterns.

2. Perris Marketplace project is a 520,000-square-foot retail center located on the west side of Perris Boulevard, north of Nuevo Road. It includes a discount superstore with a gas station, a home improvement store, restaurants, and specialty retail space. Vehicle trip generation and assignments for this project were obtained from the traffic study prepared for the city of Perris in 2006. This study recommends reconfiguration of the Nuevo Road/Perris Boulevard intersection to mitigate the impacts of the project as follows:

- Provide two left-turn, two through, one through/right-turn, and one right-turn lane for eastbound Nuevo Road.

- Provide one left-turn, three through, and one right-turn lane for northbound Perris Boulevard.

- Provide two left-turn, three through, and two right-turn lanes for southbound Perris Boulevard.

- Westbound Nuevo Road approach remains the same as existing conditions.

It is assumed that these mitigation measures were in place by 2009.

Roadway system changes by 2012 within the Downtown Perris Station area include the signalization of the C Street/SR-74 intersection, which is currently stop-controlled, and the widening and restriping of the D and C Street intersections at San Jacinto Avenue.

Two approved projects were identified in the South Perris Station study area:

1. Towne Center project is a 470,000-square-foot retail center located in the southeastern portion of the city of Perris, on the southeast corner of I-215 and Ethanac Road. It would be anchored by a 220,000-square-foot big-box store, and would also include specialty retail space, restaurants, and a hotel. The development is expected to be opened in

2009. The trip generation and assignment for this project were obtained from the *Towne Center Traffic Impact Study* (Albert A. Webb Associates, 2007).

2. Perris Crossing (formerly known as Ethanac Road Retail Center) development is a 625,000-square-foot retail center located on the north side of Ethanac Road, west of Case Road. The retail center would include approximately 600,000 square feet of retail and restaurant uses, a service station, and 24,000 square feet of office uses. The *Ethanac Road Retail Center Traffic Study* (LSA Associates, Inc., 2005) was used in determining the trip generation and assignment for this development. The development was not completed at the time of the traffic counts in the South Perris Station study area in 2008.

Although this project is within the South Perris Station area, no project-generated trips were added to the study intersections as project traffic to/from I-215 and SR-74 would be able to access these roadways via Ethanac Road without traversing through the study intersections. However, ten percent of in and outbound trips traveling to/from the north, via Case Road, were assigned to intersections in the Downtown Perris area.

The trip generation for the four projects within the Downtown and South Perris Station areas was included only in the PM analysis hour traffic volumes, as they all consist of retail/commercial land uses, which would not generate traffic as early as the PVL AM analysis hour.

The cumulative project trip assignments are presented in Traffic Technical Report D, as are 2012 future traffic volumes without the project.

2012 Future traffic levels of service without the project were determined based on the projected increase in traffic volumes and changes in roadway geometrics. A summary of the findings is discussed below.

Hunter Park Station options

All movements at the study intersections would continue to operate at acceptable levels of service, with the exception of Iowa Avenue's northbound through movement at Center Street, which would worsen from LOS E (existing) to F (future without the PVL project) during the PM analysis hour, resulting in the overall intersection level of service to deteriorate from LOS D to E.

Moreno Valley/March Field Station

All movements at the intersection of Alessandro Boulevard and Old 215 would continue to operate at acceptable levels. Several movements at the remaining three intersections, however, would worsen including:

- At Alessandro Boulevard and Mission Grove Parkway, westbound Alessandro and southbound Mission Grove Parkway's left-turn movements would incur additional delay within LOS E during the PM analysis hour.

- At the intersection of Cactus Avenue and southbound I-215 ramps, westbound Cactus Avenue's left-turn movement and the overall intersection would deteriorate from LOS C (existing) to F (future without the PVL project) during the PM analysis hour.

- Westbound Cactus Avenue's through movement would worsen from LOS E to F at Old 215, and the overall intersection level of service would deteriorate from LOS D to F during the PM analysis hour.

Downtown Perris Station

The levels of service for all movements would remain within acceptable limits during the AM analysis hour. However, several movements would deteriorate to poor levels of service during the PM analysis hour, including:

- At Nuevo Road and Perris Boulevard, eastbound Nuevo Road's left-turn movement would deteriorate from LOS C (existing) to F (future without the PVL project); southbound Perris Boulevard's left-turn movement would deteriorate from LOS C to E. The overall intersection level of service would deteriorate from LOS C to E.

- At SR-74 and D Street, eastbound SR-74's through/right-turn movements would deteriorate from LOS C to E. Northbound D Street's through/left-turn movements would worsen from LOS E to F, and southbound left-turn movement would deteriorate from LOS D to F. The overall intersection operations would also deteriorate from LOS C to F.

- At the intersection of SR-74 and Perris Boulevard, Perris Boulevard's ~~east~~southbound left-turn movement would deteriorate from LOS C to F.

- ~~At the intersection of San Jacinto Avenue and C Street, San Jacinto Avenue's westbound left-turn movement and the overall intersection would worsen from LOS C to F and E, respectively.~~

- At San Jacinto Avenue and D Street, San Jacinto Avenue's eastbound left-turn and D Street's southbound through movements would deteriorate from LOS D to F, and the overall intersection level of service would deteriorate from LOS C to E~~F~~.

- At San Jacinto Avenue and Redlands Avenue, San Jacinto Avenue's westbound through/left-turn movements would deteriorate from LOS B to F. Northbound Redlands Avenue's through/left-turn and right-turn movements would deteriorate from LOS D and B to LOS F, respectively. Southbound Redlands Avenue's left-turn movement would deteriorate from LOS B to F.

South Perris Station

Most movements would continue to operate within acceptable levels of service. However, the movements that currently operate at LOS F would worsen by incurring significant increases in delay (i.e., delay increases of more than two seconds), and southbound Sherman Road at SR-74 would deteriorate from LOS C to E during the PM analysis hour.

3.5.3 Environmental Consequences/Impacts

Project Trip Generation and Modal Split

The PVL is expected to carry 3,705 passengers during each of the AM and PM peak periods in 2012 based on ridership projections. There would be four trains scheduled in the peak direction of travel (to Los Angeles in the morning, to Perris in the afternoon) during these periods, of which one would depart from South and Downtown Perris stations and two would depart from Moreno Valley/March Field and Hunter Park stations during the AM analysis hour (6 AM – 7 AM), and one would arrive at all stations during the PM analysis hour (5 PM – 6 PM). It was determined that approximately 50 percent of the AM peak period inbound (northbound) riders would travel on the two analysis-hour trains (leaving South Perris at 5:48 and 6:18 AM) based on existing ridership data on Metrolink Inland Empire-Orange County, San Bernardino, and Riverside lines. About 35 percent of the outbound (southbound) riders during the PM peak period would travel on the analysis-hour train. No outbound trains would arrive in the study area during the AM analysis hour, and no inbound trains would depart the area during the PM analysis hour.

Table 3.5-2 lists the number of boarding and alighting passengers per station during the AM and PM analysis hours.

Table 3.5-2
AM and PM Analysis-Hour Ridership

Proposed Station	AM		PM	
	Boardings	Alightings	Boardings	Alightings
Hunter Park	241	110	83	182
Moreno Valley/March Field	205	93	70	154
Downtown Perris	134	29	45	207
South Perris	221	0	0	340
Total	**801**	**232**	**198**	**884**
Source: Parsons Brinckerhoff (2009)				

Passengers would arrive at and depart from the stations by a number of travel modes, including private autos, transit buses, and walking. Auto trips would consist of drop-offs/pick-ups and park-and-ride drivers. The modal split of passengers (proportions of different transport modes used by passengers) was derived from the PVL ridership model, which included separate modal splits for passengers traveling to and from the area. However, the same modal split was applied to passengers traveling from the area during the AM and returning to the area during the PM peak period. Similarly, passengers arriving in the area during the AM and leaving during the PM exhibited the same modal splits. For example, for Hunter Park Station, it was assumed that 61 percent of boarding passengers and one percent of alighting passengers would travel to/from the station by auto during the AM peak period, between 5 and 7 AM (see Table 3.5-3). During the PM peak period, between 5 and 7 PM, 61 percent of alighting passengers and one percent of boarding passengers would travel by auto (see Table 3.5-3).

Table 3.5-3
Modal Split of Passengers for the AM Peak Period
(PM peak period modal splits are reversed)

Proposed Station	Percentage of Passengers							
	Walk		Bus		Park-and-Ride		Drop-off/Pick-up	
	Boarding	Alighting	Boarding	Alighting	Boarding	Alighting	Boarding	Alighting
Hunter Park	4	57	9	42	61	1	26	0
Moreno Valley /March Field	0	0	19	99	63	1	18	0
Downtown Perris	20	40	10	52	56	8	14	0
South Perris	3	0	4	56	79	44	14	0

Using these modal splits, 300 drop-offs/pick-ups and 529 park-and-ride trips would be generated by the project within the overall study area during the AM analysis hour, and 302 drop-offs/pick-ups and 530 park-and-ride trips would be generated during the PM analysis hour. Drop-offs/pick-ups were assumed to make a complete in-and-out cycle within the analysis hours, i.e., arrive full and depart empty within the AM analysis hour, and arrive empty and depart full in the PM analysis hour. Table 3.5-4 lists the auto trips by station during the AM and PM analysis hours.

Table 3.5-4
Auto-Trip Generation (Number of Vehicles)

Proposed Station	AM					PM				
	Park-and-Ride		Drop-off/ Pick-up			Park-and-Ride		Drop-off/ Pick-up		
	In	Out	In	Out	Bus	In	Out	In	Out	Bus
Hunter Park	146	2	63	63	2	1	111	47	47	2
Moreno Valley/ March Field	129	1	37	37	4	1	30	28	28	4
Downtown Perris	75	2	19	19	5	4	115	29	29	5
South Perris	174	0	31	31	3	0	268	47	47	3
Total	524	5	150	150	14	6	524	151	151	14

Project Vehicle Assignment

The distribution of auto trips to the stations was developed from the station access maps based on the ridership model as follows:

Hunter Park Station options

As discussed in Section 1.0 Proposed Project, the Hunter Park Station would be located at one of three proximate sites. The Palmyrita Station option is proposed to be located on the east side of the SJBL main track east of Iowa Avenue between Palmyrita and Columbia Avenues. The proposed station access road for this option would connect Palmyrita and Columbia Avenues, and allow entry/exit to the station from both avenues. The Columbia Station option would be along the west side of the main track with only one entry/exit point from Columbia Avenue. The

Marlborough Station option would also be located on the west side of the main track, with a single entry/exit point from Marlborough Avenue.

The project vehicle assignment for all three alternative locations for the Hunter Park Station would be the same in terms of approach routing to the station. Approximately 55 percent of drop-offs/pick-ups and 60 percent of park-and-ride passengers would come from areas north of the station. The majority of these passengers would approach the station from southbound Iowa Avenue (35 percent), with the remaining traveling southbound on Northgate Street or eastbound on Columbia Avenue. About 20 percent of drop-offs/pick-ups and park-and-ride passengers would come from the south via northbound Iowa Avenue. The remaining passengers would approach from the east along Palmyrita Avenue.

Vehicle assignments at the study intersections, particularly individual movements, would differ slightly among the three alternative station locations due to the varying location of the proposed station access road for the Palmyrita Station option, and are presented in Traffic Technical Report D.

Moreno Valley/March Field Station

Almost all of the passengers would come from east of the station. Of the drop-offs/pick-ups, 30 percent would approach the station from westbound Alessandro Boulevard, 35 percent would approach from westbound Cactus Avenue, 15 percent would approach from southbound I-215, and 20 percent would approach from northbound I-215. Park-and-ride passengers would travel westbound on Alessandro Boulevard (35 percent) and Cactus Avenue (25 percent), southbound on I-215 (20 percent) and Old 215 (five percent), or northbound on I-215 (15 percent).

Downtown Perris Station

Approximately 40 percent of drop-offs/pick-ups and 30 percent of park-and-ride passengers would approach the station from the north via southbound Perris Boulevard, 35 percent of park-and-ride passengers and 25 percent of drop-offs/pick-ups would approach from the west via eastbound SR-74, and ten percent of each would approach from the east via westbound SR-74 and from the south via D Street. The remaining would approach from the northwest via A Street.

South Perris Station

The majority of the passengers would come from areas south of the station via I-215 (50 percent of park-and-ride passengers and 30 percent of drop-offs/pick-ups) or by following Murrieta and Goetz Roads to Case Road (15 percent of park-and-ride passengers and 25 percent of drop-offs/pick-ups). The remaining would come from the east via SR-74.

The assignment of vehicle trips generated by the project during the AM and PM analysis hours are presented in Traffic Technical Report D.

Grade Crossings

In addition to impacts at key intersections that would experience increases in traffic volumes as a result of project-generated trips, the PVL could also result in impacts at grade crossings by creating additional delays to vehicles that would be stopped during periods of train movements. However, these additional delays would not be considered significant considering that the project would operate with twelve trains per day and only one train during the peak traffic hours in 2012, and that the wait time of vehicular traffic (30 seconds for typical operations) would not be any more disruptive to traffic operations than a single red phase of a typical traffic signal.

As noted in Chapter 1.0, the project would make improvements to several existing grade crossings including the installation of new signals. These signals would be placed to improve safety and meet jurisdictional requirements, and would remain inactive (i.e. display a steady green signal for vehicular traffic) unless a train is detected.

Further, two existing grade crossings, Poarch Road in Riverside and 6th Street in downtown Perris, are planned to be ~~permanently~~ closed as part of the PVL project. Poarch Road is an unimproved dirt road that provides alternate access to a small number of residences and terminates approximately half a mile north of the grade crossing. It connects with Morton Road via Gernert Road to the south, and provides access to an apartment complex and connection to Box Springs Road. The grade crossing is directly across from the northbound I-215 on-ramp, and thus, is mostly used by drivers wanting to bypass the traffic on Box Springs Road to access northbound I-215. As part of the PVL project, the existing grade crossing at Poarch Road is planned to be closed to the public with access by emergency vehicles only (with a locked gate). The closure of the Poarch Road crossing to the public ~~is~~would not ~~expected to~~ significantly affect the traffic volumes in the area, but may increase traffic volumes on Gernert Road since this will be used as the primary means of access to the adjacent residential neighborhood. While this proposed change could present an inconvenience to some nearby residents, the impact would not be significant. In Perris, as part of the PVL project, the existing grade crossing at 6th Street is planned to be closed. The closure of the grade crossing at 6th Street would result in the diversion of east and westbound traffic (up to 35 vph per direction during the AM and PM analysis hours) to 7th Street, the closest grade crossing to remain open. The changes in traffic volumes due to this diversion would be less than ~~in~~significant, and are reflected in the 2012 analyses with the project.

It should be noted that in downtown Perris, as part of the Perris Multimodal Transit Facility project (not a part of the PVL project), grade crossings at 2nd and 5th Streets were closed in 2008. The impacts of these closures on travel patterns are already incorporated into the existing traffic network and analyses as the closures were in effect at the time the traffic data collection program was conducted. In addition, 5th Street has been temporarily closed by the ~~c~~City of Perris and will be formally vacated for this project.

In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. In terms of traffic volumes, a count of vehicle movements taken in mid-November 2010 indicated that fewer than five vehicles travel through this intersection in any one hour during the day, and most hours show no vehicles at all using it. Although this closure would affect few vehicles, 9th Street, which is currently a dirt road, would be paved to accommodate local property access. As there would be little inconvenience to the current low volumes along Commercial Street, and motorists can access Commercial Street via Perris Boulevard less than one-quarter mile south of D Street, the closure of Commercial Street would not be a significant impact.

The total 2012 traffic volumes with the project during the AM and PM analysis hours are presented in Traffic Technical Report D.

Significant Impact Criteria

The identification of potential significant traffic impacts was based on the guidelines for the cities and County. ~~A d~~Deterioration in LOS from ~~LOS~~ A, B, C, or D conditions without the project to LOS E or F conditions with the project is considered a significant impact. For LOS E or F conditions without the project, an increase of two or more seconds of delay as a result of the project is also considered significant.

2012 Future Conditions with the Project

The level-of-service analyses for the 2012 Future Conditions with the Project indicated that the majority of the study intersections would continue to operate at the same levels of service as the 2012 conditions without the PVL; however, significant traffic impacts would be expected at a number of study area intersections as a result of the increase in traffic volumes (due to new vehicular trips generated by the project) as shown in Table 3.5-5 through Table 3.5-8.

Hunter Park Station options

No impacts would be expected at the study intersections in the vicinity of Hunter Park Station for any of the three alternative station locations, as shown in Table 3.5-5.

Table 3.5-5
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour			PM Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS
Palmyrita Option								
Center Street at Iowa Avenue – Signalized								
Center Street	EB	LTR	0.63	40.7	D	0.95	51.1	D
	WB	L	0.25	31.2	C	0.43	32.3	C
		T	0.52	34.5	C	0.83	52.8	D
		R	0.07	29.6	C	0.20	30.4	C
Iowa Avenue	NB	L	0.31	43.9	D	0.38	32.0	C
		T	0.56	36.6	D	1.21	134.7	F
		R	0.10	31.7	C	0.15	23.1	C
	SB	L	0.12	42.1	D	0.39	38.7	D
		T	0.55	36.2	D	0.60	28.7	C
		R	0.05	31.3	C	0.05	23.8	C
Overall Intersection		**-**		**36.7**	**D**		**76.3**	**E**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour			PM Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS
Palmyrita Avenue at Iowa Avenue – Signalized								
Palmyrita Avenue	EB	LT	0.13	11.6	B	0.09	13.6	B
		R	0.02	10.9	B	0.06	13.4	B
	WB	L	0.46	14.2	B	0.90	39.4	D
		TR	0.07	11.2	B	0.44	15.8	B
Iowa Avenue	NB	L	0.16	32.0	C	0.09	24.7	C
		T	0.33	19.9	B	0.80	21.0	C
		R	0.11	18.6	B	0.26	13.9	B
	SB	L	0.84	52.8	D	0.46	27.8	C
		T	0.46	19.5	B	0.62	16.8	B
		R	0.01	16.5	B	0.01	12.5	B
Overall Intersection		**-**		**21.8**	**C**		**21.6**	**C**
Columbia Avenue at Iowa Avenue – Signalized								
Columbia Avenue	EB	L	0.22	42.0	D	0.43	32.2	C
		T	0.46	33.6	C	0.22	28.7	C
		R	0.16	30.4	C	0.43	30.6	C
	WB	L	0.26	42.4	D	0.75	43.3	D
		T	0.10	29.8	C	0.45	30.4	C
		R	0.04	29.3	C	0.14	28.2	C
Iowa Avenue	NB	L	0.44	42.4	D	0.71	41.5	D
		T	0.47	29.9	C	0.89	36.4	D
		R	0.22	27.5	C	0.08	20.4	C
	SB	L	0.28	40.9	D	0.07	35.3	D
		T	0.59	31.8	C	0.89	37.8	D
		R	0.08	26.1	C	0.11	22.0	C
Overall Intersection		**-**		**32.4**	**C**		**36.0**	**D**
Marlborough Avenue at Iowa Avenue – Signalized								
Marlborough Avenue	EB	L	0.32	27.5	C	0.45	28.6	C
		TR	0.43	30.4	C	0.30	30.8	C
	WB	L	0.19	26.5	C	0.60	31.7	C
		T	0.05	27.5	C	0.29	30.7	C
		R	0.19	28.3	C	0.44	32.1	C
Iowa Avenue	NB	L	0.16	26.3	C	0.15	32.6	C
		T	0.54	17.1	B	0.68	18.8	B
		R	0.06	13.7	B	0.02	12.8	B
	SB	L	0.26	22.0	C	0.18	32.8	C
		T	0.44	14.9	B	0.90	28.0	C
		R	0.04	12.4	B	0.03	12.8	B
Overall Intersection		**-**		**18.0**	**B**		**25.2**	**C**
Palmyrita Avenue at Station Access Road – Signalized								
Palmyrita Avenue	EB	TR	0.27	5.9	A	0.37	6.5	A
	WB	LT	0.34	6.3	A	0.36	6.4	A
Station Access Road	NB	L	0.12	19.9	B	0.28	20.9	C
		R	0.04	19.5	B	0.14	20.0	C
Overall Intersection		**-**		**7.5**	**A**		**8.8**	**A**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
Columbia Avenue at Station Access Road – Signalized								
Columbia Avenue	EB	L	0.20	5.6	A	0.06	5.0	A
		T	0.17	5.5	A	0.08	5.1	A
	WB	TR	0.10	5.1	A	0.13	5.3	A
Station Access Road	SB	L	0.02	19.3	B	0.04	19.4	B
		R	0.10	19.8	B	0.26	20.8	C
Overall Intersection		**-**		**7.0**	**A**		**10.0**	**A**
Palmyrita Avenue at Northgate Street – Unsignalized								
Palmyrita Avenue	EB	L	0.06	7.7	A	0.24	9.4	A
Northgate Street	SB	L	0.16	12.4	B	0.33	32.8	D
		R	0.24	9.7	A	0.17	10.4	B
Columbia Avenue at Northgate Street – Unsignalized								
Columbia Avenue	EB	T	0.12	8.8	A	0.06	8.9	A
		TR	0.15	8.8	A	0.08	8.8	A
	WB	L	0.14	9.6	A	0.56	14.9	B
		T	0.10	8.7	A	0.20	8.9	A
Northgate Street	NB	L	0.04	8.2	A	0.02	8.6	A
		R	0.26	8.7	A	0.15	8.5	A
Overall Intersection		**-**		**8.8**	**A**		**11.8**	**B**
Marlborough Avenue at Northgate Street – Unsignalized								
Marlborough Avenue	EB	LT	0.20	7.8	A	0.08	7.5	A
Northgate Street	SB	LR	0.12	9.8	A	0.34	10.4	B
Marlborough Avenue at Rustin Avenue – Unsignalized								
Marlborough Avenue	WB	L	0.03	7.8	A	0.18	8.1	A
Rustin Avenue	NB	LR	0.36	12.3	B	0.31	16.0	C
Columbia Option								
Center Street at Iowa Avenue – Signalized								
Center Street	EB	LTR	0.63	40.7	D	0.95	51.1	D
	WB	L	0.25	31.2	C	0.43	32.3	C
		T	0.52	34.5	C	0.83	52.8	D
		R	0.07	29.6	C	0.20	30.4	C
Iowa Avenue	NB	L	0.31	43.9	D	0.38	32.0	C
		T	0.56	36.6	D	1.21	134.7	F
		R	0.10	31.7	C	0.15	23.1	C
	SB	L	0.12	42.1	D	0.39	38.7	D
		T	0.55	36.2	D	0.60	28.7	C
		R	0.05	31.3	C	0.05	23.8	C
Overall Intersection		**-**		**36.7**	**D**		**76.3**	**E**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
Palmyrita Avenue at Iowa Avenue – Signalized								
Palmyrita Avenue	EB	LT	0.13	11.6	B	0.09	13.6	B
		R	0.02	10.9	B	0.06	13.4	B
	WB	L	0.46	14.1	B	0.89	38.6	D
		TR	0.03	11.0	B	0.30	14.8	B
Iowa Avenue	NB	L	0.16	32.0	C	0.09	24.7	C
		T	0.36	20.1	C	0.86	23.5	C
		R	0.11	18.6	B	0.26	13.9	B
	SB	L	0.43	28.4	C	0.32	26.3	C
		T	0.54	20.3	C	0.64	17.1	B
		R	0.01	16.5	B	0.01	12.5	B
Overall Intersection		**-**		**18.9**	**B**		**22.6**	**C**
Columbia Avenue at Iowa Avenue – Signalized								
Columbia Avenue	EB	L	0.22	42.0	D	0.43	32.2	C
		T	0.46	33.6	C	0.22	28.7	C
		R	0.16	30.4	C	0.43	30.6	C
	WB	L	0.27	42.5	D	0.75	43.5	D
		T	0.10	29.8	C	0.45	30.4	C
		R	0.12	30.0	C	0.39	30.4	C
Iowa Avenue	NB	L	0.44	42.4	D	0.71	41.5	D
		T	0.47	29.9	C	0.89	36.4	D
		R	0.22	27.5	C	0.08	20.4	C
	SB	L	0.66	49.2	D	0.18	36.0	D
		T	0.58	31.7	C	0.89	37.8	D
		R	0.08	26.1	C	0.11	22.0	C
Overall Intersection		**-**		**33.4**	**C**		**35.9**	**D**
Marlborough Avenue at Iowa Avenue – Signalized								
Marlborough Avenue	EB	L	0.32	27.5	C	0.45	28.6	C
		TR	0.43	30.4	C	0.30	30.8	C
	WB	L	0.19	26.5	C	0.60	31.7	C
		T	0.05	27.5	C	0.29	30.7	C
		R	0.19	28.3	C	0.44	32.1	C
Iowa Avenue	NB	L	0.16	26.3	C	0.15	32.6	C
		T	0.54	17.1	B	0.68	18.8	B
		R	0.06	13.7	B	0.02	12.8	B
	SB	L	0.26	22.0	C	0.18	32.8	C
		T	0.44	14.9	B	0.90	27.9	C
		R	0.04	12.4	B	0.03	12.8	B
Overall Intersection		**-**		**18.0**	**B**		**25.2**	**C**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
Columbia Avenue at Station Access Road – Signalized								
Columbia Avenue	EB	L	0.38	6.7	A	0.09	5.2	A
		T	0.17	5.5	A	0.08	5.1	A
	WB	TR	0.16	5.4	A	0.15	5.3	A
Station Access Road	SB	L	0.07	19.6	B	0.19	20.3	C
		R	0.22	20.5	C	0.53	23.1	C
Overall Intersection		**-**		**8.3**	**A**		**13.5**	**B**
Palmyrita Avenue at Northgate Street – Unsignalized								
Palmyrita Avenue	EB	L	0.06	7.6	A	0.22	9.4	A
Northgate Street	SB	L	0.21	12.4	B	0.32	29.8	D
		R	0.20	9.5	A	0.17	10.5	B
Columbia Avenue at Northgate Street – Unsignalized								
Columbia Avenue	EB	T	0.13	9.1	A	0.09	9.1	A
		TR	0.16	9.1	A	0.12	9.1	A
	WB	L	0.15	9.7	A	0.56	15.1	C
		T	0.24	9.9	A	0.23	9.2	A
Northgate Street	NB	L	0.05	8.5	A	0.02	8.7	A
		R	0.28	9.1	A	0.16	8.7	A
Overall Intersection		**-**		**9.3**	**A**		**11.9**	**B**
Marlborough Avenue at Northgate Street – Unsignalized								
Marlborough Avenue	EB	LT	0.20	7.8	A	0.08	7.5	A
Northgate Street	SB	LR	0.12	9.8	A	0.34	10.4	B
Marlborough Avenue at Rustin Avenue – Unsignalized								
Marlborough Avenue	WB	L	0.03	7.8	A	0.18	8.1	A
Rustin Avenue	NB	LR	0.36	12.3	B	0.31	16.0	C
Marlborough Option								
Center Street at Iowa Avenue – Signalized								
Center Street	EB	LTR	0.63	40.7	D	0.95	51.1	D
	WB	L	0.25	31.2	C	0.43	32.3	C
		T	0.52	34.5	C	0.83	52.8	D
		R	0.07	29.6	C	0.20	30.4	C
Iowa Avenue	NB	L	0.31	43.9	D	0.38	32.0	C
		T	0.56	36.6	D	1.21	134.7	F
		R	0.10	31.7	C	0.15	23.1	C
	SB	L	0.12	42.1	D	0.39	38.7	D
		T	0.55	36.2	D	0.60	28.7	C
		R	0.05	31.3	C	0.05	23.8	C
Overall Intersection		**-**		**36.7**	**D**		**76.3**	**E**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour			PM Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS
Palmyrita Avenue at Iowa Avenue – Signalized								
Palmyrita Avenue	EB	LT	0.13	11.6	B	0.09	13.6	B
		R	0.02	10.9	B	0.06	13.4	B
	WB	L	0.46	14.1	B	0.89	38.6	D
		TR	0.03	11.0	B	0.30	14.8	B
Iowa Avenue	NB	L	0.16	32.0	C	0.09	24.7	C
		T	0.36	20.1	C	0.86	23.5	C
		R	0.11	18.6	B	0.26	13.9	B
	SB	L	0.43	28.4	C	0.32	26.3	C
		T	0.54	20.3	C	0.64	17.1	B
		R	0.01	16.5	B	0.01	12.5	B
Overall Intersection		**-**		**18.9**	**B**		**22.6**	**C**
Columbia Avenue at Iowa Avenue – Signalized								
Columbia Avenue	EB	L	0.22	42.0	D	0.44	32.8	C
		T	0.34	32.2	C	0.18	28.9	C
		R	0.29	31.7	C	0.48	31.7	C
	WB	L	0.19	41.8	D	0.63	37.1	D
		T	0.07	29.6	C	0.39	30.3	C
		R	0.04	29.3	C	0.14	28.7	C
Iowa Avenue	NB	L	0.50	43.2	D	0.81	49.3	D
		T	0.49	30.2	C	0.92	39.6	D
		R	0.11	26.4	C	0.05	19.9	B
	SB	L	0.28	40.9	D	0.07	35.8	D
		T	0.67	33.6	C	0.91	41.3	D
		R	0.08	26.1	C	0.11	22.4	C
Overall Intersection		**-**		**33.1**	**C**		**38.6**	**D**
Marlborough Avenue at Iowa Avenue – Signalized								
Marlborough Avenue	EB	L	0.32	27.5	C	0.45	28.6	C
		TR	0.43	30.4	C	0.30	30.8	C
	WB	L	0.27	27.1	C	0.75	39.9	D
		T	0.06	27.6	C	0.29	30.7	C
		R	0.52	31.8	C	0.80	52.8	D
Iowa Avenue	NB	L	0.16	26.3	C	0.15	32.6	C
		T	0.51	16.7	B	0.67	18.7	B
		R	0.15	14.2	B	0.04	12.9	B
	SB	L	0.65	27.7	C	0.45	35.3	D
		T	0.43	14.8	B	0.87	26.1	C
		R	0.04	12.4	B	0.03	12.8	B
Overall Intersection		-		**19.3**	**B**		**26.3**	**C**
Columbia Avenue at Station Access Road – Signalized								
Columbia Avenue	EB	L	0.40	6.8	A	0.10	5.2	A
		T	0.19	5.5	A	0.14	5.3	A
	WB	TR	0.19	5.5	A	0.21	5.6	A
Station Access Road	SB	L	0.07	19.6	B	0.19	20.3	C
		R	0.22	20.5	C	0.53	23.1	C
Overall Intersection		**-**		**8.2**	**A**		**12.1**	**B**

Table 3.5-5 (cont'd)
Hunter Park Station Options 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
Palmyrita Avenue at Northgate Street – Unsignalized								
Palmyrita Avenue	EB	L	0.06	7.6	A	0.22	9.4	A
Northgate Street	SB	L	0.22	12.5	B	0.32	29.8	D
		R	0.20	9.5	A	0.17	10.5	B
Columbia Avenue at Northgate Street – Unsignalized								
Columbia Avenue	EB	T	0.12	9.1	A	0.05	9.0	A
		TR	0.15	9.1	A	0.08	8.9	A
	WB	L	0.30	11.2	B	0.60	16.2	C
		T	0.10	8.8	A	0.21	9.1	A
Northgate Street	NB	L	0.05	8.5	A	0.02	8.6	A
		R	0.31	9.4	A	0.21	9.0	A
Overall Intersection		**-**		**9.7**	**A**		**12.5**	**B**
Marlborough Avenue at Northgate Street – Unsignalized								
Marlborough Avenue	EB	LT	0.22	7.9	A	0.11	7.6	A
Northgate Street	SB	LR	0.20	9.9	A	0.35	10.5	B
Marlborough Avenue at Rustin Avenue – Unsignalized								
Marlborough Avenue	WB	L	0.03	7.9	A	0.19	8.3	A
Rustin Avenue	NB	LR	0.38	13.1	B	0.34	17.9	C

Notes:
1. "EB" refers to the eastbound direction, "WB" to westbound, "NB" to northbound, and "SB" to southbound.
2. "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right-turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed. DefL is a defacto left-turn lane automatically input by the HCS software when the volume of the left turns is high enough to create a "natural" turn lane to accommodate the demand; though movements would then use the adjacent travel lane.
3. V/C is the volume-to-capacity ratio for the Mvt. Listed in the first column. Values above 1.0 indicate an excess of demand over capacity.
4. Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (seconds/vehicle) for each lane group listed in the Mvt. Column as noted in the 2000 HCM-TRB.
5. The delay calculation for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.
6. LOS for unsignalized intersections is based upon total average delay per vehicle (seconds/vehicle) for each lane group listed in the Mvt. Column as noted in the 2000 HCM-TRB.

Moreno Valley/March Field Station

Westbound Cactus Avenue's through movement at Old 215 would experience a significant impact by incurring just over two seconds of delay within LOS F during the PM analysis hour (Mitigation Measure TP-1), as shown in Table 3.5-6.

Table 3.5-6
Moreno Valley/March Field Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour			PM Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS
Cactus Avenue at Southbound I-215 Ramps – Signalized								
Cactus Avenue	EB	T	0.21	13.0	B	0.82	22.8	C
	WB	L	0.94	35.1	D	1.73	349.1	F
		T	0.18	0.0	A	0.09	0.0	A
Overall Intersection		**-**		**18.7**	**B**		**196.9**	**F**
Cactus Avenue at Old 215 – Signalized								
Cactus Avenue	EB	L	0.34	14.9	B	0.49	17.1	B
		TR	0.41	13.5	B	0.72	16.4	B
	WB	T	1.01	46.0	D	1.48	239.9	F
		R	0.11	11.4	B	0.16	10.4	B
Old 215	NB	L	0.38	16.0	B	0.26	20.0	B
		TR	0.13	13.9	B	0.09	18.5	B
	SB	L	0.06	13.5	B	0.21	19.4	B
		TR	0.16	14.1	B	0.31	20.3	C
Overall Intersection		**-**		**32.2**	**C**		**146.3**	**F**
Alessandro Boulevard at Old 215 – Signalized								
Alessandro Boulevard	EB	L	0.33	29.1	C	0.51	38.4	D
		T	0.58	20.1	C	0.93~~2~~	36.9	D
	WB	L	0.14	28.1	C	0.10	35.7	D
		T	0.77	24.4	C	0.77	26.1	C
Old 215	NB	L	0.49	32.8	C	0.63	40.9	D
		T	0.25	30.3	C	0.12	33.9	C
	SB	L	0.04	29.2	C	0.19	33.8	C
		T	0.03	29.2	C	0.11	33.9	C
Overall Intersection		**-**		**24.1**	**C**		**33.0**	**C**
Alessandro Boulevard at Mission Grove Parkway – Signalized								
Alessandro Boulevard	EB	L	0.18	44.3	D	0.38	53.4	D
		T	0.40	17.9	B	0.99	41.7	D
		R	0.03	14.6	B	0.16	15.1	B
	WB	L	0.36	45.2	D	0.72	59.6	E
		T	0.88	28.8	C	0.76	23.1	C
		R	0.08	15.0	B	0.11	14.7	B
Mission Grove Parkway	NB	L	0.39	45.5	D	0.35	50.9	D
		T	0.76	54.4	D	0.38	46.8	D
		R	0.46	41.9	D	0.49	48.2	D
	SB	L	0.56	50.1	D	0.83	78.2	E
		TR	0.34	40.2	D	0.32	45.9	D
Overall Intersection		**-**		**29.7**	**C**		**37.2**	**D**

Downtown Perris Station

Significant impacts would be expected at ~~four~~ two study intersections during the PM analysis hour as shown in Table 3.5-7:

- At the intersection of SR-74 (4th Street) and D Street, north and southbound D Street's through/left-turn movements would incur approximately ten and 20 seconds of additional delay within LOS F, respectively (Mitigation Measure TP-2).

- ~~At the intersection of San Jacinto Avenue and C Street, westbound San Jacinto Avenue's left-turn movement would sustain over five seconds of increase in delay within LOS F, and the overall intersection would deteriorate from LOS E to F (Mitigation Measure TP-3).~~

- ~~At San Jacinto Avenue and D Street, San Jacinto Avenue's eastbound left-turn and D Street's southbound through movements would incur eleven and 17 seconds of delay within LOS F, respectively. Northbound D Street through/right-turn shared movement would worsen from LOS E to F (Mitigation Measure TP-4).~~

- At San Jacinto Avenue and Redlands Avenue, westbound San Jacinto Avenue's through/left-turn movements and northbound Redlands Avenue would incur four to eight seconds of additional delay within LOS F.

Table 3.5-7
Downtown Perris Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
SR-74 at Navajo Road – Signalized								
SR-74	EB	L	0.13	26.9	C	0.23	30.5	C
		T	0.28	4.8	A	0.52	5.3	A
	WB	TR	0.39	10.9	B	1.04	52.5	D
Navajo Road	SB	L	0.27	19.3	B	0.71	31.6	C
		R	0.01	17.9	B	0.03	24.2	C
Overall Intersection		**-**		**9.8**	**A**		**32.8**	**C**
SR-74 at C Street – Signalized								
SR-74	EB	L	0.61	21.3	C	0.92	50.4	D
		TR	0.51	9.8	A	0.76	16.2	B
	WB	L	0.04	24.2	C	0.09	23.9	C
		TR	0.80	25.9	C	0.97	41.5	D
C Street	NB	L	0.00	24.0	C	0.00	23.5	C
		TR	0.07	20.0	B	0.12	19.8	B
	SB	L	0.08	24.4	C	0.09	23.9	C
		TR	0.32	21.5	C	0.80	35.4	D
Overall Intersection		**-**		**17.8**	**B**		**31.5**	**C**

Table 3.5-7 (cont'd)
Downtown Perris Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
SR-74 at D Street – Signalized								
SR-74	EB	L	0.62	32.6	C	0.62	32.5	C
		TR	0.65	24.2	C	1.06	71.9	E
	WB	L	0.07	25.9	C	0.16	26.5	C
		TR	0.46	21.5	C	0.75	26.9	C
D Street	NB	LT	0.43	21.5	C	1.32	192.7	F
		R	0.02	18.1	B	0.09	18.6	B
	SB	LT	0.26	19.9	B	1.37	216.9	F
		R	0.08	18.5	B	0.16	19.1	B
Overall Intersection		**-**		**23.6**	**C**		**86.8**	**F**
SR-74 at Perris Boulevard – Signalized								
SR-74	EB	L	0.60	30.2	C	0.84	49.7	D
		TR	0.44	17.1	B	0.70	20.6	C
	WB	L	0.18	25.0	C	0.56	36.4	D
		TR	0.35	16.4	B	0.59	22.5	C
Perris Boulevard	NB	L	0.11	18.3	B	0.76	39.0	D
		T	0.32	19.7	B	0.76	30.2	C
		R	0.06	18.0	B	0.19	20.0	C
	SB	L	0.15	18.7	B	1.24	186.8	F
		T	0.25	19.2	B	0.63	25.6	C
		R	0.08	18.1	B	0.17	19.9	B
Overall Intersection		**-**		**19.1**	**B**		**34.2**	**C**
San Jacinto Avenue at Perris Boulevard – Signalized								
San Jacinto Avenue	EB	L	0.18	30.0	C	0.71	48.4	D
		TR	0.27	30.7	C	0.29	27.0	C
	WB	L	0.06	29.3	C	0.08	34.8	C
		T	0.14	29.8	C	0.18	26.1	C
		R	0.17	30.1	C	0.28	27.0	C
Perris Boulevard	NB	L	0.45	35.8	D	0.45	41.6	D
		TR	0.36	11.7	B	0.90	44.1	D
	SB	L	0.14	32.6	C	0.47	41.8	D
		TR	0.32	11.4	B	0.95	52.7	D
Overall Intersection		**-**		**16.3**	**B**		**44.1**	**D**
Nuevo Road at Perris Boulevard – Signalized								
Nuevo Road	EB	L	0.37	34.2	C	1.39	214.1	F
		T	0.31	27.0	C	0.83	32.9	C
		R	0.08	25.1	C	0.25	22.3	C
	WB	L	0.30	33.6	C	0.57	32.9	C
		TR	0.25	26.4	C	0.47	26.5	C
		R	0.05	24.9	C	0.31	25.8	C
Perris Boulevard	NB	L	0.40	34.0	C	0.88	52.2	D
		T	0.17	28.0	C	0.57	25.5	C
		R	0.10	27.5	C	0.28	23.3	C
	SB	L	0.22	38.7	D	0.95	66.0	E
		T	0.19	31.1	C	0.82	32.8	C
		R	0.05	15.3	B	0.52	16.7	B
Overall Intersection		**-**		**29.4**	**C**		**65.7**	**E**

Table 3.5-7 (cont'd)
Downtown Perris Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
San Jacinto Avenue at D Street - Signalized								
San Jacinto Avenue	EB	L	0.65	27.4	C	0.88	45.0	D
		T	0.00	13.8	B	0.03	15.4	B
		R	0.01	13.9	B	0.01	15.3	B
	WB	L	0.36	31.5	C	0.41	37.2	D
		TR	0.29	26.0	C	0.64	37.5	D
D Street	NB	L	0.06	29.0	C	0.11	34.6	C
		TR	0.67	23.8	C	0.85	40.7	D
	SB	L	0.52	33.7	C	0.61	37.0	D
		T	0.45	19.6	B	0.67	22.4	C
		R	0.19	17.7	B	0.47	18.6	B
Overall Intersection		**-**		**24.2**	**C**		**32.7**	**C**
San Jacinto Avenue at C Street – Unsignalized								
San Jacinto Avenue	EB	LTR	0.00	7.8	A	0.00~~7~~	~~9.~~7.2	A
	WB	LT	0.08~~23~~	7.5~~10.2~~	B	0.33~~1.07~~	~~81.3~~8.4	A~~F~~
C Street	NB	~~TR~~L	0.00~~4~~	~~7.8~~10.7	A	0.00~~1~~	30.4~~8.2~~	D~~A~~
~~C Street~~	~~NB~~	~~L~~TR	0.24~~8~~	9.4~~8.3~~	A	0.23~~56~~	~~14.~~8.0	A~~B~~
	SB	LTR	0.01	~~7.9~~14.2	A	0.1~~0~~5	~~10.5~~33.8	D~~B~~
~~**Overall Intersection**~~		~~-~~		~~**8.9**~~	~~**A**~~		~~**52.9**~~	~~**F**~~
~~**San Jacinto Avenue at D Street – Unsignalized**~~								
~~San Jacinto Avenue~~	~~EB~~	~~L~~	~~0.55~~	~~18.9~~	~~C~~	~~0.97~~	~~65.6~~	~~F~~
~~-~~		~~TR~~	~~0.01~~	~~9.2~~	~~A~~	~~0.06~~	~~11.1~~	~~B~~
~~-~~	~~WB~~	~~L~~	~~0.09~~	~~11.8~~	~~B~~	~~0.12~~	~~13.6~~	~~B~~
~~-~~		~~TR~~	~~0.14~~	~~10.8~~	~~B~~	~~0.32~~	~~15.5~~	~~C~~
~~D Street~~	~~NB~~	~~L~~	~~0.02~~	~~9.9~~	~~A~~	~~0.03~~	~~11.7~~	~~B~~
~~-~~		~~TR~~	~~0.67~~	~~21.7~~	~~C~~	~~0.90~~	~~49.5~~	~~E~~
~~-~~	~~SB~~	~~L~~	~~0.12~~	~~10.8~~	~~B~~	~~0.32~~	~~15.2~~	~~C~~
~~-~~		~~T~~	~~0.42~~	~~14.0~~	~~B~~	~~1.05~~	~~84.4~~	~~F~~
~~-~~		~~R~~	~~0.20~~	~~10.0~~	~~A~~	~~0.81~~	~~34.1~~	~~D~~
~~**Overall Intersection**~~		~~-~~		~~**16.3**~~	~~**C**~~		~~**55.8**~~	~~**F**~~
San Jacinto Avenue at Redlands Avenue – Unsignalized								
San Jacinto Avenue	EB	L	0.14	10.8	B	0.26	16.5	C
		TR	0.12	9.3	A	0.41	18.8	C
	WB	LT	0.37	13.3	B	1.68	338.3	F
		R	0.07	8.6	A	0.58	21.6	C
Redlands Avenue	NB	LT	0.29	11.4	B	1.36	200.0	F
		R	0.15	9.1	A	1.58	292.8	F
	SB	L	0.04	9.6	A	0.87	51.3	F
		TR	0.41	12.8	B	0.44	18.2	C
Overall Intersection		**-**		**11.6**	**B**		**194.7**	**F**
6th Street at C Street – Unsignalized								
6th Street	EB	LTR	0.01	7.2	A	0.01	7.2	A
C Street	NB	LT	0.00	8.8	A	0.03	9.3	A
	SB	TR	0.02	9.4	A	0.05	9.3	A

Table 3.5-7 (cont'd)
Downtown Perris Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
6th Street at D Street – Unsignalized								
6th Street	WB	LR	0.01	10.6	B	0.06	11.3	B
D Street	SB	LT	0.00	7.8	A	0.01	7.8	A
7th Street at C Street – Unsignalized								
7th Street	EB	LTR	0.00	7.3	A	0.00	7.4	A
	WB	LTR	0.00	7.3	A	0.02	7.3	A
C Street	NB	LTR	0.01	8.7	A	0.02	8.8	A
	SB	LTR	0.03	9.1	A	0.08	10.3	B
7th Street at D Street – Unsignalized								
7th Street	EB	LTR	0.08	11.5	B	0.24	17.8	C
	WB	LTR	0.02	11.7	B	0.16	18.5	C
D Street	NB	LTR	0.00	7.5	A	0.03	8.0	A
	SB	LTR	0.00	7.8	A	0.01	7.9	A
7th Street at Perris Boulevard – Unsignalized								
7th Street	EB	LTR	0.07	11.8	B	0.27	22.8	C
	WB	LTR	0.01	11.2	B	0.19	18.0	C
Perris Boulevard	NB	LTR	0.00	7.7	A	0.00	8.3	A
	SB	LTR	0.00	7.9	A	0.01	8.2	A

South Perris Station

Significant impacts would be expected at all three study intersections as shown in Table 3.5-8.

- Eastbound Bonnie Drive's left-turn movement at southbound I-215 ramps would deteriorate from LOS D to F during the AM and PM analysis hours, and right-turn movement would worsen within LOS F by incurring approximately 240 seconds of additional delay during the PM analysis hour (Mitigation Measure TP-3~~5~~).

- SR-74 at northbound I-215 off-ramp would deteriorate from LOS D to E during the AM and PM analysis hours.

- At the intersection of SR-74, Sherman Road's northbound left-turn movement onto SR-74 would incur approximately 110 and 290 seconds of additional delay within LOS F during the respective AM and PM analysis hours. Southbound Sherman Road would deteriorate from LOS E to F during the AM, and worsen within LOS F by incurring 160 seconds of additional delay during the PM analysis hours.

Table 3.5-8
South Perris Station 2012 Future Levels of Service with the Project

Intersection and Approach		Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
Relocated Mapes Road at Station Access Road – Signalized								
Relocated Mapes Road	EB	L	0.13	5.8	A	0.03	7.6	A
		T	0.08	5.5	A	0.20	8.4	A
	WB	TR	0.33	6.6	A	0.18	8.3	A
Station Access Road	SB	L	0.14	17.6	B	0.92	38.8	D
		R	0.04	17.1	B	0.19	14.4	B
Overall Intersection		**-**		**7.3**	**A**		**21.4**	**C**
Bonnie Drive at Southbound I-215 Ramps – Unsignalized								
Bonnie Drive	EB	L	0.30	78.5	F	1.51	320.2	F
		R	0.36	18.7	C	1.78	397.2	F
Southbound I-215 Ramps	NB	L	0.63	15.9	C	0.47	15.5	C
SR-74 at Northbound I-215 Off Ramp – Unsignalized								
SR-74	EB	L	0.01	8.7	A	0.03	8.3	A
I-215 Northbound Off-Ramp	SB	LR	0.80	43.9	E	0.69	42.5	E
SR-74 at Sherman Road – Unsignalized								
SR-74	EB	L	0.09	13.4	B	0.08	10.5	B
	WB	L	0.11	10.1	B	0.21	14.5	B
Sherman Road	NB	L	1.02	304.4	F	2.00	854.1	F
		R	0.21	12.6	B	0.42	20.6	C
	SB	LR	0.53	52.3	F	1.71	592.9	F

Station Parking

In general, auto trip generation listed in Table 3.5-4 represents about half of the daily total demand that would require parking at each PVL station. Thus, doubling the high auto park-and-ride volumes in this table would yield a daily demand of between approximately 230 and 540 spaces. The station designs would provide between approximately 440 and 880 spaces to satisfy station auto demands, as follows:

- Hunter Park – approximately 480 spaces provided; demand for approximately 300 spaces in opening year (63 percent utilization)
- Moreno Valley/March Field – approximately 445 spaces provided; demand for approximately 260 spaces in opening year (59 percent)
- Downtown Perris – approximately 440 spaces provided; demand for approximately 230 spaces in opening year (52 percent)
- South Perris – approximately 880 spaces provided, demand for approximately 540 spaces in opening year (61 percent)

Construction Period Impacts

The construction activities for the proposed PVL project would result in an increase of auto and truck trips generated by construction crews, and the delivery/removal of materials to and from the construction sites. It should be noted that for the delivery of construction materials and equipment, such as the rail, rail ties, ballast, and specialized track equipment, would be accomplished using the existing rail, as opposed to being delivered by truck. The volume of construction traffic ~~would be~~is expected to be modest (fewer than 50 vehicles per hour) given that no significant excavation is expected, and most construction-related materials deliveries would likely occur during non-peak hours so as to limit congestion along adjacent roads. In addition, traffic diversions would occur during partial and complete roadway and grade crossing closures. As a result, the construction activities could potentially create short-term significant traffic impacts although, due to their temporary nature, such impacts may be tolerated and the thresholds of significance during construction periods may be redefined by reviewing agencies (Mitigation Measure TP-4~~6~~). RCTC shall develop a traffic management plan in consultation with local jurisdictions that will contain measures proven to improve traffic levels of service and mitigate significant impacts to acceptable levels. RCTC will be responsible for the development and enforcement of this measure.

In terms of estimated truck volumes, the cut/fill estimates were examined to identify volumes of earth that would potentially be moved off site. A conservative approach estimated truck volumes using an average number of tons of material in a cubic yard of earth (1.35 tons/cubic yards) and the typical weight capacity of a dump truck (15 tons/truck). Also, a single work shift was included, though two work shifts per day would be more likely. The estimate yields 30 empty trucks in and 30 filled truck trips out. Again, using a single work shift, this would indicate on average four “ins” and 4 “outs” each hour, which is a low figure not likely to generate any significant traffic impact. Moreover, the cut/fill estimates were calculated for the entire corridor, so it is unlikely that any volume of truck trips would be concentrated in any particular area or through any one intersection.

3.5.4 Mitigation Measures

- **TP-1:** Cactus Avenue at Old 215 (for Moreno Valley/March Field Station)

  Reduce north/southbound Old 215’s maximum green time to 15 seconds during the PM (5-6 PM) analysis hour. This will reduce delays for westbound Cactus Avenue’s through movement from ~~244~~240 to ~~119~~116 seconds, and improve the overall intersection LOS from LOS F with ~~152~~146 seconds of delay to LOS E with ~~76~~72 seconds of delay, while maintaining LOS C for Old 215.

- **TP-2:** SR-74 (4th Street) at D Street (for Downtown Perris Station)

  Reduce the maximum green time for the east/westbound SR-74 left-turn phase to 14 seconds during the PM (5-6 PM) analysis hour. The levels of service for north and southbound D Street’s through/left-turn movements, and the overall intersection, will be improved beyond future levels of service without the project during the PM analysis hour with this mitigation measure.

- ~~**TP-3:** San Jacinto Avenue at C Street (for Downtown Perris Station)~~

  ~~Reconfigure the intersection with two-way stop control on San Jacinto Avenue. Restripe northbound C Street to provide one left/through shared lane and one right-turn lane. These modifications will reduce the delays for the westbound left-turn movement and the overall intersection to LOS C during the PM analysis hour.~~

- ~~**TP-4:** San Jacinto Avenue at D Street (for Downtown Perris Station)~~

  ~~Install a new traffic signal. With this measure, all movements at this intersection will operate within LOS D during both the AM and PM analysis hours.~~

- **TP-3~~5~~:** Bonnie Drive at southbound I-215 ramps (for South Perris Station)

  Install a new traffic signal. This will improve eastbound Bonnie Drive's right-turn movement from LOS F to LOS B during the PM (5-6 PM) analysis hour and left-turn movement from LOS F to LOS C during the AM (6-7 AM) and PM analysis hours.

  *RCTC shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the three above-mentioned intersections will be eliminated (out of the six locations where significant impacts are expected, as shown in Table 3.5-9). At the remaining three locations where significant impacts are expected (San Jacinto and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other projects (unrelated to the PVL) as part of the future condition without the project. Therefore, no mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these three locations by other projects (unrelated to the PVL) does not occur prior to the opening year of the PVL, the installation of traffic signals at these additional locations will be incorporated as PVL project features.

- **TP-4~~6~~:** RCTC shall develop a traffic management plan in consultation with local jurisdictions to minimize impacts to existing traffic levels of service. At a minimum, the traffic management plan ~~will~~ shall address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors. ~~With this measure in place, traffic will operate at acceptable levels.~~

~~RCTC shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the five above-mentioned intersections will be eliminated (out of the eight locations where significant impacts are expected, as shown in Table 3.5-9). At the remaining three locations where significant impacts are expected (San Jacinto~~

~~and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other project initiatives as part of the future conditions without the project. Therefore, no mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these intersections does not occur prior to the opening year of the PVL, the installation of traffic signals at these additional locations shall be required as part of the PVL project.~~

Comparison of future levels of service with and without the project, and with mitigation, is listed in Table 3.5-9.

Table 3.5-9
2012 Future Levels of Service and Mitigation Measures

Intersection and Approach		Mvt.	Without Project			With Project			Mvt.	Mitigated with Project			PVL Mitigation Measures	Notes
			V/C	Control Delay	LOS	V/C	Control Delay	LOS		V/C	Control Delay	LOS		
Moreno Valley/March Field Station														
PM Peak														
Cactus Avenue at Old 215													**TP-1:** Reduce north/southbound Old 215's maximum green time to 15 seconds. Less than significant after mitigation.	
Cactus Avenue	EB	L	0.36	14.1	B	0.49	17.1	B	L	0.41	8.6	A		
		TR	0.71	16.2	B	0.72	16.4	B	TR	0.59	7.6	A		
	WB	T	1.48	237.4	F	1.48	239.9	F	T	1.22	115.7	F		
		R	0.16	10.4	B	0.16	10.4	B	R	0.13	4.9	A		
Old 215	NB	L	0.25	19.8	B	0.26	20.0	B	L	0.47	25.6	C		
		TR	0.09	18.5	B	0.09	18.5	B	TR	0.15	22.5	C		
	SB	L	0.21	19.4	B	0.21	19.4	B	L	0.34	24.1	C		
		TR	0.30	20.2	C	0.31	20.3	C	TR	0.52	25.5	C		
Overall Intersection		-		**145.6**	**F**		**146.3**	**F**			**71.8**	**E**		
Downtown Perris Station														
PM Peak														
SR-74 at D Street													**TP-2**: Reduce the maximum green time for the east/westbound SR-74 left-turn phase to 14 seconds. Less than significant after mitigation.	
SR-74	EB	L	0.57	31.0	C	0.62	32.5	C	L	0.66	34.3	C		
		TR	1.06	71.9	E	1.06	71.9	E	TR	1.05	67.0	E		
	WB	L	0.16	26.5	C	0.16	26.5	C	L	0.17	26.9	C		
		TR	0.76	27.0	C	0.75	26.9	C	TR	0.74	26.0	C		
D Street	NB	LT	1.30	183.1	F	1.32	192.7	F	LT	1.29	176.5	F		
		R	0.09	18.6	B	0.09	18.6	B	R	0.09	18.2	B		
	SB	LT	1.32	194.2	F	1.37	216.9	F	LT	1.32	193.7	F		
		R	0.17	19.2	B	0.16	19.1	B	R	0.16	18.7	B		
Overall Intersection		-		**82.8**	**F**		**86.8**	**F**	-	-	**80.2**	**F**		
~~**San Jacinto Avenue at C Street**~~													~~**TP-3**: Reconfigure the intersection with two-way stop control on San Jacinto Avenue. Restripe northbound C Street. Less than significant after mitigation.~~	
~~San Jacinto Avenue~~	~~EB~~	~~LTR~~	~~0.07~~	~~9.7~~	~~A~~	~~0.07~~	~~9.7~~	~~A~~	~~LTR~~	~~0.07~~	~~12.2~~	~~B~~		
	~~WB~~	~~L~~	~~1.05~~	~~75.7~~	~~F~~	~~1.07~~	~~81.3~~	~~F~~	~~L~~	~~0.72~~	~~19.2~~	~~C~~		
		~~TR~~	~~0.01~~	~~8.2~~	~~A~~	~~0.01~~	~~8.2~~	~~A~~	~~TR~~	~~0.01~~	~~9.0~~	~~A~~		
~~C Street~~	~~NB~~	~~LTR~~	~~0.55~~	~~14.5~~	~~B~~	~~0.56~~	~~14.8~~	~~B~~	~~LT~~	~~0.00~~	~~7.2~~	~~A~~		
	~~SB~~	~~LTR~~	~~0.05~~	~~10.4~~	~~B~~	~~0.05~~	~~10.5~~	~~B~~	~~LTR~~	~~0.02~~	~~8.3~~	~~A~~		
~~**Overall Intersection**~~		~~-~~		~~**49.7**~~	~~**E**~~		~~**52.9**~~	~~**F**~~			~~**19.1**~~	~~**C**~~		

Table 3.5-9 (cont'd)
2012 Future Levels of Service and Mitigation Measures

Intersection and Approach		Mvt.	Without Project V/C	Without Project Control Delay	Without Project LOS	With Project V/C	With Project Control Delay	With Project LOS	Mvt.	Mitigated with Project V/C	Mitigated with Project Control Delay	Mitigated with Project LOS	PVL Mitigation Measures	Notes
~~San Jacinto Avenue at D Street~~														
~~San Jacinto Avenue~~	~~EB~~	~~L~~	~~0.92~~	~~54.2~~	~~F~~	~~0.97~~	~~65.6~~	~~F~~	~~L~~	~~0.88~~	~~45.0~~	~~D~~	~~TP-4:~~ ~~Install new traffic signal.~~ ~~Less than significant after mitigation.~~	
		~~TR~~	~~0.06~~	~~10.8~~	~~B~~	~~0.06~~	~~11.1~~	~~B~~	~~TR~~	~~0.04~~	~~15.4~~	~~B~~		
	~~WB~~	~~L~~	~~0.07~~	~~12.7~~	~~B~~	~~0.12~~	~~13.6~~	~~B~~	~~L~~	~~0.41~~	~~37.2~~	~~D~~		
		~~TR~~	~~0.30~~	~~14.7~~	~~B~~	~~0.32~~	~~15.5~~	~~C~~	~~TR~~	~~0.64~~	~~37.5~~	~~D~~		
~~D Street~~	~~NB~~	~~L~~	~~0.02~~	~~11.4~~	~~B~~	~~0.03~~	~~11.7~~	~~B~~	~~L~~	~~0.11~~	~~34.6~~	~~C~~		
		~~TR~~	~~0.73~~	~~29.3~~	~~D~~	~~0.90~~	~~49.5~~	~~E~~	~~TR~~	~~0.85~~	~~40.7~~	~~D~~		
	~~SB~~	~~L~~	~~0.30~~	~~14.3~~	~~B~~	~~0.32~~	~~15.2~~	~~C~~	~~L~~	~~0.61~~	~~37.0~~	~~D~~		
		~~T~~	~~0.99~~	~~67.4~~	~~F~~	~~1.05~~	~~84.4~~	~~F~~	~~T~~	~~0.67~~	~~22.4~~	~~C~~		
		~~R~~	~~0.76~~	~~28.8~~	~~D~~	~~0.81~~	~~34.1~~	~~D~~	~~R~~	~~0.47~~	~~18.6~~	~~B~~		
~~Overall Intersection~~		~~-~~		**~~44.1~~**	**~~E~~**		**~~55.8~~**	**~~F~~**			**~~32.7~~**	**~~C~~**		
San Jacinto Avenue at Redlands Avenue				Unsignalized			Unsignalized				Signalized			
San Jacinto Avenue	EB	L	0.26	16.5	C	0.26	16.5	C	L	0.68	40.3	D		Installation of a new traffic signal to be completed by a private developer as part of an unrelated development.
		TR	0.41	18.8	C	0.41	18.8	C	TR	0.56	30.2	C		
	WB	LT	1.67	333.9	F	1.68	338.3	F	L	0.94	44.0	D		
		R	0.58	21.6	C	0.58	21.6	C	TR	0.57	18.2	B		
Redlands Avenue	NB	LT	134	193.1	F	1.36	200.0	F	L	0.66	36.7	D		
		R	1.56	284.2	F	1.58	292.8	F	T	0.90	40.6	D		
		-	-	-	-	-	-	-	R	0.66	6.6	A		
	SB	L	0.87	51.3	F	0.87	51.3	F	L	0.92	39.8	D		
		TR	0.44	18.2	C	0.44	18.2	C	TR	0.32	16.0	B		
Overall Intersection		**-**		**189.9**	**F**		**194.7**	**F**	**-**		**27.9**	**C**		
South Perris Station														
AM Peak **Bonnie Drive at Southbound I-215 Ramps**				Unsignalized			Unsignalized				Signalized			
Bonnie Drive	EB	L	0.03	27.8	D	0.30	78.5	F	L	0.07	25.9	C	**TP-3~~5~~:** Install new traffic signal. Less than significant after mitigation.	
		R	0.30	17.5	C	0.36	18.7	C	R	0.54	30.5	C		
Southbound I-215 Ramps	NB	L	0.38	11.7	B	0.63	15.9	C	L	0.91	36.5	D		
		T	N/A	N/A	-	N/A	N/A	-	T	0.20	3.6	A		
	SB	T	N/A	N/A	-	N/A	N/A	-	T	0.89	32.0	C		
		R	N/A	N/A	-	N/A	N/A	-	R	0.08	13.2	B		
Overall Intersection				**N/A**	**-**		**N/A**	**-**			**28.4**	**C**		

Table 3.5-9 (cont'd)
2012 Future Levels of Service and Mitigation Measures

Intersection and Approach		Mvt.	Without Project V/C	Without Project Control Delay	Without Project LOS	With Project V/C	With Project Control Delay	With Project LOS	Mvt.	Mitigated with Project V/C	Mitigated with Project Control Delay	Mitigated with Project LOS	PVL Mitigation Measures	Notes
SR-74 at Northbound I-215 Off-Ramp				Unsignalized			Unsignalized				Signalized			Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in operation for the ~~2012~~ opening year.
SR-74	EB	L	0.01	8.5	A	0.01	8.7	A	L	0.02	4.5	A		
		T	N/A	N/A	-	N/A	N/A	-	T	0.52	11.9	B		
	WB	T	N/A	N/A	-	N/A	N/A	-	T	0.31	10.3	B		
Northbound I-215 Off-Ramp	SB	LR	0.54	28.9	D	0.80	43.9	E	LR	0.77	32.2	C		
Overall Intersection		-		**N/A**	-		**N/A**	-	-	L	**14.9**	**B**		
SR-74 at Sherman Road				Unsignalized			Unsignalized				Signalized			Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in operation for the ~~2012~~ opening year.
SR-74	EB	L	0.09	12.8	B	0.09	13.4	B	L	0.19	8.6	A		
		TR	N/A	N/A	-	N/A	N/A	-	TR	0.53	11.9	B		
	WB	L	0.11	10.0	A	0.11	10.1	B	L	0.24	5.7	A		
		TR	N/A	N/A	-	N/A	N/A	-	TR	0.83	17.9	B		
Sherman Road	NB	L	0.71	192.7	F	1.02	304.4	F	L	0.11	18.9	B		
		R	0.21	12.5	B	0.21	12.6	B	R	0.35	20.5	C		
	SB	LR	0.46	43.4	E	0.53	52.3	F	LR	0.19	19.4	B		
Overall Intersection		-		**N/A**	-		**N/A**	-	-	L	**15.6**	**B**		
PM Peak														
Bonnie Drive at Southbound I-215 Ramps				Unsignalized			Unsignalized				Signalized		**TP-3~~5~~:** Install new traffic signal. Less than significant after mitigation	
Bonnie Drive	EB	L	0.06	28.4	D	1.51	320.2	F	L	0.52	22.2	C		
		R	1.20	159.4	F	1.78	397.2	F	R	0.68	17.2	B		
Southbound I-215 Ramps	NB	L	0.40	14.3	B	0.47	15.5	C	L	0.86	35.3	D		
		T	N/A	N/A	-	N/A	N/A	-	T	0.17	4.3	A		
	SB	T	N/A	N/A	-	N/A	N/A	-	T	1.00	40.8	D		
		R	N/A	N/A	-	N/A	N/A	-	R	0.01	7.1	A		
Overall Intersection	~~-~~		~~**N/A**~~	~~-~~**N/A**		~~**N/A**~~	~~-~~**N/A**	~~-~~		~~**30.2**~~	~~C~~**30.2**	C		

Table 3.5-9 (cont'd)
2012 Future Levels of Service and Mitigation Measures

Intersection and Approach		Mvt.	Without Project			With Project			Mvt.	Mitigated with Project			PVL Mitigation Measures	Notes
			V/C	Control Delay	LOS	V/C	Control Delay	LOS		V/C	Control Delay	LOS		
SR-74 at Northbound I-215 Off-Ramp			Unsignalized			Unsignalized				Signalized				Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in operation for the ~~2012~~ opening year.
SR-74	EB	L	0.02	8.2	A	0.03	8.3	A	L	0.05	4.5	A		
		T	N/A	N/A	-	N/A	N/A	-	T	0.82	17.7	B		
	WB	T	N/A	N/A	-	N/A	N/A	-	T	0.27	10.0	A		
Northbound I-215 Off-Ramp	SB	LR	0.59	32.9	D	0.69	42.5	E	LR	0.46	21.4	C		
Overall Intersection		-		**N/A**	-		**N/A**	-	-	L	**16.2**	**B**		
SR-74 at Sherman Road			Unsignalized			Unsignalized				Signalized				Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in operation for the ~~2012~~ opening year.
SR-74	EB	L	0.07	10.4	B	0.08	10.5	B	L	0.18	6.0	A		
		TR	N/A	N/A	-	N/A	N/A	-	TR	0.82	17.8	B		
	WB	L	0.19	13.4	B	0.21	14.5	B	L	0.41	10.1	B		
		TR	N/A	N/A	-	N/A	N/A	-	TR	0.60	12.8	B		
Sherman Road	NB	L	1.48	563.9	F	2.00	854.1	F	L	0.12	18.9	B		
		R	0.39	18.6	C	0.42	20.6	C	R	0.46	21.6	C		
	SB	LR	1.40	431.7	F	1.71	529.9	F	LR	0.19	19.2	B		
Overall Intersection		-		**N/A**	-		**N/A**	-	-		**15.8**	**B**		

Notes: As presented herein, a few individual turning movements would continue to operate below acceptable levels of service with mitigation measures. However, these would not be considered impacts of the project per impact criteria, as the future conditions without the project would already be at unacceptable levels.

3.6 AESTHETICS

This section provides a discussion of the aesthetics and visual resources along the PVL corridor. This section also analyzes the potential impacts to those resources, and provides mitigation measures to avoid, or minimize, potential impacts within the PVL corridor.

Aesthetics pertain to the visual resources that contribute to the perceived visual quality of an area. While the criteria for visual quality features are subjective, contributing elements may include open spaces, vegetation, and architecture of a scenic area or visual setting with a set distinction. Adverse impacts may occur through the removal, alteration, or addition of important visual resources.

3.6.1 Regulatory Setting

Federal Policies and Regulations

National Scenic Byways Program

The U.S. Department of Transportation Federal Highways Administration collaborated with several organizations to create a program for America's scenic highways, called the National Scenic Byways Program (U.S. Department of Transportation [USDOT], 2009). The U.S. Secretary of Transportation identifies the California Department of Transportation (Caltrans) as the California state agency responsible for implementing the National Scenic Byways Program.

State Policies and Regulations

California Scenic Highways Program

In response to the National Scenic Byways Program, Caltrans established and implemented the California Scenic Highway Program to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment (Streets and Highways Code, §260 et seq.).

Caltrans defines a State Scenic Highway as any freeway, highway, road, or other public ROW that "traverses an area of outstanding scenic quality, containing striking views, flora, geology, and other unique natural attributes" (Caltrans, 2009).

Caltrans also includes "scenic corridors" in the State Scenic Highway Program: "Scenic corridors consist of land that is visible from, adjacent to, and outside the highway ROW, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries" (Caltrans, 2009).

Once a highway has been designated a state or national scenic highway, or a scenic corridor, special consideration must be made whenever a project proposes to develop the surrounding area.

Local Policies and Regulations

Riverside County General Plan

The Riverside County General Plan emphasizes concentrating growth near or within existing urban boundaries, permanently preserving important natural and scenic resources, incorporating open space within urban areas, ensuring compatibility of historic and new development, conserving view corridors, skylines, and scenic vistas, and imposing restrictions on development activities that may adversely affect scenic resources (Riverside County, 2008). According to the Multipurpose Open Space Element chapter in the Riverside County General Plan, "Scenic vistas are points, accessible to the general public, that provide a view of the countryside" (Riverside County, 2008).

Riverside County Ordinance 655

Riverside County Ordinance 655 requires that lighting for new construction areas within 45 miles of the Palomar Observatory be shielded and focused in order to minimize spill light into the night sky and onto adjacent properties (Riverside County, 1988). This ordinance also applies to parking lots and walkways. This protects the night sky from light pollution which affects astronomical observation and research.

City of Riverside General Plan

The City of Riverside General Plan lists a number of policies that serve to limit impacts on aesthetics and visual resources along roadways in the city of Riverside. This plan utilizes the Caltrans term and definition of State Scenic Highways. For scenic corridors, the City of Riverside General Plan uses the terms "Scenic Boulevards", "Special Boulevards", and "Scenic Parkways" (City of Riverside, 2007).

City of Perris Ordinance Number 1051

The City of Perris Ordinance Number 1051 requires the use of certain types of light fixtures on non-residential properties to reduce glare and the intrusion of unwanted light onto adjoining properties, the public ROW, and the night sky (City of Perris, 1997).

3.6.2 Affected Environment

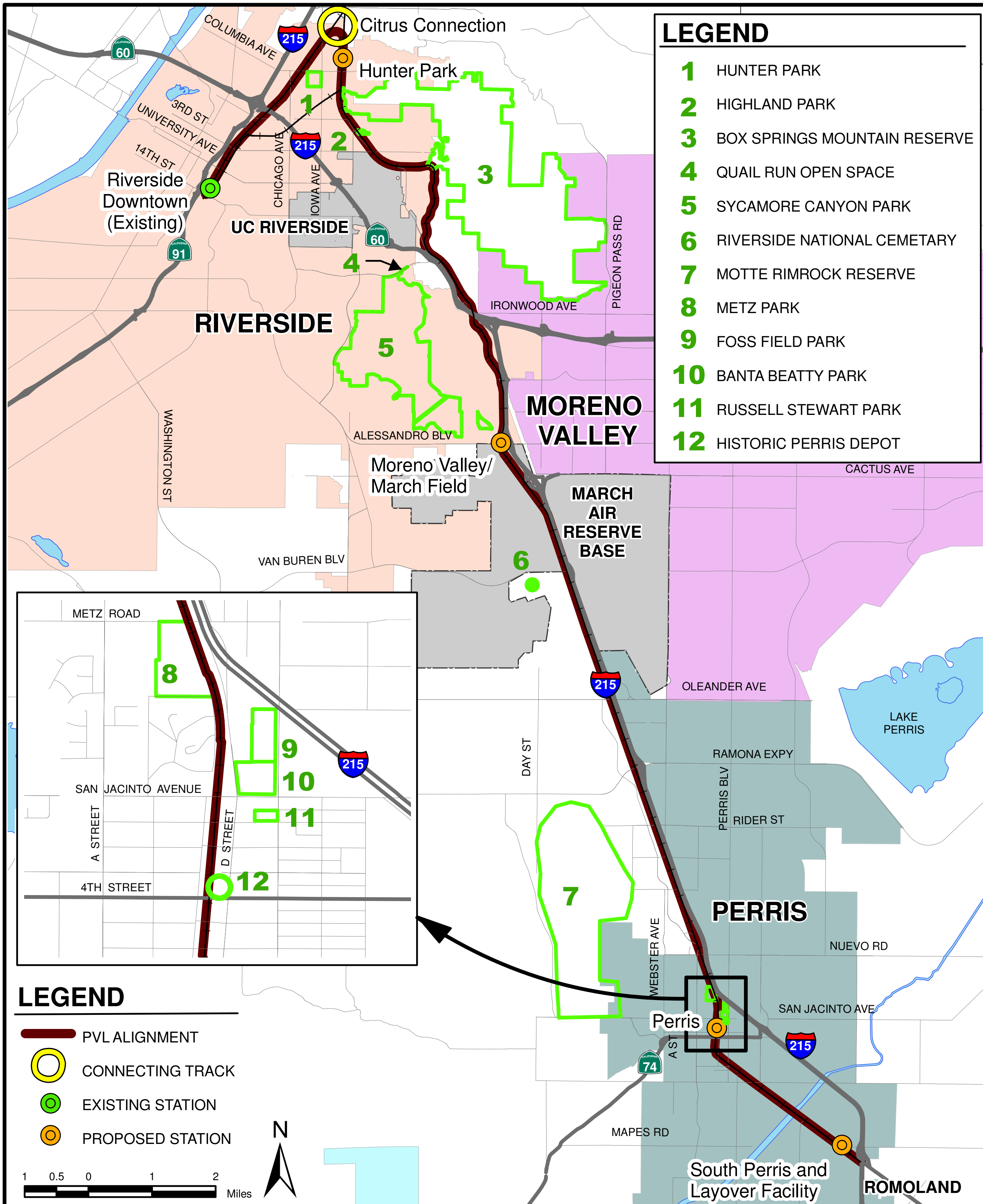
The aesthetics analysis focuses on locations where the PVL would introduce new structural elements with the potential to significantly alter the visual environs of identified sensitive resources. Relevant sensitive resources may include public open space and historic resources near the PVL and public areas from which such locations may be enjoyed.

The PVL rail upgrades would generally follow the existing SJBL ROW at the existing grade; therefore, it would resemble existing conditions and not significantly alter the visual character of the area or detract from the quality of the visual environment from public areas along the PVL corridor. Likewise, the rail installed as part of the Citrus Connection would not introduce new visually prominent elements near sensitive visual resources. The parking areas would be at-grade lots with new light fixtures that would be shielded to direct the light downwards away from off-site uses and activities; therefore, the parking areas would not intrude on the visual environment.

Therefore, sensitive aesthetic resources near the stations and Layover Facility, noise barriers, landscape walls, and communications towers are of primary concern to this aesthetics evaluation. Specifically, the potentially affected environment would comprise the following aesthetic sensitive resources (Figures 3.6-1 and 3.6-2):

- Hunter Park, located at the corner of Columbia Avenue and Iowa Avenue.
- Highland Park, Box Springs Mountain Reserve, and Islander Park. Highland Park contains sports facilities, playgrounds, and picnic areas north of Hyatt Elementary School. Box Springs Mountain Reserve, east of Islander Park and the SJBL alignment, is a large contiguous open space with trails and a steep and varied topography.
- Highland Elementary School near the proposed landscape wall that would be located near to MP 2.30 (south of Spruce Street and north of Blaine Street).
- Hyatt Elementary School is located south of Mansfield Street at approximately MP 3.80 and the proposed landscape wall would be located along the RCTC/SJBL property boundary.
- Quail Run Open Space and Sycamore Canyon Wilderness Park are located west of the PVL corridor and north of Alessandro Boulevard. Both parks cover over 1,550 acres of land.
- Riverside National Cemetery, near the proposed Control Point Eastridge Radio Tower that would be located in the Sycamore Canyon Business Park near to MP 8 (south of Eucalyptus Avenue and north of Alessandro Boulevard). Riverside National Cemetery contains several military memorials. Trees largely block views of the corridor from most areas of the cemetery. Motte Rimrock Reserve is located south of the cemetery on the west side of the SJBL alignment.
- Listed on the National Register of Historic Places (NRHP), the Perris Depot (Santa Fe Railroad Depot) adjacent to the Downtown Perris Station that would be located near to MP 18.50 (south of 1st Street and north of 3rd Street).
- Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located on both sides of the SJBL alignment and north of downtown Perris.
- The Ramona Expressway is a National Scenic Byway located in the vicinity of the PVL corridor. The segment of Ramona Expressway that is designated as a National Scenic Byway is located west of its intersection with E Main Street in the city of San Jacinto to the east side of I-215, north of Motte Rimrock Reserve.
- SR-74 (e.g., West 4th Street), crosses the SJBL alignment south of the Downtown Perris Station that would be located near to MP 18.50 (south of 1st Street and north of 3rd Street). SR-74 is considered an eligible state scenic highway west of the eastern boundary of the city of Hemet to the I-5 Intersection in San Juan Capistrano.

This Page Intentionally Left Blank



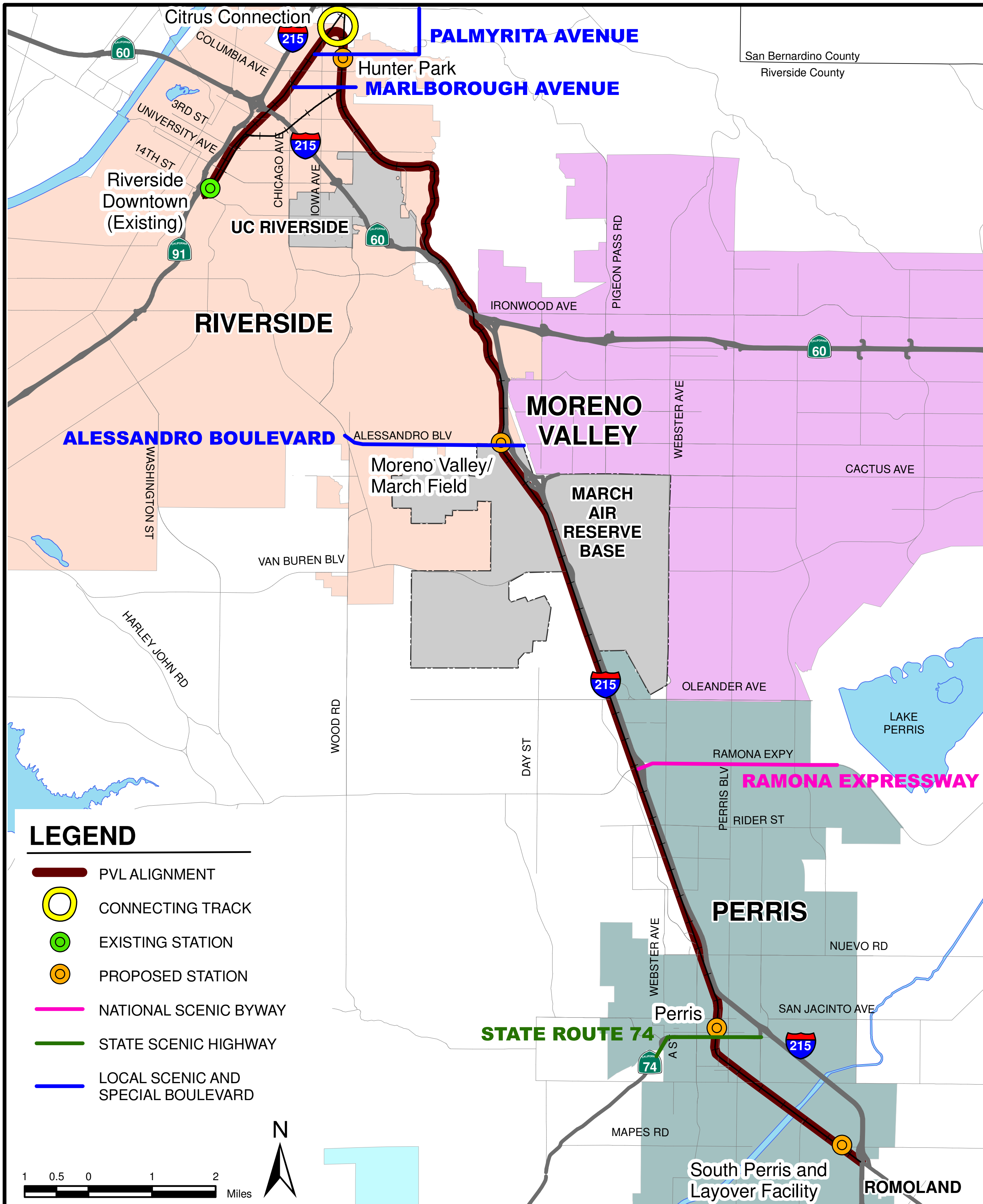
PROJECT NO.	92666
DRAWN:	1/12/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666scene_EA.MXD	

SCENIC VISTA LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.6-1



PROJECT NO.	92666
DRAWN:	1/12/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666scene1_EA.MXD

SCENIC ROUTES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.6-2

3.6.3 Environmental Consequences/Impacts

Citrus Connection

The proposed Citrus Connection would be located on vacant land north of Citrus Street and near the intersection of the BNSF and SJBL alignments. This connecting track will be relatively level with the new rail placed on ballast rock.

Box Springs Mountain Reserve is about one mile east of the proposed Citrus Connection location and can be seen in the distance to the southeast, though partially blocked by the intervening development. The visual landscape of the area consists of existing public roads and railways, and industrial, commercial, and residential land uses.

New track installed as part of the Citrus Connection would closely resemble existing conditions and therefore would not alter the visual landscape or introduce new visually impacting elements near Box Springs Mountain Reserve. Therefore, there is no impact for this issue area.

SJBL Alignment

The SJBL alignment currently extends south from its intersection with the BNSF alignment in Riverside to its intersection with I-215/SR-74 south of Perris.

The views around the SJBL alignment transition from the industrialized downtown Riverside, to agricultural and residential areas in the city of Riverside, to agricultural, industrial, and open space land in Riverside County. The alignment continues south through the commercial buildings in downtown Perris to the agricultural and scattered development in the southern extent of the PVL corridor.

Hunter Park is a block west of the SJBL alignment adjacent to downtown Riverside and cannot be seen from the ROW due to the industrial development of the area.

Highland Park is adjacent to the SJBL alignment in a residential area within the city of Riverside. From the existing SJBL alignment, the park can be seen to the east, in addition to Box Springs Mountain Reserve and the surrounding educational and residential properties.

Box Springs Mountain Reserve is located to the east and southeast of the SJBL alignment, though partially blocked by intervening development, including industrial, commercial, and residential structures.

Further south along the SJBL alignment in Riverside County, the views include Quail Run Open Space, Sycamore Canyon Wilderness Park, Riverside National Cemetery, and Motte Rimrock Reserve to the west. Additional views from the SJBL alignment in this area include light industrial and agricultural facilities.

The National Scenic Byway, Ramona Expressway, east of the PVL corridor approximately 1.5 miles south of the MARB and at the east side of the I-215. The view from Ramona Expressway at this location consists of a mixture of agricultural land, light industrial structures, residential properties, the I-215, and the existing SJBL alignment.

Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located adjacent to the existing SJBL alignment in a light industrial area within the city of Perris.

SR-74 is known as West 4th Street in downtown Perris and passes east through the city, crosses the SJBL alignment, and joins the I-215. The view of SR-74 in this area includes a moderately industrialized downtown with various commercial, business, industrial, and residential buildings.

This portion of the PVL project involves upgrading the existing track along the SJBL alignment, and adding a double track in certain segments (see Figure 1.7-2). Since only ground-level changes would be made, proposed development would resemble existing conditions and therefore would not alter the visual landscape or introduce new visually impacting elements near these sensitive scenic vistas.

Stations

The proposed PVL project would involve the construction of four stations with adequate lighting for station operations, parking lots, and the safety of station patrons. The lights at the stations would remain on during operating hours. After the last train of the day, the station and parking area lights would cycle with half of the lights being on at a time. This is an energy saving measure. The lights at the Layover Facility would remain on throughout the night. The station lighting will comply with all local ordinances.

Hunter Park Station Options

~~The Hunter Park Station would be constructed at one of three proximate sites located~~ The proposed Hunter Park Station location was selected after consideration of three potential sites along Palmyrita, Columbia, and Marlborough Avenues, all adjacent to the SJBL alignment and south of the Citrus Connection. The Palmyrita Avenue Station option is north of Columbia Avenue and east of the ROW. This is currently being developed for light industrial use by a private developer. The Columbia Avenue Station option is south of proposed Palmyrita Station option west of the ROW. The site currently hosts a citrus orchard. The citrus orchard at the Columbia Avenue station is bordered on three sides by commercial buildings and Columbia Avenue to the south. There are no sensitive receptors in the area and the only views of the orchard are from the surrounding buildings. The chosen Marlborough Station option is just north of and adjacent to Marlborough Avenue, and is located on cleared, disturbed land about 1,000 feet south of the Columbia and Palmyrita Station options.

Box Springs Mountain Reserve abuts the existing SJBL alignment and can be seen extending southeast from the proposed station locations. Hunter Park, meanwhile, cannot be seen from any of the three proposed sites at the Hunter Park Station due to intervening development. The views around the proposed station consist of roads, agricultural land, and industrial buildings with equal or greater vertical heights as the proposed development.

Based upon the current development in the area, the proposed station would be consistent with existing conditions and would not introduce new visually impacting elements near Box Springs Mountain Reserve or Hunter Park.

Moreno Valley/March Field Station

The March Field/Moreno Valley Station has already been approved as part of the Meridian Business Park Plan in 2003. The Environmental Impact Report for the Specific Plan indicated that Sycamore Canyon Wilderness Park would be preserved (March JPA, 2003). Therefore, the March Field/Moreno Valley Station is not expected to introduce new visually impacting elements near Sycamore Canyon Wilderness Park.

Downtown Perris Station

The site for the Downtown Perris Station is located along the SJBL alignment just north of SR-74. This station is part of the Perris Multimodal Transit Facility that is currently under construction adjacent to the SJBL alignment in downtown Perris.

Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located to the north and are not visible from the proposed Downtown Perris Station. The views around this station consist of light industrial, agricultural, and residential structures. Additionally, the city of Perris has approved plans to revitalize downtown with new walkways, renovated store fronts, and residential land uses surrounding the Multimodal Transit Facility (City of Perris, 2005).

The historic Perris Depot (Santa Fe Railroad Depot) is a restored train depot used for museum space located adjacent to the multimodal facility. The added activity and station components would be similar to and supportive of the National Register Perris Depot, and, therefore, would result in no significant adverse impact to this historic resource.

Based upon the existing conditions and the planned construction the proposed station would be consistent with the visual landscape and would not introduce any new visually prominent elements that would negatively impact scenic vistas in the area.

South Perris Station and the Layover Facility

There are no scenic vistas identified in the vicinity of the proposed South Perris Station and the Layover Facility.

<u>Bridges</u>

The replacement bridges will be of similar visual character to the existing bridges. There are no scenic vistas identified in the vicinity of the two proposed bridge replacements at the San Jacinto River and the San Jacinto River Overflow Channel.

Noise Barriers

Analysis of potential project noise-related impacts identified a need to construct noise barriers at several locations along Watkins Drive in the UCR area of the City of Riverside. These noise barriers would be placed at the SJBL ROW line, replacing existing residential property fences in some instances. The barriers will closely resemble a masonry block freeway noise barrier. Details regarding the noise barriers are provided in Section 3.4.~~0~~, Noise and Vibration.

Landscape Walls

The term "landscape wall" describes a free-standing, masonry block wall that will be deployed for reasons other than noise mitigation. ~~A l~~Landscape walls will be constructed as part of the PVL project at Highland and Hyatt Elementary Schools, as shown on Figure 3.6-3. Additionally, RCTC will fund another landscape wall at Nan Sanders Elementary School.

Highland Elementary School

This landscape wall will be located between two of the noise mitigation barriers (see Section 3.4 Noise and Vibration). This location will create a continuous 3,140 foot long wall between Spruce Street Blaine Street. The height of the wall/barrier will vary between 9 and 13 feet.

From the proposed landscape wall location at the school's western property boundary, the view of Box Springs Mountain Reserve currently includes medium-density residential buildings. Elevations of the Reserve are vast compared to the height of even the tallest structures in the area. Highland Park is also visible from the proposed landscape wall location, though rows of trees line both sides of the SJBL alignment segment and partially block views into the park.

Since the proposed wall would be to the west of the school, their views of Highland Park to the northeast and Box Springs Mountain Reserve to the east would not be impacted. For the residential properties on the west side of the tracks, any views of Box Springs Mountain Reserve and Highland Park currently include chain link fences, the existing railway, Watkins Drive, street parking, trees on either side of the road, and intervening buildings. Additionally, these residential properties are rental units with two floors; units on the bottom floor currently have no views of the park or the reserve because of the tall wood fence that encircles each patio. Units on the top floor are elevated and currently have views that look out above the tree line.

The height of the proposed landscape wall would not exceed the height of existing structures and trees in the area. Therefore, this proposed landscape wall would not significantly impair scenic views of the park and reserve, or substantially degrade the existing visual landscape of the area.

Hyatt Elementary School

The landscape wall at Hyatt Elementary School would be placed along the length of the school's eastern frontage with the SJBL alignment.

Box Springs Mountain Reserve is adjacent to the railroad and the school. Other properties in this area are located to the west of the school and largely consist of medium-density residential buildings. Since this landscape wall would not exceed the height of the existing school buildings, its construction would not significantly alter the visual landscape or impair scenic views of the reserve.

~~RCTC had originally proposed a landscape wall at Hyatt Elementary School during circulation of the Draft Environmental Impact Report (Draft EIR). Several comments expressed concerns that the location of the existing track relative to the adjoining Hyatt Elementary School poses a risk to the school from potential derailments; specifically, the potential that a derailment could result in rail cars and cargo (including release of hazardous materials) rolling down the slope and onto school property. The track is about 15-20 feet higher than the school property and about 95-125 feet away. The same concern was also expressed by several residents in the immediate area regarding their properties.~~

~~Project implementation will improve operating conditions by either upgrading (replace ballast, ties, and rail) or replacing existing track throughout its length, including along adjoining Hyatt Elementary School. The one exception is the two mile stretch between Poarch Road and River Crest Road where the track will be rehabilitated (resurfacing and spot tie replacements).~~

~~The proposed project does nothing that correlates with an increased potential for derailments. As such, there are no impacts and no mitigation is required. That being said, RCTC is sensitive to public concerns associated with this project and has engaged the services of a railroad design/safety professional to review and assess the situation, and to provide recommendations. These recommendations will be weighed with additional input from the local community before undertaking any supplemental measures.~~

~~To be clear, the provision of this supplemental measure is not required to reduce potential impacts to a level of less than significant. To the contrary, the SEA thoroughly analyzed the potential for derailment and concluded that no significant impact would result (see Section 3.8 Hazards and Hazardous Materials). Thus, the provision of any supplemental measure would simply further reduce these already insignificant impacts.~~

~~Potential supplemental measures would not rise significantly above the track level to impact views into Box Springs Mountain Reserve. Box Springs Mountain Reserve would continue to be the main element of the local and regional viewshed. Views of the Reserve from either the main play area of the school, 150 feet west of the tracks, or the medium density residential areas would not be adversely impacted.~~

Nan Sanders Elementary School

It is anticipated that this wall would block views of the ROW as well as views of the I-215. These are not identified as significant views for this area of the project because the rail alignment along this portion is not considered valuable scenic resources. It should be noted that there are ROW constrictions at Nan Sanders Elementary School, therefore, RCTC will provide funding for the design and construction of the landscape wall on the school's property, in lieu of constructing the wall. It is anticipated that this wall would block views of the ROW as well as views of the I-215. These are not identified as significant views for this area of the project.

Communication Towers

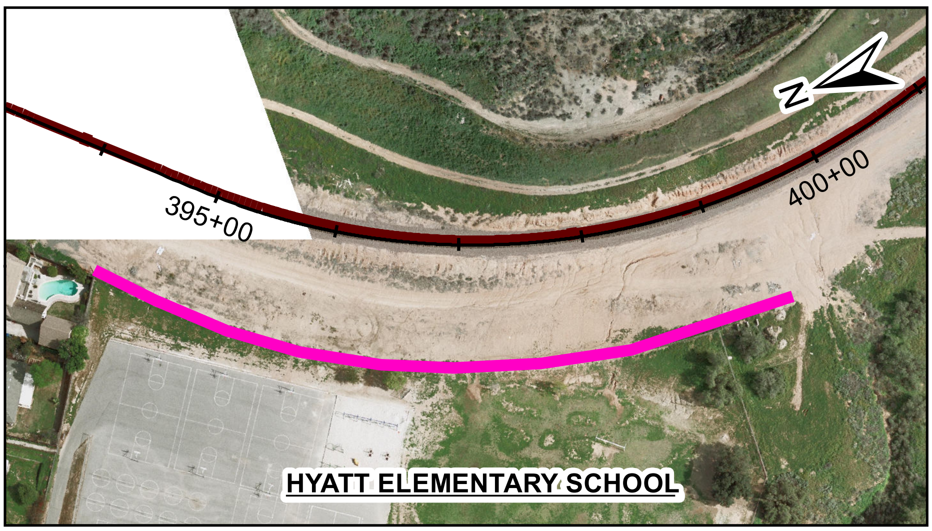
The PVL project includes the construction of communication towers and associated equipment shelters: East Maintenance Facility (outside the PVL corridor); CP Citrus Radio Tower, Palmyrita Station Microwave Tower; CP Marlborough Radio Tower; CP Eastridge Radio Tower; CP Oleander Radio Tower; CP Nuevo Radio Tower; South Perris Station Communication Shelter and Tower; and Control Point Mapes Radio Tower (Figure 3.9-1). A shelter or equipment box located near the base of these towers would house equipment and electronics and would be surrounded by a block wall or other type of security fence.

There are no scenic vistas in the vicinity of the East Maintenance Facility, the South Perris Station Communication Shelter and Tower, and the Control Point Mapes Radio Tower and therefore no impacts are anticipated at those three locations.

CP Citrus Radio Tower, Palmyrita Station Microwave Tower, and CP Marlborough Radio Tower

The CP Citrus Radio Tower would be located near the proposed Citrus Connection site and along the existing railroad tracks. The Palmyrita Station Microwave Tower would be installed near the proposed Hunter Park Station in Riverside.

Box Springs Mountain Reserve would be seen to the southeast of the proposed towers. This view of the Reserve would also include the agricultural lands, telephone poles, and industrial structures of varying heights that currently occupy the visual landscape.



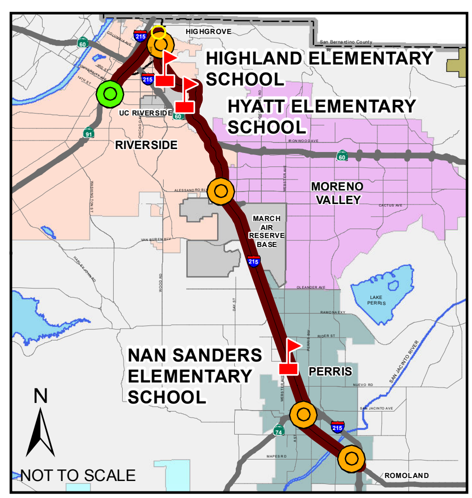
NOTE:

DUE TO RIGHT OF WAY CONSTRICTIONS AT NAN SANDERS ELEMENTARY SCHOOL, RCTC WILL PROVIDE FUNDING FOR THE DESIGN AND CONSTRUCTION OF THE LANDSCAPE WALL.

LEGEND

- PVL ALIGNMENT
- APPROXIMATE LOCATION OF LANDSCAPE WALLS
- APPROXIMATE LOCATION OF NOISE BARRIER FOR HIGHLAND ELEMENTARY SCHOOL

NOT TO SCALE



KEY MAP

PROJECT NO.	92666	**LANDSCAPE WALL LOCATIONS**	FIGURE
DRAWN:	6/14/11		**3.6-3**
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666lscapeSEA.MXD			

KLEINFELDER
Bright People. Right Solutions.

The proposed towers would have thin profiles and the proposed shelter would not exceed the height of structures in the surrounding area. Based upon this and the elevation of the Reserve, development at this segment of the PVL project would be consistent with the existing visual landscape and would not introduce new visually impacting elements near Box Springs Mountain Reserve.

CP Eastridge Radio Tower

This tower would be located west of the SJBL alignment between Alessandro Boulevard and the I-215/SR-60 interchange. Sycamore Canyon Wilderness Park would be seen one mile west of the proposed tower. Agricultural lands, industrial structures, and telephone poles currently exist between this tower and the park. Despite the intervening development, drivers or train commuters along I-215 or the SJBL railway can also see the park in the distance to the west, which has elevations ranging from 1,100 -1,600 feet ASL.

Based upon existing conditions and the proposed tower's thin profile, it would be consistent with the visual landscape and would not introduce new visually impacting elements near Sycamore Canyon Wilderness Park.

CP Oleander Radio Tower

The CP Oleander Radio Tower is located south of the MARB along the PVL corridor. From this proposed tower, the view of Riverside National Cemetery would consist of moderately rural land with scattered industrial structures and telephone poles throughout. Trees line the boundary that is adjacent to the SJBL alignment and mostly block views into the cemetery. Additionally, business park development has been planned north of the cemetery (March JPA2003).

The proposed tower would have a thin profile that is similar to the existing telephone poles. Therefore the tower would be consistent with the visual landscape and would not introduce new visually impacting elements around the Riverside National Cemetery.

CP Nuevo Radio Tower

This tower would be located just north of Nuevo Road in Perris and adjacent to the PVL corridor. Motte Rimrock Reserve would be seen to the west of the proposed Nuevo Radio Tower. The view of the reserve from this proposed tower would also include approximately 1/2 mile of the agricultural lands, scattered residential and industrial properties, and telephone poles that currently occupy the visual landscape. In addition to the intervening development, drivers or train commuters along I-215 or the SJBL railway can see the reserve in the distance to the west, which has elevations ranging from 1,500 -1,900 feet ASL.

Based upon existing conditions and the proposed tower's thin profile, it would be consistent with the visual landscape and would not introduce new visually impacting elements near Motte Rimrock Reserve.

Construction Impacts

During the construction period, airborne dust may be created and equipment may be stored along the railroad ROW and at station sites, which has the potential for temporary, localized visual impacts. These impacts would be temporary. Furthermore, best management practices would be incorporated into the proposed action to reduce the amounts of fugitive dust (see Section 3.3 Air Quality), and screen construction equipment.

During the construction period, fugitive light may be created from night-time work activities, which has the potential for temporary, localized visual impacts. These impacts would be temporary. Furthermore, best management practices would be incorporated into the proposed action to reduce the amounts of fugitive light and screen construction equipment (Mitigation Measure AS-1).

3.6.4 Mitigation Measures

- **AS-1:** ~~In order~~ T~~t~~o ~~limit~~ minimize light spill over into residential areas during construction, light attenuating barriers or directed lighting ~~will~~ shall be used.

3.7 CULTURAL RESOURCES AND SECTION 106 COMPLIANCE

This section summarizes the efforts to identify historic properties within the PVL project area, describes the identified resources and their eligibility for the National Register of Historic Places (NRHP), analyzes the potential impacts to those resources, and provides mitigation measures to reduce, avoid, or minimize potential impacts.

It should be noted that historical resources also are protected under Section 4(f) of the Department of Transportation Act of 1966. A complete discussion of Section 4(f) and its applicability to the PVL project is provided in Section 3.10 Section 4(f) Evaluation.

3.7.1 Regulatory Setting

The term "cultural resource" refers to a broad category of resources, which include prehistoric and historic archaeological sites, buildings, districts, structures, locations, or objects considered important to a culture or community for scientific, traditional, religious, or other reasons. Cultural resources deemed significant for their contribution to broad patterns of history, prehistory, architecture, engineering, and culture are eligible for listing on the NRHP and require specific considerations under the National Historic Preservation Act (NHPA). Regardless of age, cultural resources listed on or eligible for listing on the NRHP are termed historic properties.

Because the PVL project would be funded in part through FTA's Small Starts category, it is a project subject to compliance with Section 106 of the NHPA of 1966, as amended (16 USC 470 et seq.). Section 106 (36 CFR Part 800, as amended August 5, 2004) requires federal agencies to take into account the effects of their undertakings on historic properties, and consult with the State Office of Historic Preservation ~~Office~~ (SOHP~~O~~).

In order to be eligible for inclusion on the NRHP, a property must be significant under one or more of the four evaluation criteria:

- Criterion A: Associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: Associated with the lives of persons significant in our past; or
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: Yielded, or may be likely to yield, information important in prehistory or history.

In addition, a property must be able to convey its significance through the retention of specific aspects of integrity, such as location, design, setting, materials, workmanship, feeling, and association. In general, properties less than 50 years of age, unless of exceptional importance, are not eligible for the NRHP.

To comply with Section 106 of the NHPA, any effects of the federal agency's proposed undertaking on historic properties must be evaluated by applying the Criteria of Adverse Effect (36 CFR Part 800.5):

(1) An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration must be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP.

(2) Adverse effects on historic properties include, but are not limited to:

i. Physical destruction of or damage to all or part of the property;

ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;

iii. Removal of the property from its historic location;

iv. Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

v. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

vii. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

3.7.2 Affected Environment

This section describes the extent of the area considered for the presence of cultural resources, outlines the methods used to identify historic properties within the PVL project area, and presents the findings of the cultural resource investigations.

<u>Definition of the Area of Potential Effect</u>

As defined by Section 106 (36 CFR Part 800.16(d)), the Area of Potential Effects (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

The APE for the PVL project includes the existing SJBL ROW (extending one parcel out to account for potential visual, atmospheric, or auditory effects to historic properties); the Citrus Connection; the proposed station locations; and the Layover Facility.

Identification Methods and Findings

Architectural Resources

In 2003, Myra L. Frank & Associates, Inc. (MFA) prepared a Determination of Eligibility and Effects Report (DEER), which analyzed the architectural and historic resources within and adjacent to the PVL corridor. The DEER included a records search and field survey to identify architectural and archaeological resources that could be eligible for listing on the NRHP.

Prior to field survey, MFA consulted the following inventories and information sources:

- NRHP
- State Historic Landmarks
- State Points of Historical Interest
- City of Riverside Landmarks
- City of Riverside Structures of Merit
- Riverside Public Library
- TRW/Experian property data records
- City of Riverside Building Permits
- Eastern Information Center at UCR
- California Historical Resources Information System (CHRIS)

MFA also solicited information from interested parties, including: the City of Perris Planning Department, Riverside Public Library, City of Riverside Planning Department, County of Riverside Transportation Department, Historical Society of Riverside, Riverside County Historical Commission, Riverside Municipal Museum, Jurupa Cultural Center, Regional Park and Open Space Agency, and MARB.

The reconnaissance built environment survey was conducted on August 27 – 30, 2002 and January 16, 2003 by qualified architectural historians who meet the Secretary of Interior's Professional Qualification Standards (Federal Register 48(190): 44738-44739). As a result of the field effort, more than 60 buildings and structures were evaluated for eligibility to the NRHP. Of the resources evaluated by MFA within the PVL project's APE, four resources are listed on or recommended as eligible for listing on the NRHP, as summarized in Table 3.7-1.

Table 3.7-1
National Register of Historic Place (NRHP) Listed or Eligible Resources

Resource	Description	Eligibility Status	Distance from PVL Corridor
March Field Historic District (within March Air Reserve Base)	District of military buildings	Listed, Criteria A and C	< 1 mile east of SJBL alignment
Perris Depot (120 West 4th Street)	One-story Victorian railroad depot	Listed, Criteria A and C	Adjacent to east side of SJBL alignment
Rock House (246 Lomita Drive, Perris)	Two-story stone-clad Mission Revival style single-family residence	Recommended Eligible, Criterion C[1]	500 ft west of SJBL alignment, elevated 100 ft
Janie Kirkpatrick House (504 South C Street, Perris)	One-story Victorian cottage	Recommended Eligible, Criteria B and C[1]	300 ft west of SJBL alignment

Between February 2 and 4, 2009, AE Architectural Historian M. Colleen Hamilton conducted additional field investigations along three linear resources including the Burlington Northern Santa Fe (BNSF) Railroad, the San Jacinto Branch Line (SJBL), and the Gage Canal situated in Riverside, California. While the relationship of these resources to the Project APE and eligibility to the NRHP was assessed, none were found to be eligible for the NRHP. The BNSF and the SJBL were, however, found eligible for the California Register of Historical Resources (CRHR).

On December 9, 2009 AE historical staff visited and inspected various locations along the SJBL where noise barriers are proposed between Spruce Street and Mt. Vernon Avenue to determine if there would be any project effects to historic properties. While structures over 50 years of age were present, they were beyond the APE. To further ensure that potential impacts to local resources were fully considered, the following additional sources were reviewed: (1) the City of Riverside's Title 20 Code; (2) the City of Riverside's Landmarks list; and (3) the City of Riverside's Structures of Merit list. In addition a building permit review was undertaken to establish the construction dates of buildings adjacent to the Project APE. No additional structures beyond those identified by MFA within or adjacent to the Project APE were listed on the City of Riverside's Landmark list or the City of Riverside's Structures of Merit list or determined eligible for the National Register.

Archaeological Resources

AE prepared an archaeological resources report (AE, Inc., 2008), which included a literature and records search and a pedestrian survey. The records search was conducted at the Eastern Information Center (EIC) at UCR, and encompassed a 1/8-mile search radius of the PVL corridor. Information collected from EIC indicated that portions of the APE had been previously surveyed, and that three known archaeological sites are located in close proximity to the rail alignment.

Following the records search, pedestrian survey was performed by AE archaeologists between October 6 and 8, 2008 and on October 22, 2008. Supplemental survey of the proposed

Marlborough and Columbia Station locations was conducted on July 7, 2009. Survey transects were spaced no more than 10 to 15 meters (33 to 50 feet) apart. All areas were observed carefully to ensure that potentially significant cultural resources (if present) were discovered and documented. Where possible, the surveyor investigated distinctive soil contours or changes and any other potential cultural site markers.

As a result of fieldwork, AE archaeologists identified and recorded an additional archaeological site, and updated site records for the three previously identified archaeological sites. Table 3.7-2 summarizes the results of the archaeological survey.

Table 3.7-2
Archaeological Resources within the APE

Site Number	Description	Eligibility Status
CB-2	Bedrock milling site	Not evaluated
CA-RIV-805	Prehistoric artifact scatter	Portion of site within APE not eligible[1]
CA-RIV-2384	Bedrock milling site	Not evaluated
CA-RIV-4497H / 3817H	Box Springs siding; historic artifact scatter; prehistoric features	Not evaluated

Site CA-RIV-805 is a sparse prehistoric artifact scatter located partially within the railroad ROW west of the San Jacinto River. Because site CA-RIV-805 is located in the floodplain, additional artifacts and possibly features may be buried beneath the site's surface. In addition, at least a portion of site CA-RIV-805 and the area immediately north of it (outside of the ROW) has been regularly plowed as part of agricultural operations. Flooding episodes and plowing have impacted the integrity of at least the upper portions of the site, and therefore the horizontal and vertical extents of site CA-RIV-805 could not be determined from the distribution of surface artifacts. Project-related construction activities proposed near site CA-RIV-805 would include the replacement of track, tie, and ballast, and the construction of a drainage swale adjacent to the rail. These ground-disturbing activities are expected to impact a portion of the known extent of the site. Accordingly, archaeological testing was conducted at site CA-RIV-805 to determine the spatial extent of the site and its eligibility for listing on the NRHP (Mirro, 2009b).

The results of the archaeological testing concluded that no intact buried deposits are present within the APE at site CA-RIV-805 and that the surface artifacts represent the only remnants of the site within the APE. No testing was conducted on portions of the site outside the APE. Accordingly, it is recommended that the portions of site CA-RIV-805 that exist within the APE would not contribute to the eligibility of the site for listing on the NRHP if other portions of the site, outside the APE, are determined eligible in the future.

The other three archaeological sites (Table 3.7-2) will not be directly affected by the project and were not evaluated for their NRHP-eligibility. To ensure protection of these resources during construction, environmentally sensitive areas (ESAs) would be established and monitored.

Native American Consultation and Coordination

RCTC contacted the Native American Heritage Commission (NAHC) in June 2008 to identify any traditional lands or cultural places within or adjacent to the project corridor. The NAHC responded on June 18, 2008 with a request for RCTC to contact local Native American groups who may have knowledge of cultural resources in the vicinity of the PVL corridor. On July 10, 2008, RCTC sent letters and a map of the PVL corridor to the list of contacts provided by NAHC.

It should be noted that RCTC's July 2008 contact with Native American groups and individuals was based on the list provided by the NAHC in June 2008. On February 5, 2009, NAHC sent a new list of Native American contacts following the promulgation of the January 2009 IS/MND, which differed from the June 2008 list. RCTC contacted the NAHC to clarify which list should be used for all future correspondence. NAHC indicated that contact lists are periodically updated to most accurately reflect each tribe's area of cultural affinity. NAHC indicated the most appropriate list to use is the one dated February 5, 2009. Accordingly, the following tribes will be included in any future project correspondence or consultation related to the requirements of NEPA and Section 106 of the National Historic Preservation Act: Pechanga Band of Mission Indians, Ramona Band of Cahuilla Mission Indians, Soboba Band of Mission Indians, Santa Rosa Band of Mission Indians, Morongo Band of Mission Indians, Willie Pink, and Soboba Band of Luiseno Indians.

Two responses were received. The Morongo Tribe responded on July 31, 2008 requesting that any human remains identified during project construction be treated in accordance with Health and Safety Code Section 7050.5. The tribe also requested that they be consulted should any cultural resources be discovered during project construction. On August 28, 2008, the Soboba Band of Mission Indians responded with a request that RCTC provide copies of archaeological and/or cultural resource documentation prepared for the project, and continue to consult with Native American tribes about the project.

Following preparation of the archaeological testing plan prepared for site CA-RIV-805 (AE, Inc., 2009), additional tribal consultation occurred among FTA, RCTC, and the Soboba Band of Luiseño Indians on June 11, 2009 and among FTA, RCTC, and the Pechanga Band of Luiseño Indians on October 20, 2009 and June 25, 2010. Native American consultants were hired from each Band to monitor the testing activities at CA-RIV-805. Subsequently, in a letter to RCTC dated March 15, 2010, the Pechanga Band indicated that the entire project alignment is of cultural importance to the Band and that construction activities in sensitive areas should be monitored. As well, they recommended that evaluation of the NRHP-eligibility of portions of site CA-RIV-805 outside the APE be deferred; they concur that the portion of the site within the APE would not contribute to the eligibility of the site, overall.

3.7.3 Environmental Consequences/Impacts

Citrus Connection

No historic properties or archaeological sites were identified within or adjacent to the Citrus Connection parcel, and therefore no impacts associated with the construction, operation, or maintenance of the PVL would occur.

SJBL Alignment

One archaeological site, CA-RIV-805, was identified within the railroad ROW. Portions of that site within the ROW are recommended as not eligible for the NRHP. Therefore, the project would have no adverse effect to that site. Three other archaeological sites, CB-2, CA-RIV-2384, and CA-RIV-4497H / 3817H (Table 3.7-2) are immediately adjacent to the railroad ROW. Project-related construction activities proposed in the vicinity of these archaeological sites are limited to rehabilitation of existing track and ties, and the construction of drainage features adjacent to rail. The sites would be protected from direct impacts by designation of ESAs that would be monitored. Therefore, the project would have no impact on these three sites.

MFA applied the Criteria of Adverse Effect (refer to 3.7.1 Regulatory Setting) to the resources listed in Table 3.7-1 to determine if the proposed PVL would adversely affect any historic properties. The properties are located in close proximity to the railroad (that is, 500 feet or less), and railroad facilities have long been part of the area's historic setting. Therefore, the proposed project does not constitute a change in the setting of the respective resources. In addition, the PVL project would not alter any of the character-defining features for which these resources are valued, nor would it introduce visual, atmospheric, or audible effects which are greater than the existing conditions. Because there are no adverse direct or indirect impacts on historic properties, the DEER prepared by MFA proposes a Determination of No Adverse Effect for all four resources.

It should be noted that MFA also evaluated the existing SJBL alignment, and recommended it as ineligible for listing on the NRHP. The DEER was revised in July 2010 and again a Determination of No Adverse Effects was proposed as no additional historic properties were identified.

Hunter Park Station

No historic properties or archaeological sites were identified within or adjacent to any of the three optional Hunter Park Station parcels, and therefore no impacts associated with the construction, operation, or maintenance of the PVL would occur.

Moreno Valley/March Field Station

No historic properties or archaeological sites were identified within or adjacent to area proposed for the Moreno Valley/March Field Station, and therefore no impacts associated with the construction, operation, or maintenance of the PVL would occur.

Downtown Perris Station

As described in Section 3.7.2 Affected Environment, the historic Perris Depot is listed on the NRHP under Criteria A and C, that is, for its association with an important event in history and its embodiment of the distinctive characteristics of a type or period. No project-related activities are proposed for the historic Perris Depot. Railroad facilities are an intrinsic element to the historic setting of the Perris Depot, and therefore the proposed PVL project, including the construction of the Downtown Perris Station, would not alter, impair, or diminish any of the qualities for which the historic depot is valued. The platform for the proposed Downtown Perris

Station would be at-grade, and located west of the existing rail line and north of the historic depot. Furthermore, the appurtenances proposed for the Downtown Perris Station, which include an at-grade platform and a track-side canopy structure, would not introduce a significant visual intrusion that would obstruct or eliminate architectural views of the depot. All of the rail facilities proposed as part of the PVL project would be consistent with the existing conditions.

The noise and vibration study prepared for the PVL project concluded that there would be no auditory or atmospheric impacts to the historic depot (or its immediate vicinity) which could detract from the significance of the historic site or affect the structural integrity of the depot. Therefore, no direct or indirect impacts to the historic Perris Depot are anticipated from the construction, operation, or maintenance of the PVL project. Section 106 consultation is complete. FTA has received SOHP~~O~~ concurrence with its determinations of eligibility and project effect on October 4, 2010.

South Perris Station

No historic properties were identified within or adjacent to the area proposed for the South Perris Station, and therefore no impacts associated with the construction, operation, or maintenance of the PVL would occur.

Layover Facility

No historic properties were identified within or adjacent to the area proposed for the Layover Facility, and therefore no impacts associated with the construction, operation, or maintenance of the PVL would occur.

On January 25, 2010 The Riverside County Transportation Commission submitted a letter to the SOHP requesting concurrence for the PVL Project. The SOHP responded that they could not offer comments at that time as additional supporting documentation was required. On July 29, 2010 the RCTC provided the requested information including the following the reports:

- Determination of Eligibility and Effects Report for the Perris Valley Rail Line Project, Riverside county, California (Applied EarthWorks, Inc.: July 2010).

- Archaeological Resources Report for the Perris Valley Rail Line Project, Riverside County, California (Michael Mirro, Applied EarthWorks, Inc.: November 2008).

- Archaeological Buried Site Testing Report for CA-RIV-805 for the Perris valley Rail Line Project, Riverside County, California (Susan K. Goldberg, Michael Mirro, and Dennis P. McDougal: Applied EarthWorks, Inc.: December 2009,

- Significance Evaluation and Assessment of Impacts to Historical Resources along the Perris Valley Commuter Rail line (Joan George and M. Colleen Hamilton: Applied EarthWorks, Inc.: May 2010).

Following review, the SOHP concurred with the findings as follows on October 4, 2010.

1) the Area of Potential Effect as documented in Applied EarthWorks (2010:Figure 2) in accordance with 36 CFR Part 800.4(A)(1) and the historic properties identification effort by the FTA comprise a reasonable and good faith effort pursuant to 36 CFR Part 800.r.

2) FTA is treating archaeological sites AE-CB-1 (rock outcrops with milling features), CA-RIV-2384 (bedrock milling site), and CA-RIV-4497H/3817H (Site of Box Springs siding with historic artifact scatter) as eligible for the NRHP under Criterion D and will protect these sites from project effects through the enforcement of Environmentally Sensitive Areas (ESAs).

3) The portion of CA-RIV-805 (lithic scatter) located within the project APE would not be a contributor to the NRHP eligibility of this site should it be so determined at a future date.

4) The 246 Lomita Avenue (Rock House) and 504 S. C Street (Jane Kirkpatrick House) are eligible for the NRHP under Criterion C.

5) The NRHP-listed March Field Historic District will not be adversely affected.

6) The NRHP-listed Perris Station will not be adversely affected by construction and operation of the proposed commuter rail line and facilities.

3.7.4 Mitigation Measures

No known historic properties would be adversely affected by the construction, operation, or maintenance of the PVL. To ensure that unanticipated impacts to unknown resources do not occur, the following actions would be implemented and be included in RCTC contract documents:

CR-1: ~~Sites CB-2, CA-RIV-2384, and CA-RIV-4497H / 3817H shall be avoided during project construction. Site avoidance shall be accomplished through establishing ESAs and monitoring all construction in the vicinity of these sites by a qualified archaeologist.~~ A qualified archaeologist and a Native American monitor shall monitor ~~all~~ ground disturbing construction activities between MP 3.50 and 4.50, and between MP 5.60 and 6.50. The monitors shall also be present at the Citrus Connection, South Perris Station and Layover Facility where excavation is anticipated to be greater than four feet.

- ~~**CR-2:** If project construction activities exceed the depth of past agricultural impacts (4 feet), monitoring would be required at the following locations: the Citrus Connection, South Perris Station, and Layover Facility, as well as two of the three potential locations for the Hunter Park Station (Columbia Avenue Station option and the Palmyrita Avenue Station option). Part-time monitoring shall be conducted by a qualified archaeologist during the construction phase to determine whether significant buried cultural deposits are present.~~ These monitors shall have the ~~power~~ authority to temporarily halt or divert construction equipment ~~in order~~ to examine potential resources, assess ~~their~~ significance, and offer recommendations for the procedures deemed appropriate to either further investigate or mitigate any adverse impacts ~~to those cultural resources that have been encountered~~. CA-RIV-2384, CA-RIV-4497/H, and AE-CB-2 sites shall be avoided during project construction through the establishment of ESA and delineated by exclusionary fencing.

- **CR-2:** In the event cultural resources are encountered during construction, ground-disturbing activity shall cease in the immediate area. A qualified archaeologist shall be retained to examine the materials encountered, assess significance, and recommend a course of action to further investigate and/or mitigate adverse impacts to those resources that have been encountered. Treatment measures for any newly identified NRHP-eligible archaeological sites would be negotiated among FTA, RCTC, the SOHP, and interested parties, in accordance with 36 CFR 800.13(b).

- **CR-3:** In the ~~unlikely~~ event ~~of the accidental~~that unanticipated discovery of human remains occurs during project construction, the procedures outlined in §15064.5(e) of the CEQA Guidelines shall be strictly followed. These procedures specify that~~,~~ upon discovery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains can occur. The county coroner must be contacted to determine if the remains are Native American. If the remains are determined to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall identify the Most Likely Descendent (MLD). The MLD shall make recommendations for the appropriate treatment and disposition of the remains and any associated grave goods in accordance with PRC §5097.98.

3.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential presence of hazardous materials within the PVL corridor, the potential for exposure to hazardous materials during and following construction, and the specific measures that would be employed to protect public health, worker safety, and the environment. A "hazardous material" is generally defined as any substance that poses a threat to human health or the environment. It is often used interchangeably with "contaminated material," but should not be confused with the term "hazardous waste," which is a regulatory term (Davis, 2006). "Hazardous waste" is defined in the USEPA regulations (40 CFR Part 261) and refers to a subset of solid wastes that are either specific wastes listed in the regulations (listed wastes) or solid wastes possessing the characteristic of ignitability, reactivity, corrosivity or toxicity (characteristic wastes) (Davis, 2006). Information in this section is based on the *Hazardous Materials Corridor Study (HMCS) SJBL Alignment* (Technical Report G) (Kleinfelder, 2008), unless otherwise specified.

3.8.1 Regulatory Setting

Federal Policies and Regulations

Comprehensive Environmental Response, Compensation, and Liability Act

The U.S. Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in 1980. The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat. Under CERCLA, the USEPA maintains a list, known as CERCLIS, of all contaminated sites in the nation that have to some extent or are currently undergoing clean-up activities. CERCLIS contains information on current hazardous waste sites, potential hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL. The Hazard Ranking System within the CERCLIS database is used to determine whether a site should be placed on the NPL for cleanup activities (USEPA, 2000).

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) pertain primarily to emergency management of accidental releases. Passed by the U.S. Congress in 1986, it requires formation of State and local emergency planning committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data is made available to the community at large under the "right-to-know" provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory (USEPA, 2000).

Emergency Planning and Community Right-To-Know Act

The Emergency Planning & Community Right-to-Know Act was enacted by Congress as the national legislation on community safety in 1986, under Title III of the SARA. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards. To help Emergency Planning & Community Right-to-Know Act be put into action, Congress requires each state to appoint a State Emergency Response Commission. The State Emergency Response Commissions are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district. Fire fighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers help make sure that all necessary elements of the planning process are represented (USEPA, 2000).

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, through air, or in pipelines. It includes provisions for material classification, packaging, marking, labeling, placarding, and shipping documentation (USEPA, 1975).

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for USTs that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved (Davis, 2006).

Hazardous waste in California is regulated primarily under the authority of RCRA and the California Health and Safety Code. According to the Department of Toxic Substances Control (DTSC), other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

3.8.2 Affected Environment

The PVL corridor is an existing rail corridor that goes through light industrial, commercial, residential, and undeveloped areas. Adjacent land uses include residential, schools, parks, commercial, light industry, agriculture, and an active airport. Other infrastructure in the area includes natural gas and jet fuel pipelines. It should be noted that freight trains may carry hazardous materials for delivery to existing clients on the corridor. However, freight train operations on the PVL are not part of this project, but are an existing condition of the railway. The project is not anticipated to increase freight train traffic because the freight train deliveries are market driven and not related to track condition. Additionally, it should be noted that RCTC has no control over the type of freight being transported along the corridor.

Pipelines

According to the Pipeline and Hazardous Materials Safety Administration's National Pipeline Mapping System, hazardous material pipelines located within the PVL corridor include a six-inch jet fuel transmission pipeline operated by Kinder Morgan. A portion of the jet fuel pipeline extends from the Colton Terminal (2359 South Riverside Avenue) to the MARB (Cactus Avenue). Additional segments of the Kinder Morgan pipeline are located within the SJBL ROW from Service Road southward to Watkins Drive, and then reconnecting near Box Springs Boulevard to Cactus Avenue. A portion of the Kinder Morgan pipeline, within the PVL corridor, runs parallel to Hyatt Elementary School, within approximately 50 feet to the west.

A natural gas pipeline, operated by Kinder Morgan, transects the SJBL alignment at Columbia Avenue. Two other natural gas transmission pipelines operated by Southern California Gas Company intersect the PVL corridor near Cottonwood Avenue and Alessandro Boulevard.

Airport Hazards

The PVL corridor has two airports zoned within or near the project area. They are March Global Port/MARB (over one mile east) and the Perris Valley Airport (less than 0.25 miles west).

The PVL corridor and the proposed Moreno Valley/March Field Station are located within the boundaries of the airport land use plan of the MARB. The proposed station would be located predominantly within Accident Potential Zone (APZ) II, to the west of the airport, which allows for industrial and transportation uses. As currently designed, a small southerly segment of the station parking lot would be located within APZ I, to the west, which prohibits dense concentrations of people, but allows for parking lots (City of Perris, 2005).

The South Perris Station and Layover Facility are also within the MARB Airport Influence Area. They are both located within Safety Zone 3.

In addition, the privately owned Perris Valley Airport is located approximately 500 feet southwest from the PVL corridor. The PVL corridor lies within the Perris Valley Airport Influence Area, from west of Goetz Road, along SJBL alignment, to just east of Murrieta Road.

Emergency Response Plans and Emergency Evacuation Plans

Emergency management is the continuous process by which all individuals, groups, and communities manage hazards in an effort to avoid or ameliorate the impact of disasters resulting from the hazards. Effective emergency management relies on thorough integration of emergency plans at all levels of government and non-government involvement (Wisner, 2004).

Riverside County and the city of Riverside have Emergency Operations Plans (EOP) written to address the planned emergency responses associated with natural disasters and technological incidents. Each specifies its own level of response within their jurisdiction. Effective emergency management relies on thorough integration of emergency plans at all levels of government and non-government involvement.

The Emergency Management Office within the Riverside Fire Department coordinates emergency response and has prepared an EOP for the city of Riverside (Riverside Fire Department, 2002). Currently the city of Riverside is updating their EOP and associated evacuation plan (Anthony Coletta, Program Administrator for the Riverside UASI Regional Homeland Security Program).

The Riverside County Operational Area EOP, which is an extension of the State Emergency Program, focuses on defining and coordinating the appropriate departments that are directly involved with Riverside County emergency response activities (Riverside County, 2006). This plan is a multi-agency plan and also serves as a Multi-Hazard Functional Plan for the city of Perris. Along with setting forth emergency response plans and emergency evacuation plans, the EOP addresses terrorist strikes against MARB (City of Perris, 2004).

Schools

There are fifteen schools located within one-quarter mile of the SJBL ROW. Safety is the first consideration in the selection of school sites, and certain health and safety criteria are necessary including proximity to power lines, presence of toxic and hazardous substances, hazardous air emissions and facilities within a quarter mile, proximity to railroads, proximity to high pressure natural gas lines, gasoline lines, and proximity to propane tanks. The schools and their addresses are listed below:

- Riverside Community College – 1155 Spruce Street, Riverside, CA
- University Middle School – 1155 Massachusetts Avenue, Riverside, CA
- University of California Riverside – 1000 West Blaine Street, Riverside, CA
- Highland Elementary School – 700 Highlander Drive, Riverside, CA
- Vineyard Christian School – 533 Massachusetts Avenue, Riverside, CA
- Seneca Elementary School – 11615 Wordsworth Road, Moreno Valley, CA
- Apple Tree Learning Center and Riverside Child Day Care – 220 West Big Springs Road, Riverside, CA
- Hyatt Elementary School – 4466 Mt. Vernon Avenue, Riverside, CA
- Red Maple and Sierra Vista Elementary School – 975 Morgan Street, Riverside, CA
- Val Verde Student Success Academy – 972 Morgan Street, Riverside, CA
- Nan Sanders Elementary School – 1461 North A Street, Perris, CA
- California Military Institute School – 755 North A Street, Perris, CA
- St. James School – 250 West 3rd Street, Perris, CA
- Perris Elementary School – 500 South A Street, Perris, CA
- Perris Community Day School – 515 East 7th Street, Perris, CA

Sites of Potential Environmental Concern

A site located on or adjacent to a facility, or former facility, which is of potential environmental concern may pose a hazard to public health and safety. An environmental concern is defined as anything that poses a potential risk to the quality of the groundwater in the area and to the health of individuals drinking from the groundwater (USEPA, 2000). A number of locations of potential environmental concern were identified within and adjacent to the PVL corridor, along the SJBL alignment (Figure 3.8-1).

A number of properties adjacent to the PVL corridor were identified as locations subject to unauthorized releases of substances from Underground Storage Tanks (USTs) and Above Ground Storage Tanks (ASTs). The Environmental Database Report (EDR) records indicate that the releases may have impacted soil and groundwater (Kleinfelder, 2008).

- 6400 Fischer Road, Riverside - diesel AST release
- 13260 Highway 215, Riverside - gasoline UST release
- 2 South D Street, Perris - gasoline UST release
- 24 D Street, Perris - gasoline UST release
- 101 and 102 South D Street, Perris - gasoline UST release and waste oil release
- 210 West San Jacinto Avenue, Perris - gasoline and diesel UST release

Other sites of potential environmental concern include:

- The proposed Palmyrita option for the Hunter Park Station. Hazardous materials impacts associated with this parcel include: a former UST, a remote fill port, ASTs, a 55-gallon drum containing an unidentified substance, a cooling tower, a sump and soil staining. This site is currently undergoing development by a private developer; and it is not known at this time if the Phase I environmental recommendations were followed during site preparation.

- Three 55-gallon drums were observed within the PVL corridor, but outside the construction area, at the base of a ravine adjacent to the SJBL alignment at the Manfield Street eastern terminus. Due to the steep terrain leading to the drums, the contents of the drums are presently undetermined, and will not be disturbed during construction.

According to the EDR contained in the HMCS, approximately 75 gallons of diesel were released onto the railroad tracks during an automobile accident to the south of Fair Isle Drive in 2001. It is possible that residual diesel is currently present on the railroad tracks.

Communication Equipment Shelters

Each of the communication equipment shelters within the PVL corridor would contain one 250-gallon propane AST. Several arrays of batteries containing regulated heavy metals would also be located at the equipment shelters. The tanks would be used to operate the emergency generators at the equipment shelters. Each of the tanks would be mounted on a concrete pad and would be permitted through the Riverside County Department of Environmental Health

(RCDEH). The ASTs would be included on the Hazardous Materials Business Plan (HMBP) for the PVL corridor. The storage and use of the heavy metals is regulated by federal, State, and County hazardous materials regulations. The storage and use of the ASTs and batteries would not adversely affect on-site construction workers or the public during operations and maintenance.

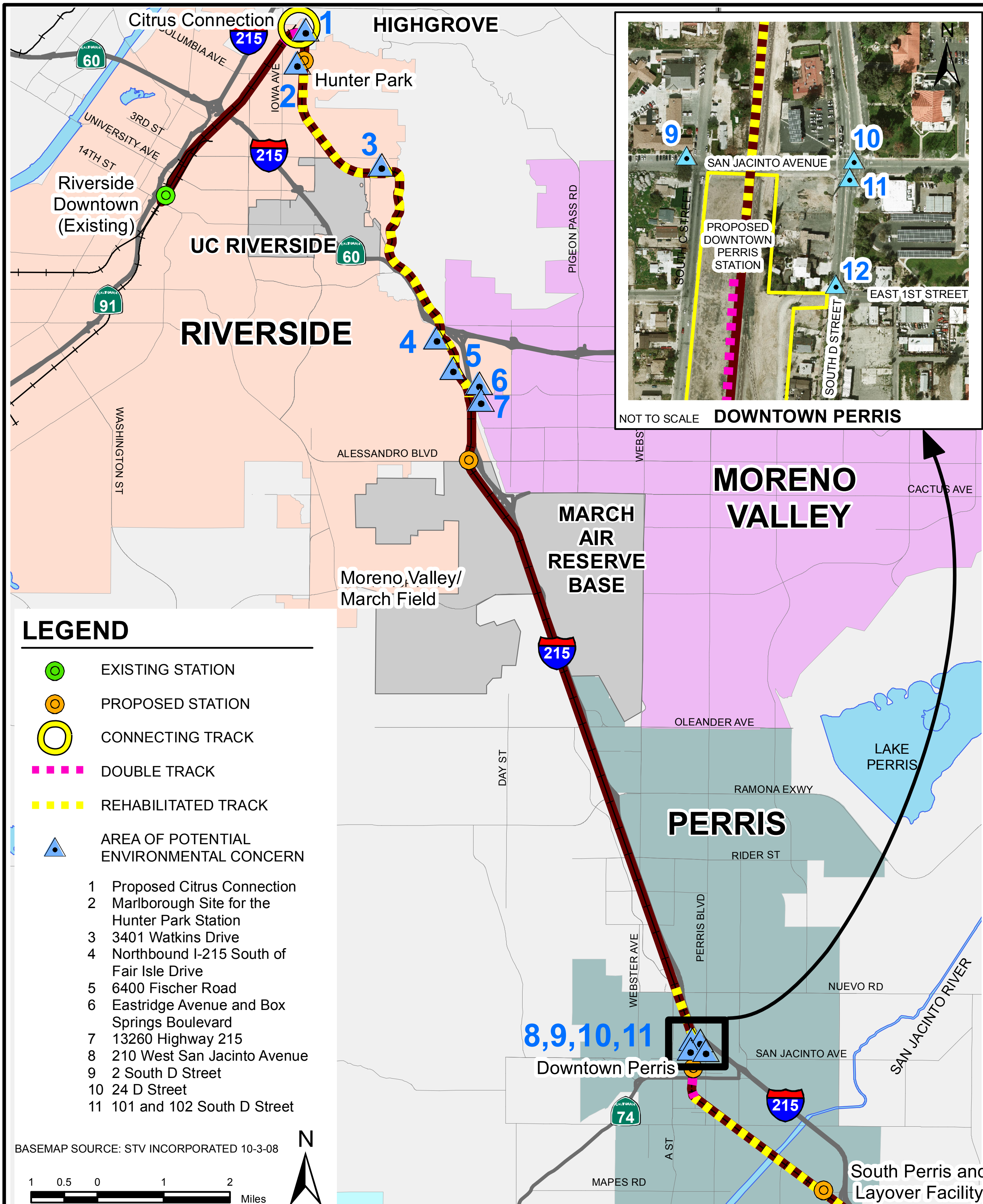
Layover Facility

It is expected that up to four trains would be stored at this facility overnight. Drips pans would be installed where engines are located in order to catch any dripping or leaking fuel oil, lubrication, or hydraulic fluid from engines laid up in the yard. There would be a train inspection pit located under one of the tracks. The pit allows train mechanics to inspect the undercarriage of the train. The drainage from the drip pans and the inspection pit would be directly connected to an oil/water separator system for treatment prior to discharge into the sanitary sewer system. The oil/water separator system would be periodically serviced to remove any accumulated waste. The oil/water separator system would be permitted through the National Pollutant Discharge Elimination System (NPDES), which has been authorized by the Clean Water Act (CWA).

Wildland Fires

Wildland fires pose a hazard to the public and environment adjacent to or intermixed with urban areas. A wildfire is any uncontrolled, non-structure fire that occurs in the wilderness, wildland, or bush. Wildfires are common in various parts of the world, occurring in cycles. They are often considered beneficial to the wilderness, as many plant species are dependent on the effects of fire for growth and reproduction. Wildfires differ from other fires only by their extensive size, the speed at which it spreads out from its original source, its ability to change direction unexpectedly, and to jump gaps, such as roads, rivers and fire breaks. According to the National Fire and Aviation Executive Board's "Interagency Strategy for the Implementation of the Federal Wildland Fire Policy", wildfires generally do not involve properties; however, with extensive urbanization of wilderness, they can cause extensive destruction of homes and other property located in the *wildland-urban interface*, a zone of transition between developed areas and undeveloped wilderness.

The Western Riverside County Natural Hazard Disclosure Map (Fire Map) provided by the California Department of Forestry and Fire Protection (CDFFP) was reviewed to determine the susceptibility of the PVL corridor to forest fire risks and hazards. According to the Fire Map, a section of the PVL corridor, east of Mt. Vernon Avenue to the I-215/SR-60 Interchange is shown to be in a wildland area that may contain substantial fire risks and hazards. Pursuant to Section 4125 of the Public Resources Code (PRC) and requirements of maintenance listed in Section 4291 of the same code, the owner of the property is the responsible party for maintaining fire protection services unless CDFFP has entered into a cooperative agreement with a local agency for this area pursuant to Section 4142 of the PRC. The remainder of the PVL corridor and adjacent properties are located in developed areas not shown within substantial fire risks or hazards.



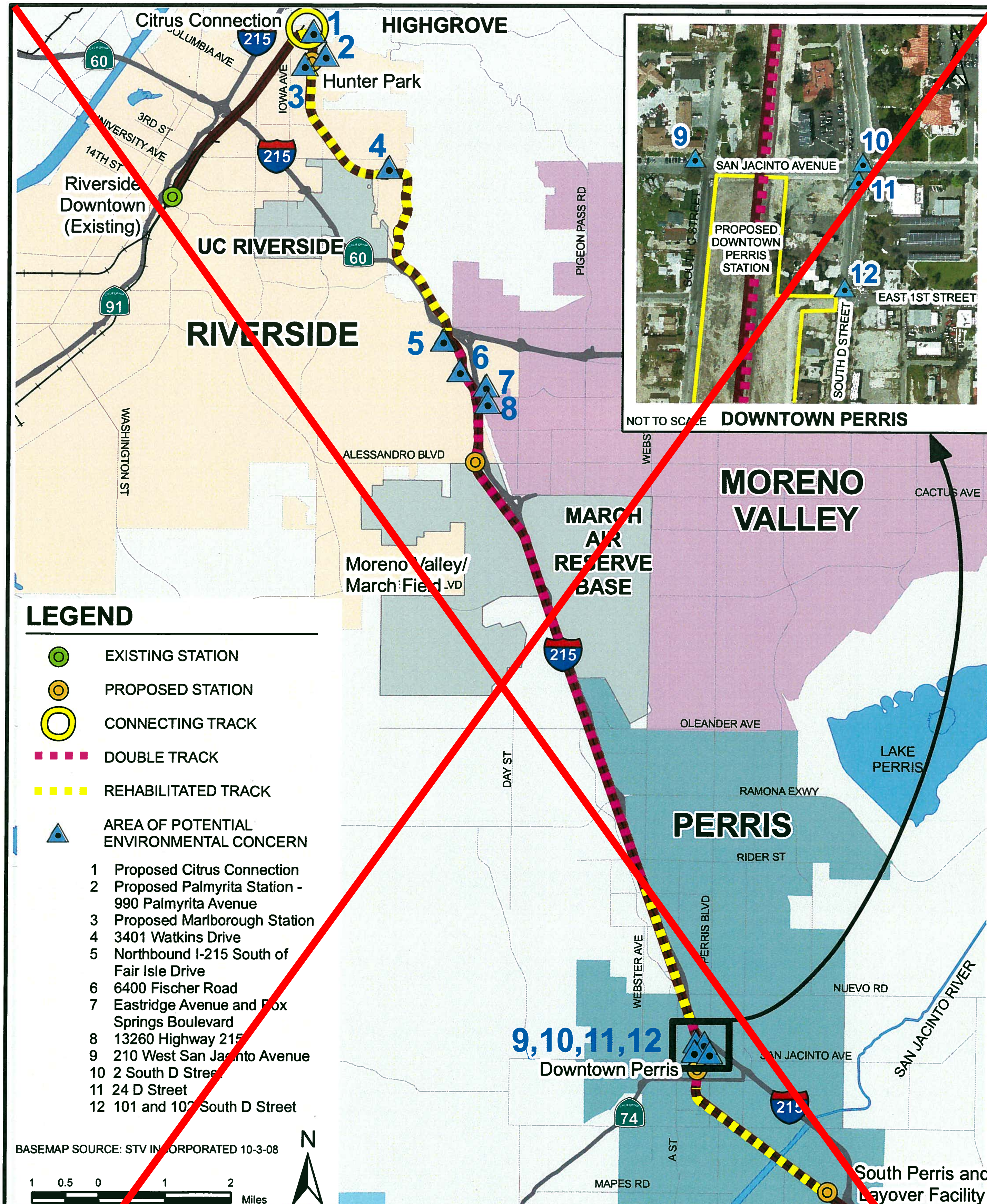
PROJECT NO.	92666
DRAWN:	12/19/11
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666envcon.MXD

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.8-1



Perris Valley Line

RCTC

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.	92666
DRAWN:	4/16/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666envcon.MXD	

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.8-1

3.8.3 Environmental Consequences/Impacts

Transport, Use, Or Disposal Of Hazardous Materials

The PVL corridor is an existing rail corridor that goes through light industrial, commercial, residential, and undeveloped areas. Adjacent land uses include residential, schools, parks, commercial, light industry, agriculture, and two active airports. Other infrastructure in the area includes natural gas and jet fuel pipelines.

Construction activities associated with the proposed project would involve the use of small volumes of commercially available hazardous materials, such as petroleum products (gasoline, diesel, and other oils), brake fluids, coolants, and paints. The use of these substances is governed by existing hazardous materials regulations, and would not adversely affect on-site construction workers or the public.

As a commuter rail line, PVL service is passenger only. As such, there would never be an occasion when hazardous materials would be transported on commuter trains. Any such materials incidental to construction and operational activities, including routine maintenance, would be required to be stored, used, and disposed of in accordance with existing federal, state, and local hazardous materials regulations, and would not adversely affect on-site construction workers or the public.

Each communication equipment shelter within the PVL corridor would contain a 250-gallon propane AST. Several arrays of batteries containing regulated heavy metals would also be located within the equipment shelters. The propane tanks would be used to operate emergency generators in the equipment shelters. Each of the tanks would be mounted on a concrete pad and permitted through the RCDEH. The ASTs would also be included in the Hazardous Materials Business Plan for the PVL project, which is kept on file with RCDEH. The storage and use of the heavy metals is regulated by federal, state, and county hazardous materials regulations.

The proposed Layover Facility would include portable track pans at each track to catch drips during emergency fueling. Routine fueling of the trains will not take place within the PVL project corridor. Regular or routine fueling will be at either the Colton (north of project area) or Taylor Yard (north of LA Union Station), outside of the project area. It is expected that up to four trains would be stored at this facility overnight. Drip pans would be installed where engines are located, in order to catch any dripping or leaking fuel oil, lubrication, or hydraulic fluid from engines laid-up in the yard. There would be a train inspection pit located under one of the tracks. The pit allows train mechanics to inspect the undercarriage of the train. Drainage from the drip pans and inspection pit would be directly connected to an oil/water separator system for treatment prior to discharge into the sanitary sewer system.

A construction SWPPP will be prepared and put into place during the construction of the entire project including the Layover Facility. As part of the Construction General Permit (CGP) requirements, the SWPPP will also include BMPs to minimize the potential for leaks and spills during operations (Kleinfelder, 2009). The SWPPP preparation is discussed in the Water Quality Section of this report (see Section 3.16 Water Quality).

Because only small volumes of hazardous materials anticipated to be used during construction operations, and maintenance, there will be no impacts due to the implementation of the project.

Sites of Potential Environmental Concern

The HMCS has identified locations of potential environmental concern within and adjacent to the PVL corridor. The sites of potential environmental concern are shown on Figure 3.8-1. The locations appearing on hazardous material site lists that pose an environmental concern to the PVL rail corridor are summarized below.

The Citrus Connection and selected Hunter Park Station options at Palmyrita and Marlborough were historically used for agricultural purposes. RCTC during the development of the Final SEA has selected the Marlborough site to be the Hunter Park Station. Therefore, it is possible that increased amounts of pesticides and/or herbicides are present at these sites. Soil excavation activities are proposed to take place at this site prior to the construction phase of the project and, as such, there may be hazards related to the soil for construction workers and the environment.

Based on the results of the "Limited Environmental Soil Sampling and Testing Report (Phase II)" for the Citrus Connection by Kleinfelder dated January 6, 2011 and the "Limited Environmental Soil Sampling and Testing Report (Phase II)" for the Marlborough Option by Kleinfelder dated April 29, 2010, pesticides, possibly resulting from former agricultural land use, were encountered at the proposed Citrus Connection and Marlborough (Hunter Park Station site) locations. The detected concentrations of these pesticides were below applicable regulatory screening levels. The detected concentrations therefore appear to be characteristic of non-hazardous waste and below the threshold of concern for risks to human health.

According to the EDR contained in the HMCS, approximately 75 gallons of diesel were released onto the railroad tracks during an automobile accident in 2001, to the south of Fair Isle Drive. It is possible that residual diesel is currently present on the railroad tracks. Since track rehabilitation is proposed for this segment, it is not anticipated that soil would be disturbed or excavated, and therefore, the health and safety of the construction workers would not be affected. The health and safety of the general public and railroad workers would not be affected during the operation and maintenance of the PVL. Therefore, there would be no impacts from the release by the implementation of the project.

A number of properties adjacent to the PVL corridor were identified as locations subject to unauthorized releases of substances from USTs and ASTs. The EDR records indicate that the releases may have impacted soil and groundwater. These releases may have an adverse effect to workers during excavation and dewatering activities in the construction phase. The following sites may have negative effects to the health and safety of construction workers during construction activities of the project, due to the proposed disturbance or excavation of soil within the PVL corridor:

- 6400 Fischer Road, Riverside - diesel AST release
- 13260 Highway 215, Riverside – gasoline UST release
- 2 South D Street, Perris - gasoline UST release

- 24 D Street, Perris - gasoline UST release
- 101 and 102 South D Street, Perris - gasoline UST release and waste oil release
- 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release

Because of the potential for soil contamination at the sites discussed above, there is a potential for significant impacts within the PVL project area (Mitigation Measure HHM-1 and HHM-2).

Accident Conditions with Potential to Release Hazardous Materials

Construction activities associated with the proposed project would involve the use of small quantities of hazardous materials. Hazardous materials will be required to be stored, used, and disposed of in accordance with existing federal, state, and local agency hazardous materials regulations.

Operation and maintenance activities associated with the proposed project would also involve the use of small quantities of hazardous materials. As previously stated, hazardous materials would be required to be stored, used, and disposed of in accordance with existing federal, state, and local agency hazardous materials regulations.

The pipelines located within the existing rail ROW were installed in accordance with the safety requirements of the owners. The pipelines are buried at a minimum of three feet below ground surface, or deeper if they are closer than 40 feet to the rail line, and/or are encased. There have been no reported leaks from the previously mentioned pipelines within or adjacent to the PVL corridor. There would not be an adverse effect on the environment, on-site workers, or the public during operation and maintenance of the PVL trains in these areas; therefore, there will be less than significant impacts through the implementation of the project from these pipelines.

Derailment could cause an accidental spill from the SCRAA/Metrolink train engines or diesel fuel tanks. It should be noted that the BNSF freight history has about 4.5 million freight train miles since 1993 (first full year of operation) and during this time, there have been only three freight train derailments. This equates to about one derailment per 1.5 million train miles or 0.000000667 (STV Incorporated, 2009).

On the SJBL, BNSF operates 11,440 train miles per year. The annual derailment risk is then the product of 0.000000667 (risk per train mile) and 11,440 miles, or 0.00801. This derailment risk equates to about once every 124 years. (STV Incorporated, 2009).

The numbers noted above represent an extremely low risk of derailment. This analysis, coupled with the PVL track improvements being made to the latest standards as dictated by FRA and SCRAA/Metrolink design criteria, will further decrease the risk of derailment potential. SCRAA/Metrolink would also regularly inspect the track to ensure safe operating conditions.

Since the preparation of the above identified risk assessment, SCRRA/Metrolink has made the decision that Positive Train Control will be in place on the PVL prior to operation of commuter service. This will further reduce the risk of an accident related to collision of trains sharing the corridor.

Due to the small volumes of hazardous materials anticipated to be used, safety practices, inspections, and design criteria for the PVL project, there would be no impacts.

Vicinity to Schools

Construction activities associated with the PVL project, near the schools, would involve the use of small volumes of commercially available hazardous materials, such as petroleum products (gasoline, diesel, and other oils), brake fluids, coolants, and paints. The use of these substances is governed by existing hazardous materials regulations. The construction of the PVL project would not include power lines or propane tanks within a 1,500-foot setback of the schools, nor would the project introduce newly constructed high pressure natural gas lines or gasoline lines.

Currently, the BNSF operates freight service along the SJBL corridor. The train engines contain oil and diesel fuel, in order to operate. Additionally, it should be noted that, on occasion, freight trains carry hazardous material for delivery to customers along the corridor, however, the PVL commuter trains would only contain oil and diesel fuel, in order to operate.

Section 4.3 Air Quality of this report notes that sensitive receptor sites, including schools are near mobile source emissions generated from freight trains using the SJBL, and from vehicles using the adjacent SR-60 and I-215 corridors. It is also noted that most PVL trains would pass by the schools either prior to the beginning of the school day or after the end of the day, resulting in less potential exposure to emissions. Simultaneously, vehicle emissions would be reduced with a shift of modes from private vehicles to the PVL and other reductions in mobile source pollution through increased vehicular speeds on the major vehicular corridors. Using the available interim guidance from the FHWA, the project is categorized as having low potential emission effects.

Exposure to MSATs as a risk to schools would result from the sitting of a new fixed, continuously operating point source of pollution, such as a stack from a factory. With an engine and the proposed train sets for the PVL, exposure to PM_{10} in diesel exhaust from passing commuter trains would be limited. The trains would pass by schools very quickly, for only several seconds along the PVL between stations. For most PVL movements, schools would not be in session, as most scheduled runs occur either before the start of the school day or after its completion. Opportunity for exposure to emissions is limited in occurrence and duration and is therefore no impact.

Vicinity to Airports

The PVL corridor and the proposed Moreno Valley/March Field Station are located west of I-215 and MARB airport, and within the boundaries of the airport land use plan of MARB. The proposed station would be located predominantly within Accident Potential Zone (APZ) II, which allows for industrial and transportation uses. As currently designed, a small southerly segment of the proposed parking lot associated with the station would be located in APZ I, which prohibits dense concentrations of people, but allows for parking lots (March JPA 2003). The Riverside County ALUC and March JPA ~~will~~ has reviewed RCTC's application to construct to ensure zone compatibility. On October 14, 2010 the Riverside County ALUC determined that the Moreno Valley/March Field Station to be consistent with airport land use plan subject to the following conditions:

1. Prior to the issuance of building permits, RCTC shall convey an avigation easement to the March Inland Port Airport Authority.

2. Any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.

3. The following uses shall be prohibited:

    a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.

    b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

    c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, livestock operations, production of cereal grains, sunflower, and row crops, artificial marshes, wastewater management facilities, composting operations, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, incinerators, and landfills.)

    d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

    e. Children's schools, hospitals, nursing homes, and highly noise-sensitive outdoor nonresidential uses.

4. Any ground-level or aboveground water retention or detention basin or facilities shall be designed so as to provide for a detention period for the design storm that does not exceed 48 hours (may be less, but not more), and to remain totally dry between rainfalls. Vegetation in and around such facilities that would provide food or cover for bird species that would be incompatible with airport operations shall not be utilized in project landscaping. Landscaping shall utilize plant species that do not produce seeds, fruits, or berries. Trees shall be spaced so as to prevent large expanses of contiguous canopy when mature.

5. Any proposed use identified on the site plan as a future use shall be reviewed by ALUC for consistency when proposed for a specific development.

The conditions of approval set by the ALUC for the Moreno Valley/March Field Station are included in the PVL project Specifications. Because the proposed Moreno Valley/March Field Station is within appropriate zoning uses, there would be no impact.

The South Perris and Layover Facility are located within MARB Safety Zone 3. The commuter railroad and related facilities are considered compatible facilities, and therefore no impact.

The Perris Valley Airport is located immediately south of Ellis Avenue and southwest of Case Road, approximately 500 feet southwest from the existing rail corridor. The airport is largely used for skydiving. The PVL corridor lies within the Perris Valley Airport Influence Area, from west of Goetz Road, along SJBL, to just east of Murrieta Road. In this Influence Area, only residential uses "are to be limited to areas not in the actual flight path and to areas where aircraft have gained sufficient altitude so as to no longer pose a relative safety threat" (City of Perris, 2005). Implementation of the PVL is not expected to result in a safety hazard for any people residing or working in the project area. The Perris Valley Airport is currently drafting a land use plan.

The Riverside County ALUC has reviewed RCTC's application to construct to ensure zone compatibility. On October 14, 2010 the Riverside County ALUC determined that the South Perris Station to be consistent with airport land use plan subject to the following conditions:

1. Prior to the issuance of building permits, RCTC shall convey an avigation easement to the March Inland Port Airport Authority.

2. Any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.

3. The following uses shall be prohibited:

    a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.

    b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

    c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, livestock operations, production of cereal grains, sunflower, and row crops, artificial marshes, wastewater management facilities, composting operations, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, incinerators, and landfills.)

d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

e. Children's schools, hospitals, nursing homes, and highly noise-sensitive outdoor nonresidential uses.

~~1.~~4. Any ground-level or aboveground water retention or detention basin or facilities shall be designed so as to provide for a detention period for the design storm that does not exceed 48 hours (may be less, but not more), and to remain totally dry between rainfalls. Vegetation in and around such facilities that would provide food or cover for bird species that would be incompatible with airport operations shall not be utilized in project landscaping. Landscaping shall utilize plant species that do not produce seeds, fruits, or berries. Trees shall be spaced so as to prevent large expanses of contiguous canopy when mature.

5. Structure height shall not exceed 40 feet, and no structure shall be located less than 3,841 feet from any point on the centerline of the runway at Perris Valley Airport, unless the Federal Aviation Administration has first issued a Determination of No Hazard to Air Navigation for said structure.

Emergency Response Plan and Emergency Evacuation Plan

During construction activities, the proposed project will require temporary re-routing of emergency response routes to avoid street closures. However, prior to construction, local emergency services for the project so that alternative travel routes can be identified prior to the road closure. Routine operation and maintenance of the PVL corridor would not interfere with emergency response or evacuation plans. The trains would not block grade crossings while at the stations because the stations were chosen in reference to the length of the trains and distance from the grade crossings. Emergency access would not be blocked, except briefly by a passing train. There would be no impact with mitigation in place (Mitigation Measure HHM-3).

Wildlands

A section of the PVL corridor, east of Mt. Vernon Avenue to the I-215/SR-60 Interchange is shown to be in a wildland area that may contain substantial forest fire risks and hazards. This area of Box Springs Mountain Reserve has been incorporated into a Wildfire Management Plan, and is under State of California responsibility for fire protection.

Evacuation plans caused to be put into effect by a wildland fire may be affected during construction activities because the proposed project will be temporarily closing streets or grade crossings will be temporarily closed or re-routed in this area. Routine operation and maintenance of the PVL corridor would not interfere with daily operations at the grade crossings and streets associated with these crossings. There would be no impact with mitigation in place (Mitigation Measure HHM-4).

3.8.4 Mitigation Measures

- **HHM-1:** ~~In areas where S~~Ssoil contamination is suspected at the ~~, appropriate sampling is required prior to disposal of excavated soil. Characterization of the soil is necessary prior to any ground-disturbing activities. Contaminated soil would be properly disposed at an off-site facility. The~~ following ~~sites will be characterized for possible soil contamination before excavation and/or construction activities begin~~locations:
  - 6400 Fischer Road, Riverside – diesel AST release
  - 13260 Highway 215, Riverside – gasoline UST release
  - 2 South D Street, Perris - gasoline UST release
  - 24 D Street, Perris - gasoline UST release
  - 101 and 102 South D Street, Perris – gasoline UST release and waste oil release
  - 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release

Prior to construction soil characterization shall occur and includes sampling and analysis, and drilling shall be coordinated with and under the guidance of the Riverside County Department of Environmental Health. RCTC shall contract with a qualified environmental consultant to determine if the soil has been sampled, characterized and disposed of properly according to state and federal regulations.

While detected concentrations of pesticides at the Citrus Connection and Marlborough (Hunter Park Station site) locations were below applicable regulatory screening levels, and therefore appear to be characteristic of non-hazardous waste and below the threshold of concern for risk to human health, the general recommendations from Kleinfelder's Phase II reports are expected to be incorporated into the project Specifications should chemically-impacted soil be encountered during construction activities.

- ~~**HHM-2:** If the Palmyrita Avenue site is selected for the Hunter Park Station, but is not properly remediated prior to acquisition, RCTC would~~ shall ~~require the potentially responsible party to remove and remediate hazardous conditions and materials pursuant to the requirements of the local, state, and federal regulations. If, prior to acquisition, the current~~ property ~~owner does not complete proper remediation, RCTC will~~ shall ~~perform the remediation in accordance with a Health and Safety Plan~~, ~~and in accordance with the required protocols for the removal and disposal of hazardous materials.~~

  ~~Because of the potential for soil contamination, sampling and disposal plans will~~ shall ~~be implemented prior to~~ Pre-~~C~~construction ~~according to the~~ a site-specific ~~hazardous materials investigation work plan.~~

- **HHM-3:** ~~Before~~ Prior to construction ~~activities commence,~~ RCTC ~~will develop~~shall prepare a traffic management plan ~~prior to starting construction~~. The ~~contractor will also work with~~traffic management plan shall be prepared in consultation with local jurisdictions to

~~minimize impacts to existing emergency response or evacuation routes. At a minimum, the traffic management plan will address:~~ determine detour routes~~s~~,~~;~~ ~~coordination with other construction projects (if applicable);~~ length and timing of any ~~street~~ closures,~~;~~ temporary access routes, signage, ~~length and timing of any grade crossing closures;~~ coordination with police, ~~and~~ fire departments, and nearby schools regarding changes in emergency access routes. An additional component of the plan shall be coordinating with local emergency response agencies to identify emergency evacuation routes in the event of a wildland fire near PVL facilities. This traffic management plan is the same as the traffic management plan required by Mitigation Measure TP-4~~; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors~~.

- **HHM-4:** ~~Before construction activities commence, RCTC will develop a traffic management plan with local jurisdictions to minimize impacts to existing emergency response or evacuation routes. At a minimum, the traffic management plan would address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors~~See Mitigation Measure HHM-3 above since it also covers the need for a traffic management plan for this project.~~.~~

This Page Intentionally Left Blank

3.9 UTILITIES AND SERVICE SYSTEMS

The following provides a discussion of utilities and the associated service systems that may be affected by the proposed project.

3.9.1 Regulatory Setting

Federal Policies and Regulations

Clean Water Act

The CWA is the primary federal law in the United States governing water pollution (33 USC 1251-1376). The CWA established the goals of eliminating releases to water of high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983. Under the CWA, the USEPA's Office of Waste Management works together with USEPA regions, states and tribes to regulate discharges into surface waters such as wetlands, lakes, rivers, estuaries, bays and oceans. Specifically, the Office of Waste Management focuses on control of water that is collected in discrete conveyances (also called point sources), including pipes, ditches, and sanitary or storm sewers (USEPA, 2009).

The Federal Water Pollution Control Act prohibits the discharge of any pollutant to navigable waters unless the discharge is authorized by a NPDES permit. Since 1990, operators of stormwater systems have been required to develop a stormwater management program designed to prevent harmful pollutants from being washed away by stormwater runoff and discharged into local water bodies. In California, the SARWQCB administers the NPDES permitting program (SARWQCB, 2009).

United States Environmental Protection Agency

USEPA defines solid waste as any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities (USEPA, 2009). "Other" wastes regulations are set forth in 40 CFR 273, including batteries, pesticides, and some conditionally exempt small quantity generators.

Federal Transit Administration's Final Rule, Title 49 CFR 659

Under Title 49 of CFR, the FTA published a set of regulations to create a state-managed safety and security oversight program for rail transit agencies not regulated by FRA. This regulation was published as "Rail Fixed Guideway Systems; State Safety Oversight" on December 27, 1995, and referred to as the State Safety Oversight (SSO) Rule or Part 659. FTA recently amended 49 CFR 659, publishing the revised Rule in the FR on April 29, 2005. The revised Rule adds clarifying sections, further specification concerning what the state must require to monitor safety and security of rail transit systems, and incorporates into the body of the regulation material previously incorporated by reference (FTA, 2006).

Federal Rail Safety Improvement Act

Under §202 of the Federal Rail Safety Improvement Act of 2008, by October 16, 2009, the Secretary of the U.S. Department of Transportation is to have identified ten states that have had the most grade crossing collisions on average over the past three years and require those states to submit grade crossing safety plans. The plans must identify specific solutions for improving safety at crossings, including highway-rail grade crossing closures or grade separations, and must focus on crossings that have experienced multiple accidents or are at high risk for such accidents. Because of the number of accidents recorded in the past, it is likely that California will be chosen as one of these states to provide safety plans under Federal Rail Safety Improvement Act (CPUC, 2009).

Title 23, United States Code, §130

Under 23 USC §130, California as well as all other states are required to maintain a survey of all of its highways to identify those grade crossings that may require grade separation, relocation, or protective devices (e.g., automatic crossing gates), and to establish and implement a schedule of projects for these purposes. The CPUC maintains such a database of crossings, and conducts an annual evaluation of crossing data to identify crossings where safety can be improved (CPUC, 2009).

State Policies and Regulations

California Public Utilities Commission

The CPUC is a state public utilities commission which regulates privately-owned utilities in the state of California, including electric power, telecommunications, natural gas and water companies. In addition, the CPUC regulates household goods movers, passenger transportation companies and grade crossing safety. The CPUC is the designated state oversight agency in California, in accordance with the FTA's Final Rule, Title 49 CFR 659, and effective May 5, 2007 (CPUC, 2009).

CPUC General Order 95 and General Order 128

The Commission's General Order 95 defines safe practices for utility poles and wiring. It defines safe separation between high voltage conductors, guy wires, cable television, and telephone cable. For example, GO-95 defines how high a telephone cable must pass over a roadway. It restricts attachments to poles to allow adequate, safe climbing space for personnel who work aloft. By ensuring an orderly and reliable system is used, risks to the public and track employees are reduced. A similar system is specified for underground utilities in the Commission's GO-128.

Title 27 of the California Code of Regulations

Title 27 of the California Code of Regulation (CCR), Division 2, is the State Water Resources Control Board (SWRCBs) regulations applicable to the discharge to land of waste that is not hazardous waste. All of the active landfills currently located in Riverside County are classified as Class III landfills; accepting only non-hazardous and municipal solid wastes (California Integrated Waste Management Board, 2009).

California Department of Water Resources

The California Department of Water Resources (CDWR) manages California's water resources. The regulations overseen by CDWR regarding water service availability include the Urban Water Management Planning Act and SBs 221 and 610. The California Act, adopted in 1983, requires all urban water suppliers within the state to prepare an Urban Water Management Plan and update them every five years (CDWR, 2003).

California Integrated Waste Management Act

The California Integrated Waste Management Act (PRC §40000 et seq.) requires municipalities to divert 25 percent of their solid waste from landfills to recycling facilities by 1995 and 50 percent by 2000.

<u>Local Policies and Regulations</u>

Riverside Public Utilities Department Guidelines, Standards, and Policies

Riverside Public Utilities Department (RPUD) provides electricity to most of the city of Riverside. Southern California Edison (SCE) provides electricity to the other parts of the city and county of Riverside. RPUD has established its own set of guidelines, standards, and policies relating to the use and construction of electrical utilities for projects within the City limits.

County of Riverside General Plan

The Riverside County General Plan Land Use Element (2003) includes several applicable policies:

- Land Use Goal 1.6: Coordinate with local agencies, such as LAFCO, service providers and utilities, to ensure adequate service provision for new development.

- Land Use Goal 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, transportation systems, and fire/police/medical services.

- Land Use Goal 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

- Land Use Goal 5.4: Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned ROW and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.

City of Riverside General Plan

The City of Riverside General Plan Public Facilities and Infrastructure Element includes several applicable policies:

- Public Facilities Goal 6.2: Ensure that adequate back-up facilities are available to meet critical electrical power needs in the event of shortages or temporary outages.
- Public Facilities Goal 6.3: Promote and encourage energy conservation.

City of Perris General Plan

The City of Perris General Plan Conservation Element includes the following goals:

- Conservation Element Goal V – Water Supply:

  Provide an adequate water supply to support existing and future land uses, as anticipated in the Land Use Element.

- Conservation Element Goal VI – Water Quality:

  Achieve regional water quality objectives and protect the beneficial uses of the region's surface and groundwater.

March Joint Powers Authority General Plan

The March JPA General Plan Land Use Element includes several applicable policies:

- Land Use Goal 15: In compliance with state laws, ensure solid waste collection, siting and construction of transfer and/or disposal facilities, operation of household hazardous waste disposal programs and education are consistent with the County Solid Waste Management Plan.
- Land Use Goal 16: Adequate supplies of natural gas and electricity from utility purveyors and the availability of communications services shall be provided within the March JPA Planning Area.
- Land Use Goal 17: Adequate flood control facilities shall be provided prior to, or concurrent with, development in order to protect the lives and property within the March JPA Planning Area.

3.9.2 Affected Environment

The following section provides a discussion of utilities and service stations specific to the PVL.

Utilities and service systems in the PVL corridor include power distribution, wastewater treatment, storm water drainage, water supply, communications, heating systems, and solid waste collection and removal.

Power Distribution

Electricity would be distributed to the grade crossings proposed for improvement, including gates, signals, and switches; six communication towers and associated equipment shelters; each of the four proposed stations and associated parking lots, the Citrus Connection, and the Layover Facility. Electricity is supplied to the PVL corridor by SCE and RPUD. Overhead electrical transmission lines are also located along the PVL corridor, which are used as local distribution sources.

Water Supply

Water is supplied to the area immediately adjacent to the BNSF Alignment and Citrus Connection by the Riverside Public Utilities Service Area (RPUSA). The Hunter Park area and Moreno Valley/March Field Station would have water supplied by Western Municipal Water District (WMWD). WMWD's primary source of water is the Metropolitan Water District (MWD), with a seasonally low demand secondary supply provided by the City of Riverside. The EMWD would provide and distribute water to the proposed South Perris Station and the Layover Facility. The City of Perris Water District owns, operates, and maintains water lines near the proposed Downtown Perris Station. During construction, water would be supplied by water trucks.

Wastewater Treatment

Sanitary sewer systems within the PVL corridor are owned and maintained by four water and sewer districts. The WMWD and the Riverside Public Works Department cooperatively own and maintain the sanitary sewer system in the area around the Citrus Connection, and Hunter Park area. Treatment in this area occurs at the Riverside Regional Water Quality Treatment Plant. The EMWD owns and maintains the sanitary sewer system located at the Moreno Valley/March Field Station, South Perris Station, and the Layover Facility. The Downtown Perris Station's sanitary sewer system is owned and maintained by the City of Perris Sewer District. The City of Perris Sewer District sewers discharge into EMWD trunk lines and the wastewater is processed at the Perris Valley Regional Water Reclamation Facility (PVRWRF) south of Case Road and west of the I-215 Freeway (City of Perris, 2005).

Storm Water Drainage

Storm water drains within the PVL corridor are owned and maintained by RCTC and flow into the RCFCWCD storm water drainage system. Most of the storm water runoff flows directly into a storm drain system by way of street gutters and other inlets and associated culverts located within the PVL corridor. This flow of storm water would eventually discharge into the Santa Ana River from the northern portion of the project, or the San Jacinto River from the southern portion.

Communications

The communications system within the PVL corridor would consist of communication towers and associated equipment shelters with locations shown on Figure 3.9-1. The project includes the construction of nine towers for communications (three radio antenna towers and six microwave antenna towers) along the PVL corridor. Details of the two types of communication towers are shown on Figure 3.9-2 and Figure 3.9-3. They would be located at the East Maintenance Facility (outside of the PVL corridor), Hunter Park Station, Control Point (CP) Eastridge, CP Oleander, CP Nuevo, and South Perris Station. Communication cables would link CP Citrus and CP Hunter Park, and CP Mapes would be linked to South Perris Communications Shelter via similar communications cables.

Solid Waste Collection and Removal

Solid waste collected would be taken to the Robert A. Nelson Transfer Station, which is owned by the county of Riverside. The waste would then be transferred to either the Badlands Landfill in Moreno Valley or the El Sobrante Landfill located east of I-15 south of the city of Corona.

3.9.3 Environmental Consequences/Impacts

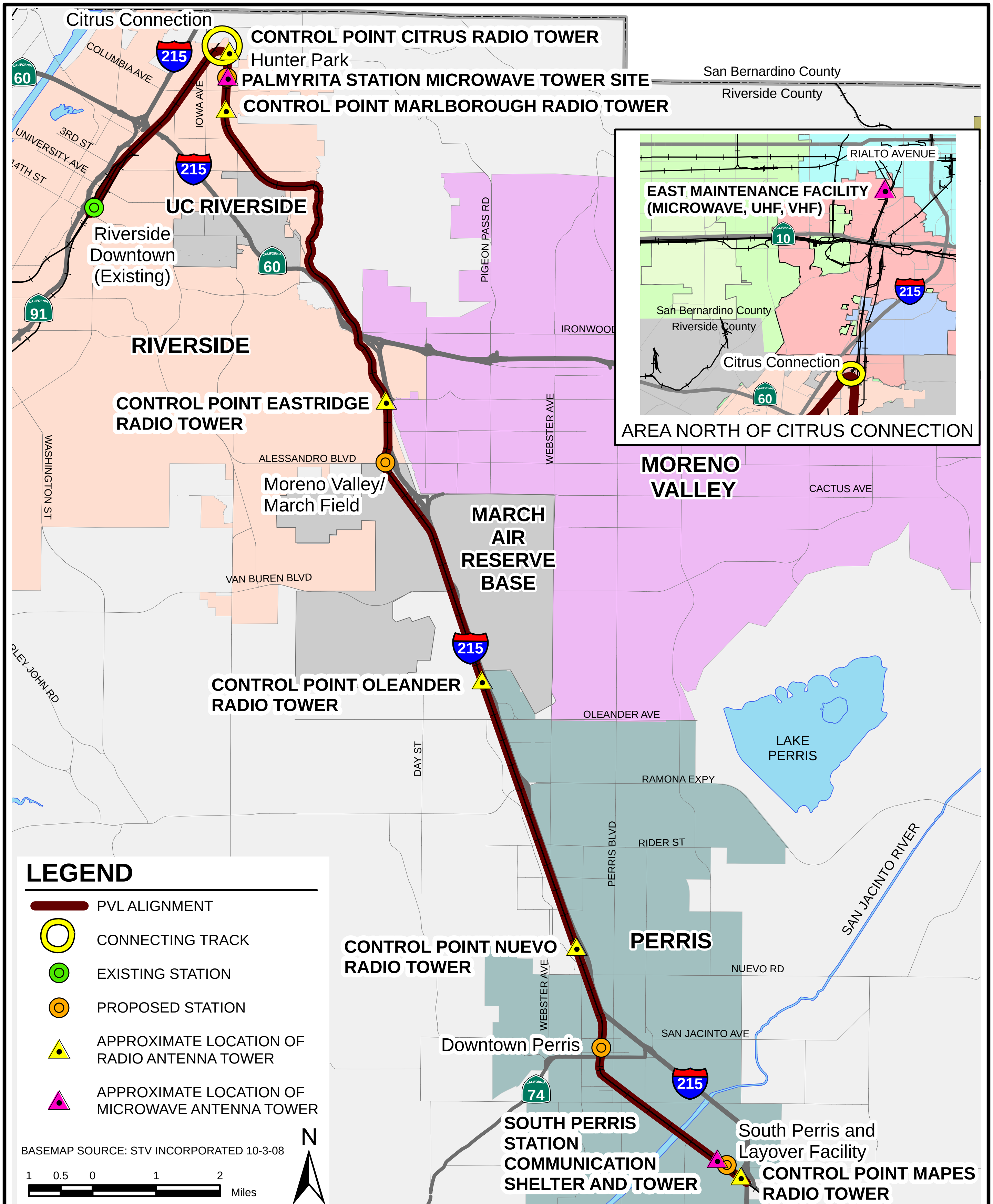
Power Distribution

The relocation and installation of utilities is not anticipated to cause an extended disruption in service of power to the areas near the PVL corridor. If temporary disruption is anticipated during the connection of the new power systems within the PVL corridor, local residents and businesses that may be affected will be notified in advance of any outage.

Since power distribution provided by SCE or RPUD is readily available within the PVL corridor, the amount of electrical power proposed to be used within the PVL corridor would not cause a significant impact to the environment during construction, operations or maintenance.

Wastewater Treatment

During construction of the PVL, construction personnel would use rented portable restrooms and sinks, which would be transported to a wastewater treatment facility for proper treatment. Restrooms would not be constructed at the proposed stations within the PVL corridor; however, the trains themselves would contain restrooms. The toilets and other wastewater collected on the trains would be evacuated into the wastewater system at the Layover Facility and treated at the PVRWRF. In addition, the Layover Facility would provide restroom facilities for approximately 70 employees. The volume of waste generated by the trains and Layover Facility would not exceed wastewater treatment capacities established by the SARWQCB. Additionally, since the source of wastewater is very limited, no new treatment facilities are necessary, nor are existing facilities required to expand, therefore, there will be no impacts related to wastewater treatment requirements.



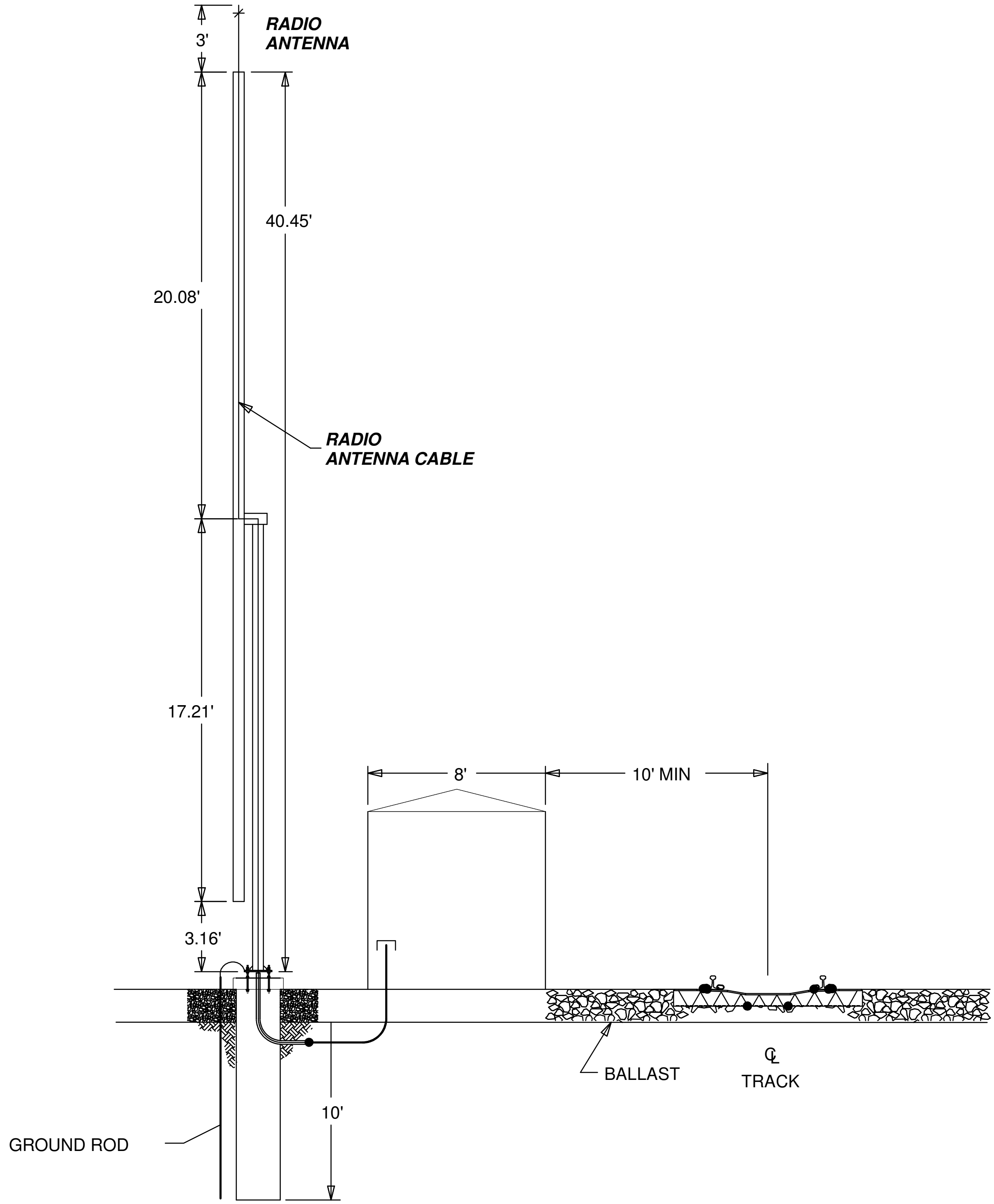
Perris Valley Line — RCTC — KLEINFELDER

PROJECT NO.	92666
DRAWN:	1/5/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666talk.MXD

COMMUNICATION TOWER LOCATIONS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE 3.9-1



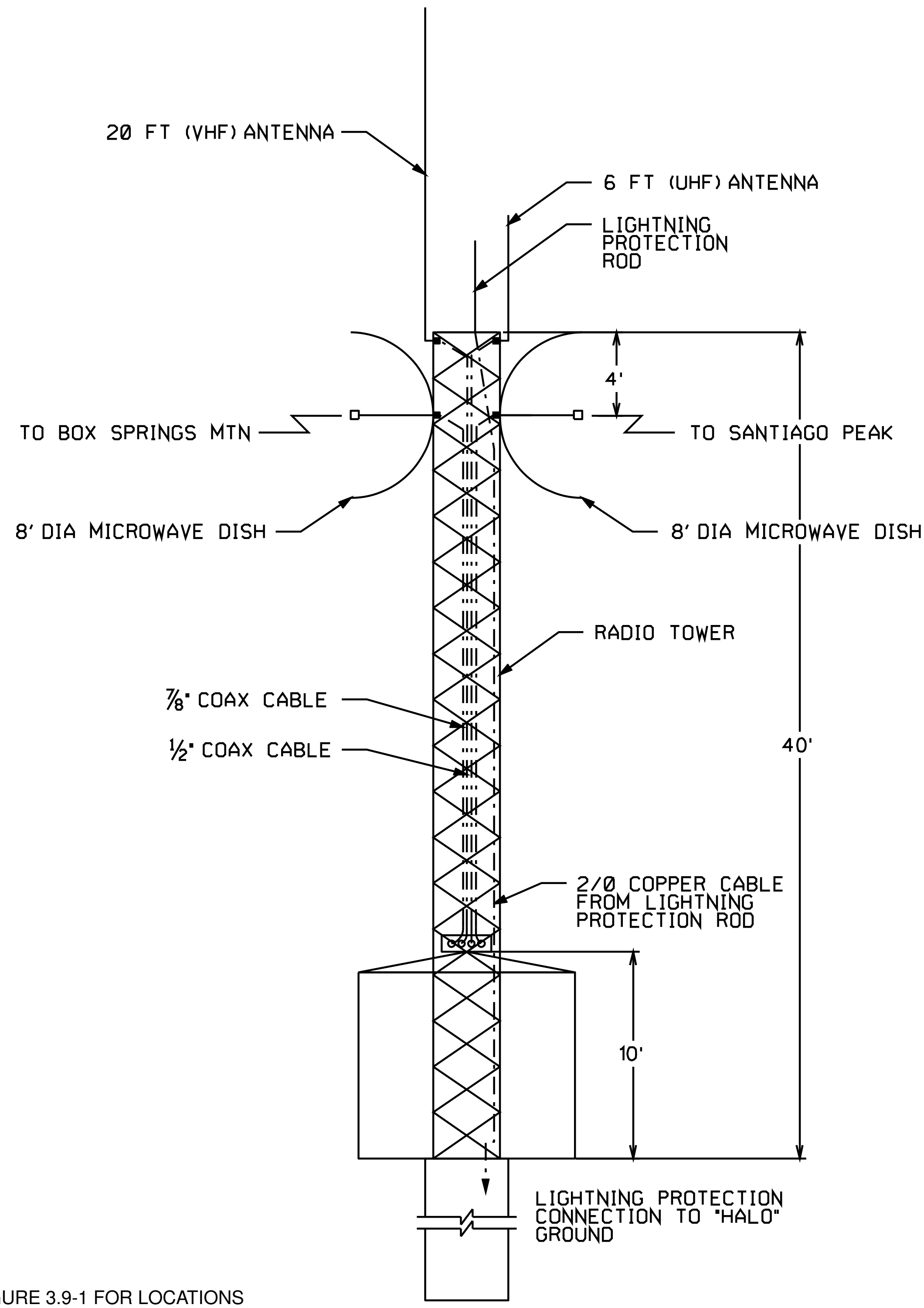
NOTE:

REFER TO FIGURE 3.9-1 FOR LOCATIONS

SOURCE:

30% DESIGN DRAWINGS

PROJECT NO.	92666	**TYPICAL RADIO ANTENNA TOWER**	FIGURE	
DRAWN:	1/12/10			
DRAWN BY:	JP		3.9-2	
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA		
FILE NAME: 92666tower.MXD				



NOTE:

REFER TO FIGURE 3.9-1 FOR LOCATIONS

SOURCE:

30% DESIGN DRAWINGS

PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666tower2.MXD

TYPICAL MICROWAVE ANTENNA TOWER

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.9-3

Storm Water Drainage

Within the PVL corridor, there are 53 culverts of which 30 would be replaced or reconstructed as part of the project. Additional storm water drainage would be generated from the parking lots at the proposed PVL stations. Project stations and parking lots eventually drain into either the Santa Ana River or San Jacinto River. Additional storm water drainage would not affect the local drainage facilities during operation and maintenance. Sheet flow across proposed station parking lots during construction is expected to be controlled by installation of BMPs as is required by the stormwater regulations from the Regional Water Quality Control Board.

Water Supply

Water would be supplied to each of the proposed stations and Layover Facility. During construction, water would be supplied by water trucks to control fugitive dust. Limited supplies of water would be used for irrigation and maintenance of the PVL facilities when fully operational. Because of the limited amounts of water needed for the Layover Facility and the use of recycled water for irrigation of landscaping and maintenance, there would be no impacts in regards to water supply for the project.

Solid Waste Collection and Removal

The project will rehabilitate the existing rail, create a new by-pass track, and build new stations and a Layover Facility. This work will generate limited solid waste because the rail and ties that will be removed will be reused within the overall rail system and not disposed of in a landfill. The remaining work will be new construction which will generate used concrete forms and other waste.

The proposed project would comply with federal, state and local statutes and regulations related to solid waste, which includes recycling programs developed by the cities of Riverside and Perris. During construction, small quantities of non-recyclable solid waste, in the form of construction waste and other debris will be generated by the project. This material would be recycled, reused to the full extent practicable. Any remaining material would be disposed of at an approved Class III landfill in compliance with applicable rules and regulations. This includes the California Integrated Waste Management Act requirements for municipalities to divert 50% of their solid waste to recycling facilities by 2000.

During the operation and maintenance of the PVL, very small quantities of solid waste (miscellaneous litter and debris from the trains), proposed stations, and Layover Facility would be disposed at a Class III landfill in compliance with applicable rules and regulations. Therefore, no impacts would occur from the implementation of the project.

3.9.4 Mitigation Measures

There are no impacts, therefore, no mitigation measures are proposed.

This Page Intentionally Left Blank

3.10 SECTION 4(F) EVALUATION AND PARKLANDS

This section identifies Section 4(f) parkland and historic resources within and adjacent to the PVL corridor, and evaluates the proposed PVL project with respect to Section 4(f) of the Department of Transportation Act of 1966.

3.10.1 Regulatory Setting

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303) states that it is "the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) applies only to the actions of agencies within the USDOT. The proposed PVL is a transportation project that is scheduled to receive federal funding, in part, through the FTA's Small Starts category and would also be subject to review by the FRA. As the lead federal transportation agency, FTA must demonstrate compliance with Section 4(f).

> *Section 4(f) specifies that:*
>
> *"[t]he Secretary [of Transportation] may approve a transportation program or project…requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:*
>
> *(1) there is no prudent and feasible alternative to using that land; and*
>
> *(2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."*

<u>Section 4(f) "Use"</u>

As defined in 23 CFR 774.17, the "use" of a protected Section 4(f) resource occurs when any of the following conditions are met:

- Land is permanently incorporated into a transportation facility through partial or full acquisition (that is, "direct use");
- There is a temporary occupancy of land that is adverse in terms of the preservationist purposes of Section 4(f) (that is, "temporary use"); or
- There is no permanent incorporation of land, but the proximity of a transportation facility results in impacts so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (that is, "constructive use").

Direct Use

A direct use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation project (23 CFR 774.17). This may occur as a result of partial or full acquisition of a fee simple interest, permanent easements, or temporary easements that exceed regulatory limits noted below.

Temporary Use

A temporary use of a Section 4(f) resource occurs when there is a temporary occupancy of property that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. Under the Federal Highway Administration (FHWA)/FTA regulations (23 CFR 774.13), a temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are met:

- The occupancy must be of temporary duration (that is, shorter than the period of construction) and not involve a change in ownership of the property;
- The scope of work must be minor, with only minimal changes to the protected resource;
- There are no permanent adverse physical effects on the protected resource, and there would be no temporary or permanent interference with activities or purpose of the resource;
- The property being used must be fully restored to a condition that is at least as good as that which existed prior to the proposed project; and
- There must be documented agreement of the appropriate officials having jurisdiction over the resource regarding the foregoing requirements.

Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (for example, noise, vibration, visual, access, and/or ecological impacts) so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished. A determination of constructive use is based on the following:

- Identification of the current activities, features, or attributes of the Section 4(f) resource that may be sensitive to proximity impacts;
- Analysis of the potential proximity impacts on the resource; and
- Consultation with the appropriate officials having jurisdiction over the resource (23 CFR 774.17).

3.10.2 Affected Environment

As described above, resources considered under Section 4(f) include public park and recreation areas, wildlife and waterfowl refuges, and historic sites. For the PVL project, only those public parks, recreation lands, wildlife and waterfowl refuges within one-half mile of the project corridor, and only those historic sites within the project's APE (refer to Section 3.7 Cultural Resources for a description of the project APE), have been identified for Section 4(f) consideration. The one-half mile distance was determined as the typical distance, or standard of care, for a transportation related project.

Public Parks and Recreation Areas

Several public parks and recreations areas have been identified adjacent to or within one-half mile of the PVL corridor. These public parks and recreation areas are summarized in Table 3.10-1 and their locations depicted on Figure 3.10-1.

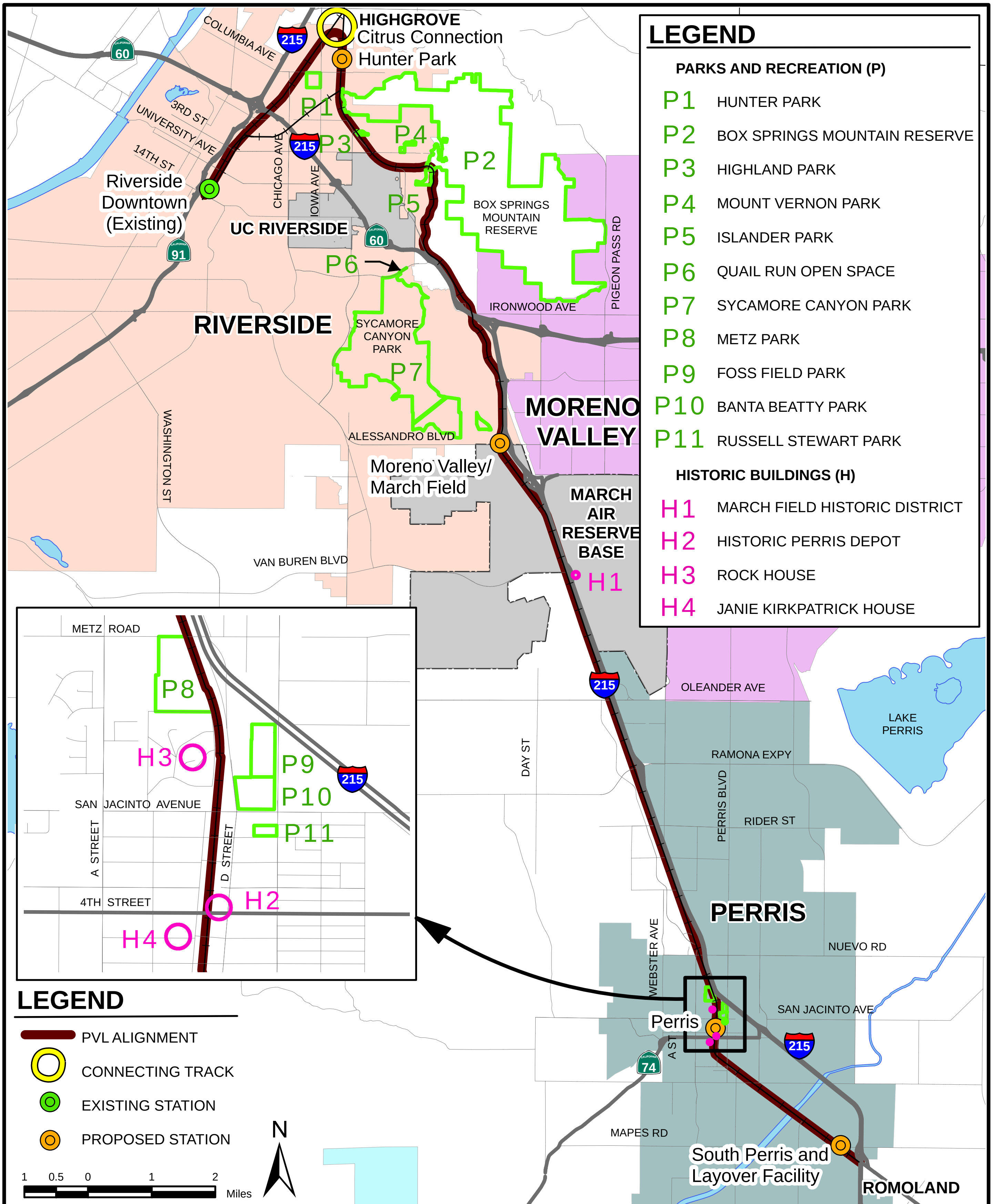
Table 3.10-1
Public Parks and Recreation Areas

Map ID	Name	Jurisdiction
P1	Hunter Park	City of Riverside
P2	Box Springs Mountain Reserve	County of Riverside
P3	Highland Park	City of Riverside
P4	Mount Vernon Park	City of Riverside
P5	Islander Park	City of Riverside
P6	Quail Run Open Space	City of Riverside
P7	Sycamore Canyon Park	City of Riverside
P8	Metz Park	City of Perris
P9	Foss Field Park	City of Perris
P10	Banta Beatty Park	City of Perris
P11	Russell Stewart Park	City of Perris

Wildlife or Waterfowl Refuges

There are no waterfowl refuges within one-half mile of the PVL corridor. There are, however, seven areas that cross or are within one-half mile of the PVL which have been reserved for the protection of threatened and endangered wildlife species. These conservation areas are the result of comprehensive municipal planning efforts, which are documented in the Western Riverside County MSHCP and the SKR HCP. A brief overview of these plans is provided below. Section 3.14 Biological Resources presents a detailed description of the MSHCP and the SKR HCP, and provides a discussion of the PVL project's compliance with the requirements of these plans.

This Page Intentionally Left Blank



PROJECT NO.	92666
DRAWN:	1/5/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666park1.MXD

PARKLANDS AND SECTION 4(f) RESOURCES WITHIN 1/2 MILE OF SJBL

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.10-1

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a means for consolidating and preserving core areas with suitable vegetation and soils to support species, while at the same time preventing fragmented habitat. The MSHCP covers 146 plant and wildlife species, and is administered by the Western Riverside County Regional Conservation Authority (RCA). One of the primary objectives of the MSCHP is to assemble a total of 500,000 acres for management as the MSHCP Conservation Area. The MSHCP identifies a number of existing and proposed features – including cores, habitat blocks, and linkages – which form the basis of the plan's Conservation Area (refer to Section 3.2.3 of the MSHCP). There are five MSHCP Conservation Area Features located within one-half mile of the PVL corridor (refer to Section 3.14 Biological Resources and Figure 3.14-1 for the location of these features).

Stephens' Kangaroo Rat Habitat Conservation Plan

The Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) established seven permanent core area reserves for SKR, one of which is in the vicinity of the proposed PVL project as shown in Figure 3.14-3 (Riverside County Habitat Conservation Agency [RCHCA], 2007). The Sycamore Canyon-March Air Force Base Core Reserve is located west of I-215 and the existing PVL corridor. The SKR Reserve covers approximately 2,502 acres across two components. The proposed Moreno Valley/March Field Station is located near the SKR Reserve but outside of the boundaries. During the planning for the Meridian Business Park the SKR Reserve boundary was relocated so that all of the Meridian Business Park is now outside the SKR Reserve. This boundary was relocated after negotiations with U.S. Fish and Wildlife Service. All PVL project components are located outside the SKR Core Reserves. However, the PVL project is still within the SKR Fee Area. Any project located within the fee area is required to pay a mitigation fee to fully mitigate project impacts.

~~The SKR HCP is administered by the Riverside County Habitat Conservation Agency (RCHCA). The Sycamore Canyon-March Air Force Base Core Reserve is located west of I-215 and the existing PVL corridor. The SKR area reserve covers approximately 2,502 acres across two components. The proposed Moreno Valley/March Field Station; as part of the Meridian Business Park, has been removed from the SKR Sycamore Canyon-March Air Force Base Core Reserve by agreement between USFWS and March JPA. Since the station site is identified within this Specific Plan, no further impacts would result from the construction of the Moreno Valley/March Field Station. All other PVL project components are located outside the SKR Core Reserves. (refer to Figure 3.14-3)~~

Historic Sites

The FHWA/FTA regulations state that Section 4(f) is only applicable to *significant* historic sites (that is, those resources listed on or determined eligible for listing on the NRHP), unless the lead federal transportation agency determines that the application of Section 4(f) is otherwise appropriate (23 CFR 774.11 (e)).

Section 4(f) also applies to all archaeological sites that are listed on or determined eligible for listing on the NRHP, including those discovered during construction (23 CFR 774.11 (f)). Section 4(f) does not apply to archaeological sites where the lead federal transportation agency has determined that the archaeological site is important chiefly because of what can be learned by data recovery (even if it is agreed not to recover the resource) and has minimal value for preservation in place (23 CFR 774.13 (1)); such sites are not evaluated.

The historic sites listed on or eligible for listing on the NRHP are summarized in Table 3.10-2 and depicted on Figure 3.10-1. The NRHP eligibility of three of the four archaeological sites identified within the APE (that is, CB-2, CA-RIV-2384, and CA-RIV-4497H/3817H) is unknown. For the purposes of Section 4(f) consideration, these resources are assumed to be eligible in order to evaluate whether the PVL project would constitute a "use" of these resources. The exact locations of archaeological sites are confidential, and therefore are not included on Figure 3.10-1.

Table 3.10-~~1~~2
NRHP Listed or Eligible Resources

Map ID	Resource	Description	Eligibility Status	Distance from PVL Corridor
H1	March Field Historic District (within March Air Reserve Base)	District of military buildings	Listed, Criteria A and C	< 1 mile east of SJBL alignment
H2	Perris Depot (120 West 4th Street)	One story Victorian railroad depot	Listed, Criteria A and C	Adjacent to east side of SJBL alignment
H3	Rock House (246 Lomita Drive, Perris)	Two story stone clad Mission Revival style single-family residence	Recommended Eligible, Criterion C[1]	500 ft west of SJBL alignment, elevated 100 ft
H4	Janie Kirkpatrick House (504 South C Street, Perris)	One story Victorian cottage	Recommended Eligible, Criteria B and C[1]	300 ft west of SJBL alignment
--	CB-2	Bedrock milling site	Not evaluated	East of SJBL alignment
--	CA-RIV-805	Prehistoric artifact scatter	Not eligible	Adjacent to SJBL alignment
--	CA-RIV-2384	Bedrock milling site	Not evaluated	Adjacent to SJBL alignment
--	CA-RIV-4497H / 3817H	Box Springs siding; historic artifact scatter; prehistoric features	Not evaluated	Adjacent to SJBL alignment

Notes:
1 = ~~Pending~~ SOHP~~O~~ concurrence obtained for the project.

3.10.3 Environmental Consequences/Impacts

Citrus Connection

No resources protected under Section 4(f) have been identified in the vicinity of the proposed Citrus Connection, and therefore no Section 4(f) "use" would occur.

SJBL Alignment

Several Section 4(f) resources have been identified within one-half mile of the existing SJBL alignment, and include public parks and recreation areas, wildlife areas, and historic sites.

These resources include:

- Highland Park
- Islander Park
- Box Springs Mountain Reserve
- Mount Vernon Park
- Quail Run Open Space
- Sycamore Canyon Park
- Metz Park
- Foss Field Park
- Banta Beatty Park
- Russell Stewart Park
- MSHCP Existing Noncontiguous Habitat Block A
- MSHCP Proposed Constrained Linkage 7
- MSHCP Proposed Constrained Linkage 8
- MSHCP Existing Core D
- MSHCP Proposed Noncontiguous Habitat Block 4
- Proposed Constrained Linkage 19
- Archaeological site CB-2 (site has been grouped under SJBL alignment so as not to disclose the actual location of this confidential resource)
- Archaeological site CA-RIV-805 (site has been grouped under SJBL alignment so as not to disclose the actual location of this confidential resource)
- Archaeological site CA-RIV-2384 (site has been grouped under SJBL alignment so as not to disclose the actual location of this confidential resource)
- Archaeological site CA-RIV-4497H / 3817H (site has been grouped under SJBL alignment so as not to disclose the actual location of this confidential resource)
- March Field Historic District
- Perris Depot
- Rock House
- Janie Kirkpatrick House

Rehabilitation or replacement of the existing track and ties along the SJBL alignment to achieve commuter rail track standards for operation of the PVL would not require the acquisition or temporary occupancy of land from any of the identified Section 4(f) resources. Therefore, neither a direct use nor a temporary use of a Section 4(f) resource would occur as a result of the PVL.

As described in Section 3.10.1 Regulatory Setting, a constructive use of a Section 4(f) resource occurs when the proximity of a project results in impacts (for example, noise and vibration, visual, access, and/or ecological impacts) so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Each Section 4(f) resource category is considered below for potential constructive use with respect to the SJBL alignment, and is shown in Table 3.10-3.

Table 3.10-~~2~~3
PVL Project Effects on 4(f) Resources

4(f) Resource	Project Effect
Public Parks and Recreation Areas	
Hunter Park	None
Box Springs Mountain Reserve	None
Highland Park	None
Mount Vernon Park	None
Islander Park	None
Quail Run Open Space	None
Sycamore Canyon Park	None
Metz Park	None
Foss Field Park	None
Banta Beatty Park	None
Russell Stewart Park	None
Wildlife or Waterfowl Refuges	None
Existing Noncontiguous Habitat Block A	None
Proposed Constrained Linkage 7	None
Proposed Constrained Linkage 8	None
Existing Core D	None
Proposed Noncontiguous Habitat Block 4	None
Proposed Constrained Linkage 19	None
Sycamore Canyon – March Air Force Base Core Reserve	None
Historic Sites	
March Field Historic District (within March Air Reserve Base)	None
Perris Depot (120 West 4th Street)	None
Rock House (246 Lomita Drive, Perris)	None
Janie Kirkpatrick House (504 South C Street, Perris)	None
CB-2	None
CA-RIV-805	None
CA-RIV-2384	None
CA-RIV-4497H / 3817H	None

Parks and Recreation Areas

Implementation of the PVL would occur, for the most part, along an existing rail corridor within a largely urban setting. Access to and from public parks and recreation areas would not be restricted by the proposed project. In fact, the PVL may contribute to a net benefit on access to public parks and recreation areas through localized circulation improvements (for example, grade crossing enhancements, traffic signal installation, and roadway restriping).

Most of the identified public parks and recreation areas are separated from the rail corridor by streets, parking lots, or buildings, which eliminate the potential for the parks to be impacted by operational noise from the PVL. There are four parks, however, which are immediately adjacent to the PVL ROW, including Highland Park, Islander Park, Box Springs Mountain Reserve, and Metz Park (refer to Figure 3.10-1). The noise and vibration study prepared for the PVL determined that none of the parks adjacent to the rail corridor would be impaired so as to preclude the use and enjoyment by area residents.~~, and therefore no constructive use of parks or recreation areas would occur as a result of the PVL.~~ It should be noted that all work identified near the four park areas will be contained within the existing railroad right-of-way with no property takes or easements (permanent or temporary). Therefore, no constructive use of parks or recreation areas would occur as a result of the PVL.

Wildlife Areas

As described in greater detail in Section 3.14 Biological Resources, the purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of key reserves for the protection of covered species. Although the SKR HCP was established in 1996 prior to the MSHCP, relevant terms of the SKR HCP were incorporated into the MSHCP to ensure the greatest conservation for the largest number of covered species. The core reserves established by the SKR HCP are managed as part of the MSHCP conservation area.

Because the MSHCP was developed in conjunction with the Riverside County General Plan and the Community and Environmental Transportation Acceptability Process (CETAP), the cores, habitat blocks, and linkages that have been set aside for assembly as conservation areas were developed in consideration of existing and future land uses, in particular, the region's transportation requirements. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban / Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA and RCHCA, implementation of the PVL along the existing SJBL alignment would not conflict with any of the conservation or habitat goals established by the SKR HCP or the MSHCP, impair the value of wildlife habitat, or cause an ecological intrusion into the existing and proposed conservation areas. Therefore, no direct or constructive use of a wildlife area would occur as a result of the PVL.

Historic Sites

The March Field Historic District is situated east of the proposed PVL corridor and is separated (physically and visually) from the existing railroad by I-215, and therefore the proposed project would not constitute a visual impairment to the historic district. The buildings comprising the historic district are already subject to auditory intrusions from traffic-related noise on I-215. The proposed PVL project would not cause additional changes that would adversely affect the qualities for which the district is listed on the NRHP, and therefore no constructive use of the property would occur.

The Rock House sits atop an elevated hill approximately 300 feet west of the existing SJBL alignment. The property would not be removed, altered, or physically damaged by the proposed PVL. Between the Rock House and the PVL corridor, there is an intervening open space, parking lot, and street, which are topographically lower and provide a visual buffer from the railroad tracks (MFA, 2003). The Rock House is already subject to local and regional auditory intrusions from D Street in Perris and from the I-215 corridor, respectively. As a result, any incremental increase in noise resulting from the operation of the PVL would not constitute a constructive use under Section 4(f).

The Janie Kirkpatrick House is located west of the proposed PVL corridor at the intersection of C and 4th Streets. The property would not be removed, altered, or physically damaged by the proposed PVL project. None of the elements proposed for the PVL project in the vicinity of the Janie Kirkpatrick House, which would be limited to track and tie replacement, would introduce a visual intrusion. Local noise levels are not expected to increase above existing conditions, which include vehicular traffic noise along C, D, and 4th Streets, and therefore no constructive use would occur.

As described above, Section 4(f) applies to archaeological sites that are listed on or determined eligible for listing on the NRHP. Because site CA-RIV-805 could not be avoided during project construction, limited testing was undertaken to determine the NRHP eligibility of the site. The results of the archaeological testing concluded that no intact buried deposits are present within the railroad ROW at site CA-RIV-805 and that the surface artifacts represent the only remnants of the site. Accordingly, the portion of the site within the ROW would not contribute to the NRHP eligibility of the site, if the site, in its entirety is found to be eligible for listing on the NRHP in the future.

Archaeological sites CB-2, CA-RIV-2384, and CA-RIV-4497H/3817H, if presumed to be eligible for listing on the NRHP for the purpose of Section 4(f) consideration, would be eligible under Criterion D (that is, for information potential). Section 4(f) does not apply to archaeological sites where the lead federal transportation agency has determined, through consultation with the SOHP, that the archaeological site is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place (23 CFR 774.13(1)). If eligible, each of the three archaeological sites would be valued chiefly for its respective potential to inform on prehistoric or historic use of the area, and therefore Section 4(f) would not apply to these resources. It should be noted that all three resources can be avoided during project construction through archaeological monitoring (refer to Section 3.7 Cultural Resources and Section 106 Compliance for a more detailed discussion).

Because the proposed PVL project would not introduce any substantial visual, noise, or vibration impacts, or conflict with existing access to any of the identified historic sites, no constructive use would occur as a result of the PVL. As summarized in Section 3.7 Cultural Resources and Section 106 Compliance, Section 106 consultation is complete.

Stations

Hunter Park Station

Hunter Park station ~~would~~ was considered to be located at one of the three proximate sites: Palmyrita Avenue Station, Columbia Avenue Station, and Marlborough Avenue Station. Hunter Park is located west of Iowa Avenue between Columbia and Marlborough Avenues, and in the vicinity of two of the three proposed Hunter Park Station options. The park is situated in an industrial area, and separated from the railroad and proposed stations by existing streets, parking lots, and buildings. Given the existing urban setting, Hunter Park would not be subject to any additional visual or auditory intrusions than what already exists in the park's vicinity. As a result, no constructive use would occur as a result of the PVL project. RCTC during the development of the Final SEA has selected the Marlborough site to be the Hunter Park Station.

Moreno Valley/March Field Station

Two noncontiguous wildlife reserves are in the vicinity of the proposed Moreno Valley/March Field Station. The SKR Sycamore Canyon – March Air Force Base Core Reserve (which coincides with Sycamore Canyon Park and the MSHCP Existing Core D) is located north and south of Alessandro Boulevard and west of the PVL corridor.

As described above, the purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of protected reserves for covered species. These planning efforts have been coordinated with municipal and transportation entities, and in consideration of existing and future land uses. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban / Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA and RCHCA, construction and operation of the proposed Moreno Valley/March Field Station would not impair the value of wildlife habitat or cause an ecological intrusion into the nearby reserve areas. As a result, no constructive use of a wildlife area would occur.

Downtown Perris Station

Construction of the proposed Downtown Perris Station would not require the direct use or temporary occupancy of the historic Perris Depot. Railroad facilities are an intrinsic element to the historic setting of the Perris Depot, and therefore the proposed PVL project, including the construction of the Downtown Perris Station, would not alter, impair, or diminish any of the qualities for which the historic depot is valued. Furthermore, the appurtenances proposed for the Downtown Perris Station, which include an at-grade platform and a track-side canopy structure, would not introduce a significant visual intrusion that would obstruct or eliminate architectural views of the depot. Access to the historic depot, which now houses the Perris Valley Historical and Museum Association, would remain unchanged.

The noise and vibration study prepared for the PVL project concluded that there would be no auditory or atmospheric impacts to the historic depot (or its immediate vicinity) which could detract from the significance of the historic site or affect the structural integrity of the depot.

Accordingly, no constructive use of the historic Perris Depot would occur as a result of the PVL project. As summarized in Section 3.7 Cultural Resources and Section 106 Compliance, Section 106 consultation is complete.

South Perris Station

MSHCP Proposed Constrained Linkage 19 encompasses the San Jacinto River area, which is located approximately 500 feet west of the proposed South Perris Station. As previously described, the PVL project is subject to the compliance requirements of the MSHCP, in particular its Urban / Wildlands Interface Guidelines, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA, construction and operation of the proposed South Perris Station would not impair the value of wildlife habitat or cause an ecological intrusion of MSHCP Proposed Constrained Linkage 19. As a result, no constructive use of a wildlife area would occur.

Layover Facility

No resources protected under Section 4(f) have been identified in the vicinity of the proposed Layover Facility, and therefore no Section 4(f) use would occur.

3.10.4 Mitigation Measures

As defined by Section 4(f), no direct, temporary, or constructive use would occur as a result of the PVL project, and therefore no mitigation measures are required.

3.11 ENVIRONMENTAL JUSTICE AND SOCIOECONOMICS

This section addresses issues of environmental justice in minority and low-income populations and evaluates the proposed PVL with respect to the 1994 Presidential Executive Order 12898.

3.11.1 Regulatory Setting

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs ~~that f~~Federal agencies to identify and address disproportionately high and adverse human health or environmental effects that their programs, policies, and activities may have on minority and low income populations. Following the direction of EO 12898, Federal agencies developed their own guidelines to implement Environmental Justice (EJ). USDOT Order 5610.2 defines the fundamental principles of EJ as follows:~~do not deny or exclude populations from benefits and that no discrimination occurs under such programs, policies, or activities because of a population's race or income status. The fundamental principles underlying Environmental Justice assessments are to:~~

- Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations;
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

USDOT Order 5610.2 requires the following:

- Consideration of mitigation and enhancement measures to benefit the affected minority and/or low-income population and all off-setting benefits to the affected populations, as well as design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas;
- Evaluation of whether alternatives or mitigation measures are practical; and
- Documentation of the findings, determination, and/or demonstration made in accordance to the Order in the environmental document prepared for the program, policy, or activity.

This analysis was developed in accordance with the USDOT *Order to Address Environmental Justice in Minority Populations and Low-Income Populations* (USDOT Order 5610.2), and the Council on Environmental Quality (CEQ) *Environmental Justice – Guidance Under the National Environmental Policy Act.*

Race and income are socioeconomic characteristics critical to the consideration of a project's impacts on minority and low income populations, referred to as "EJ populations." CEQ guidance defines a 'minority person' as any individual who is a member of any of the following populations groups: American Indian, Alaska Native, Asian, Pacific Islander, Black, or Hispanic. Low-income is defined as a person whose household income is at or below the U.S. Census Bureau's annual statistical poverty threshold, on which are based the U.S. Department of Health and Human Services poverty guidelines.

The methodology for analyzing the effects of the proposed project on EJ populations (any identifiable population group meeting the requirements for minority or low-income) consists of the following steps:

- Define the Project area boundary and identify census block groups in the study area;
- Determine thresholds for minority and low-income populations to identify potential locations of EJ populations based on thresholds and additional information;
- Analyze the location and severity of impacts associated with the project alternatives; and,
- Determine disproportionately high adverse impacts (if any).

~~The communities of particular concern to the assessment of Environmental Justice (EJ) are those identified as minority or low-income communities. These "EJ Communities" are defined in accordance with Executive Order 12898 as identifiable groups of people, typically living in geographic proximity; the low-income and minority populations are defined as follows:~~

~~**Low-income population:** A population having an annual income that is less than the poverty threshold. Poverty thresholds are established by the U.S. Census Bureau, based on the income relative to household size and ages of members.~~

~~**Minority population:** A population that is identified or recognized by the U.S. Census Bureau as African-American or Black, American Indian, Asian, Hispanic/Latino, or other (non-white) race.~~

3.11.2 Affected Environment

A disproportionately high and adverse effect on minority and low-income populations is defined as an effect that is predominately borne by, or would be suffered by an EJ population or that is appreciably more severe or greater in magnitude than adverse effects suffered by a non-EJ population. In general, the determination of disproportionately affected EJ populations is done by analyzing the pattern of overall environmental and human health impacts in relation to identified areas of EJ populations. Adverse effects are the totality of significant individual or cumulative human health or environmental effects.

Ultimately, EJ population impact determinations are made based on **effects**, not population size.[1] However, in order to ensure thorough EJ consideration throughout the review process, it is important to determine where identifiable EJ communities may be present within a geographic area potentially affected by the proposed project. Therefore, the project study area is delineated to provide full disclosure of information pertaining to all potentially affected populations, including EJ Communities, surrounding the SJBL alignment. The study area represents the physical range within which environmental effects of the PVL may be experienced by the resident population, whether adverse or beneficial. This study area determination is done early in the environmental review process so that public involvement with and participation by EJ communities can be established and maximized.

The study area comprises 28 whole census tracts adjacent to the San Jacinto Branch Line (SJBL) including Riverside County and the cities of Riverside, Moreno Valley, and Perris. The selected tracts intersect or are contiguous with the corridor,~~alignment and~~ the proposed stations and Layover Facility. ~~Additionally, the~~The study area includes each tract having at least 50 percent of its area located within one mile of the alignment. (Note that Tract 427.06 is also included because it is entirely surrounded by other tracts that meet the aforementioned criteria). See Figure 3.11-1.

As noted in the land use analysis (see Section 3.1 Land Use and Zoning), development is not evenly or homogenously distributed along the alignment, which runs through a mix of urban, semi-urban and rural residential areas, industrial parks, and agricultural areas. Likewise, population is not evenly dispersed throughout the region or, itself, homogenous or evenly mixed. Therefore, as delineated, this study area represents the various communities present along the corridor; it includes locations that could experience potentially adverse environmental effects, as well as portions of larger communities that would benefit from the PVL.

~~Data describing population characteristics, including data describing demographic and income characteristics, are available from the 2000 U.S. Census at the Block Group level.~~ A Block Group (BG) is a unit smaller than a tract, and it is the smallest geographic area for which the Census Bureau tabulates ~~EJ population~~minority and income data, thereby lending itself to determining the geographic distribution of EJ population groups as precisely as possible. ~~Because t~~These data are only available for the study area as products of the decennial Census. ~~the 2000 Census data are the most current and are, therefore, used in this analysis.~~

There are two versions of the Federal poverty measure: "poverty thresholds" prepared by the U.S. Census, and "poverty guidelines" prepared by the Department of Health and Human Services (HHS) which is based on the U.S. Census poverty thresholds. The HHS poverty guidelines provide weighted averages of income that vary according to family size, and are intended to serve administrative purposes, such as the determination of financial eligibility for certain federal programs. For example, HHS poverty guidelines indicate that a four-person

[1] FHWA Environmental Justice web site, "The Facts – Nondiscrimination: Title VI and Environmental Justice," http://www.fhwa.dot.gov/environmental/ejustice/facts/index.htm, retrieved February 13, 2012.

family in 2012 earning $23,050 or less would qualify for certain poverty-based programs. The U.S. Census poverty thresholds, in contrast, serve statistical purposes; all official poverty population figures are calculated using U.S. Census poverty thresholds, not HHS poverty guidelines.[2]

Therefore, all data describing population characteristics, including data describing demographic and income characteristics, are available from the 2000 U.S. Census at the Block Group level (current at the time of the analyses and public outreach activities).

In all, ~~79~~ 76 BGs represent the population of the study area. Portions of the cities of Riverside (~~45~~ 42 BGs), Moreno Valley (five BGs), and Perris (20 BGs) are included in the study area; these three cities would be served by the PVL. In addition, nine BGs of unincorporated Riverside County, which are proximate to the rail corridor, are also included in the study area.

As noted previously, the initial stages of an EJ evaluation focus on public outreach, and in particular, identifying "populations" that qualify as EJ populations. To this end, the geographic and statistical unit of measurement for a population is identified, which is the BG, as described above. The next step is to determine what proportion or percentage of any BG population in the project's area should be identified as minority or low income in order to qualify that BG as an EJ population. These proportions or percentages are known as "thresholds." Federal guidance on the determination of EJ thresholds is not prescriptive and allows for flexibility. A conservative and inclusive approach is generally applied, thus ensuring that all potentially qualifying EJ communities may be actively engaged during early stages of the public involvement process, well before impacts may be identified as a result of technical analyses. The thresholds for a low-income or minority community comprising an "identifiable" EJ population with regard to this project have been defined as follows~~may be defined such that any BG meeting or exceeding the following thresholds for a low-income or minority community, would be considered an EJ Community for that variable~~:

Low-income community: BGs considered to be low-income communities for the PVL project are those BGs for which the percentage of population living below poverty is equivalent to or greater than the percentage of population living below the poverty level for Riverside County as a whole. (The county is used as the benchmark or "reference" community, per FTA guidance.) The percentage of Riverside County population living below the poverty level was 14.17 percent, according to the 2000 U.S. Census; this percentage is calculated as the number of persons identified living in poverty (214,084 persons), per the total population "for whom poverty status was considered" (1,511,153 persons). (Please refer to Appendix C.) Therefore, BGs within the study area having 14.17 percent or more of their population living below poverty level according to the 2000 U.S. Census are considered low-income communities for this

[2] U.S. Department of Health and Human Services. "2012 HHS Poverty Guidelines: One Version of the [U.S.] Federal Poverty Measure." Available at HHS web site: http://aspe.hhs.gov/poverty/12poverty.shtml#guidelines, accessed February 17, 2012.

assessment.~~A census block group or contiguous area with multiple census block groups, having a low-income population equal to or greater 23.59 percent of the total population~~.

Minority community: BGs considered to be minority communities for the PVL project are those BGs for which the percentage of population that is minority is equivalent to or greater than the percentage of county population that is minority. (The county is used as the benchmark or "reference" community, per FTA guidance.) The percentage of Riverside County population that is minority according to 2000 U.S. Census data, was 49.05 percent; this percentage is calculated as the number of persons (758,069 persons) identified as minority (Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, Hispanic or Latino) by the U.S. Census in 2000, per the total population of the county in 2000 (1,545,387 persons). (Please refer to Appendix C.) Therefore, BGs within the study area having minority persons represent 49.05 percent or more of the total BG population are considered minority communities for this assessment.~~A census block group or contiguous area with multiple census block groups, having a minority population equal to or greater 51.1 percent~~.

Using these definitions, the majority of BGs in the study area qualify as EJ communities. Of the 76 BGs comprising the study area, eight BGs qualify as EJ Communities according to minority status alone, two qualify according to poverty status alone, and 55 of the 76 BGs qualify according to both low-income and minority status (using the 49.05 percent threshold). A total of 94,462 minority persons reside in the study area (approximately 67.3 percent of the total study area population), and there are 18,076 low-income households in the study area (approximately 41.9 percent of all households within the study area).

The following data comparisons help illustrate the project context:

  - Approximately 49.05 percent of county population is minority, and all three cities (Riverside, Moreno Valley, and Perris) have minority percentages greater than that of the county:

  - Approximately 66.0 percent of the study area population in the city of Riverside is minority population, compared to 54.5 percent for the city as a whole;

  - Approximately 69.0 percent of the study area population in the city of Moreno Valley is minority population, compared to 67.6 percent for the city as a whole; and

  - Approximately 71.2 percent of the study area population in the city of Perris is minority population, compared to 78.4 percent for the city as a whole.

- All three cities also have a larger percentage of low-income population than the county. Considering demographic profiles of those BGs included in the study area, low-income populations of the three cities are for the most part well represented in the study area:

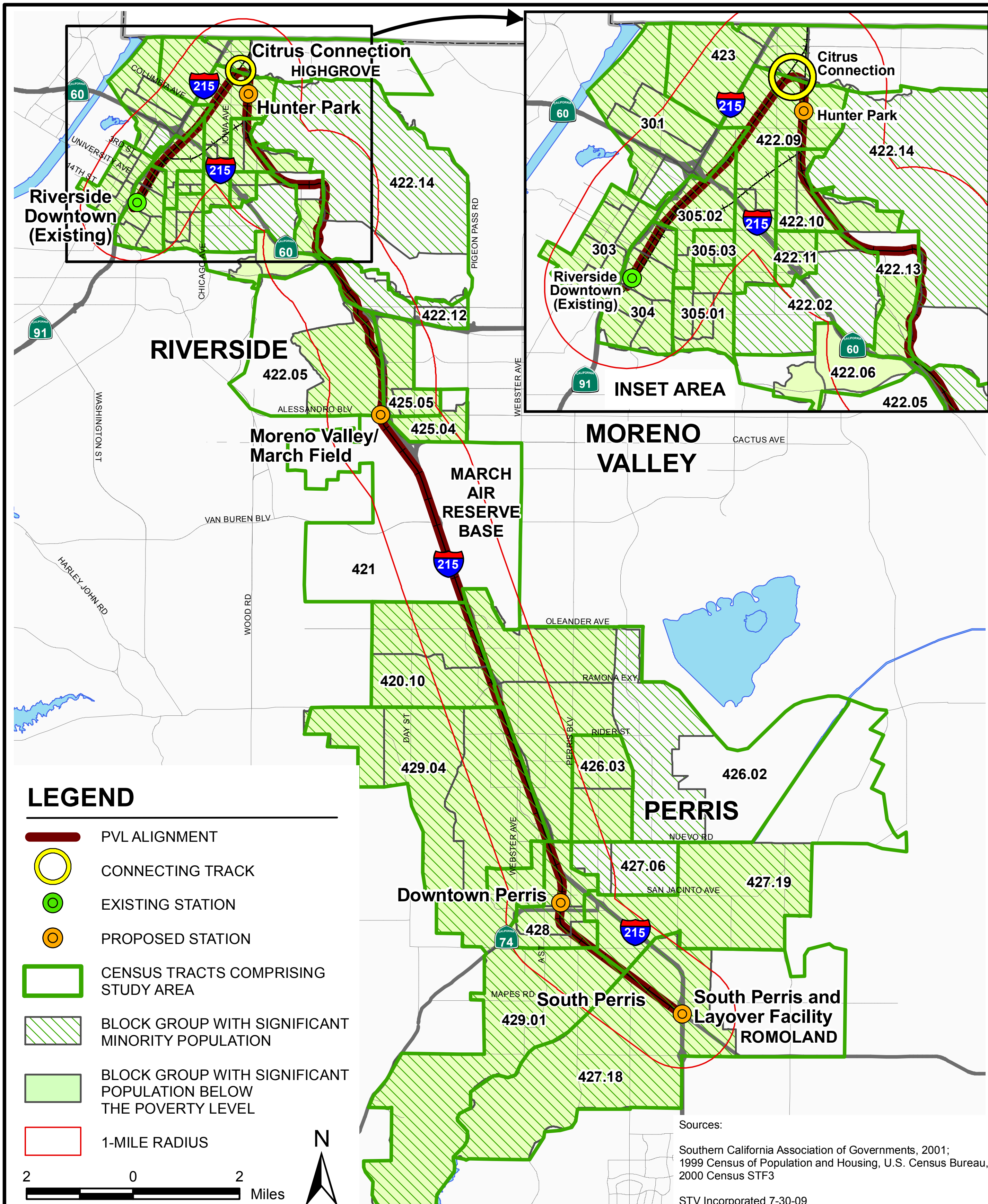
  - Approximately 27.3 percent of study area households in the Riverside City BGs are low-income, compared to 15.8 percent for the city as a whole;

- o Approximately 21.2 percent of study area households in the Moreno Valley BGs are low-income, compared to 14.2 percent for the city as a whole; and
- o Approximately 21.3 percent of study area households in the Perris BGs are low-income, compared to 20.4 percent for the city as a whole, though 17 of the 20 Perris BGs included in the study area qualify as EJ Communities.

As the majority of the study area comprises BGs qualifying as EJ Communities, the public outreach and community involvement meetings have been located in these communities throughout the AA, EA, and SEA processes. The public involvement program has been designed and executed to reach the affected population, the majority of whom qualify as EJ population. Meetings and hearings were held throughout the study area, within identified EJ communities and at locations accessible to all members of the public. Community meetings were held to engage the community in the AA process during the development of project alternatives, and to elicit comment from the public. The six public scoping meetings conducted throughout 2002 and 2003, were held in Moreno Valley, Riverside and Perris, at public venues accessible to minority and/or low-income members of the community. Public hearings and informational meetings were held in public venues, likewise accessible to minority and/or low-income members of the study area. Public meetings included means to ensure access for non-English speakers, with interpreters available and bilingual reading materials provided. In addition to locating its public outreach meetings and hearings within identified, EJ Communities, RCTC has reached out to the public via public meetings with bilingual project materials, newsletters, published notices, and a website dedicated to PVL. For more information regarding Public Outreach, see Chapter 5.0.

~~Approximately 49.1 percent of Riverside County's population in 2000 was minority and about 14.2 percent of Riverside County's households were low-income. The study area represents a concentration of EJ population compared to the county as a whole, which has lower percentages of minority population and low-income households overall (see Figure 3.11-1 and Appendix C).~~

~~Of the 76 BGs comprising the study area, 22 BGs qualify as EJ Communities according to minority status alone, two qualify according to poverty status alone, and 39 of the 76 BGs qualify according to both minority and low-income status. A total of 85,853 minority persons reside in the study area (approximately 61.2 percent of the total study area population), and there are 7,026 low-income households in the study area (approximately 16.3 percent of all households within the study area).~~



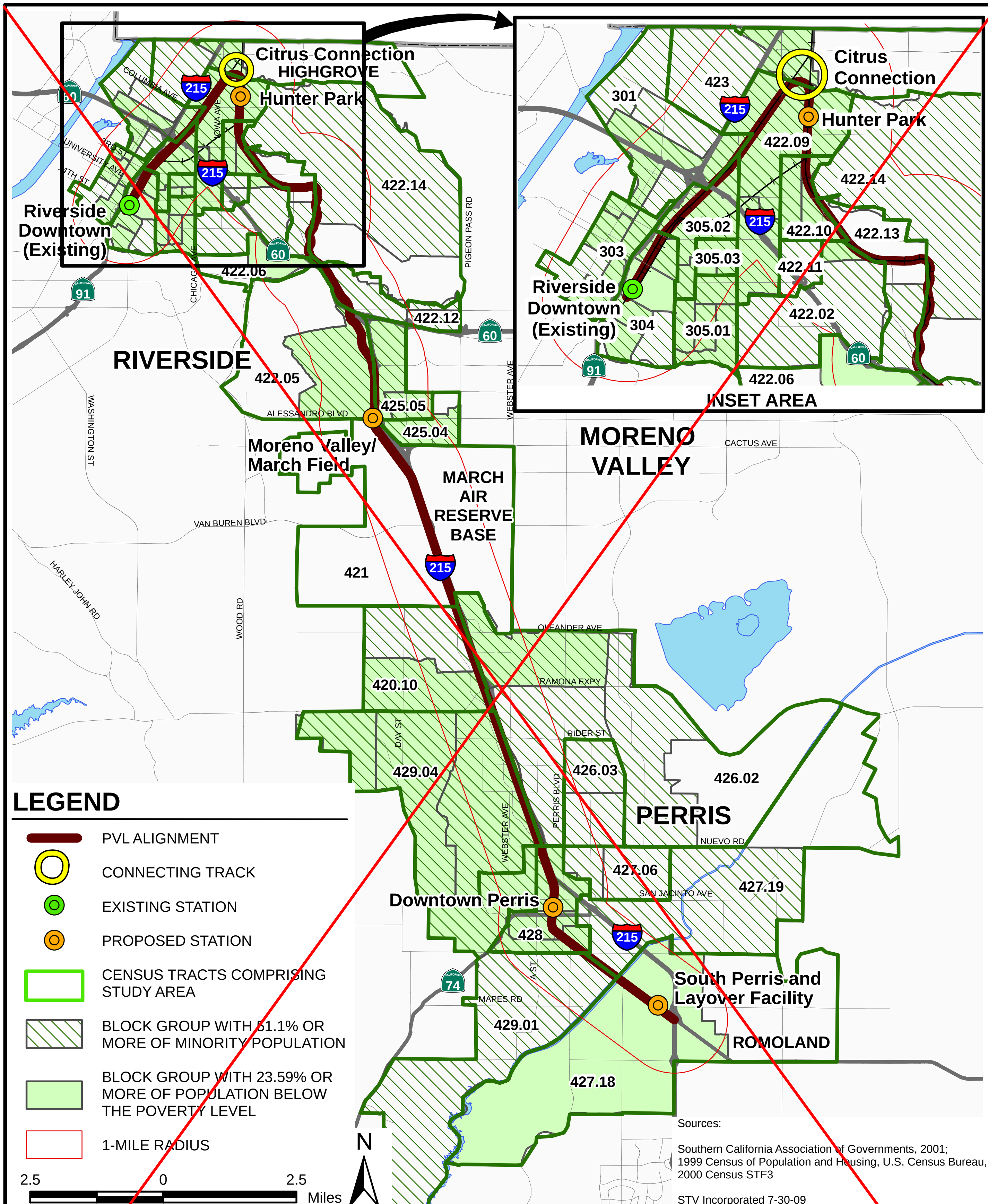
Perris Valley Line — RCTC — KLEINFELDER Bright People. Right Solutions.

PROJECT NO.	92666
DRAWN:	2/17/12
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666EJ.MXD

ENVIRONMENTAL JUSTICE COMMUNITIES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE **3.11-1**



PROJECT NO.	92666	
DRAWN:	1/5/10	
DRAWN BY:	JP	
CHECKED BY:	RM	
FILE NAME:	92666EJ.MXD	

ENVIRONMENTAL JUSTICE COMMUNITIES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.11-1

- ~~Approximately 49.1 percent of county population is minority, and all three cities (Riverside, Moreno Valley, and Perris) have minority percentages greater than that of the county. Considering demographic profiles of those BGs included in the study area, minority populations of the three cities are respectively represented in the study area;~~

- ~~Approximately 66.0 percent of the study area population in the city of Riverside is minority population, compared to 54.5 percent for city as whole;~~

- ~~Approximately 69.0 percent of the study area population in the city of Moreno Valley is minority population, compared to 67.6 percent for city as whole; and~~

- ~~Approximately 71.2 percent of the study area population in the city of Perris is minority population, compared to 78.4 percent for city as whole.~~

~~All three cities have a larger percentage of low-income population than the county. Considering demographic profiles of those BGs included in the study area, low-income populations of the three cities are for the most part well represented in the study area:~~

- ~~Approximately 23 percent of study area households in the Riverside City BGs are low-income, compared to 15.8 percent for city as whole; and~~

- ~~Approximately 17 percent of study area households in Moreno Valley BGs are low-income, compared to 14.2 percent for city as whole.~~

- ~~Approximately ten percent of study area households in the Perris BGs are low-income, compared to 20.4 percent for the city as a whole, though 17 of the 20 Perris BGs included in the study area qualify as EJ Communities.~~

~~As the majority of the study area comprises BGs qualifying as EJ Communities, the public outreach and community involvement meetings have been located in these communities throughout the AA, EA, and SEA processes. The public involvement program has been undertaken to reach the affected population, the majority of whom qualify as EJ population. Community meetings have been held to engage the community in the AA process to develop the LPA (the PVL), and to elicit comment from the public. RCTC has reached out to the public via public meetings with bilingual project materials, newsletters, published notices, and a website dedicated to PVL. For more information regarding Public Outreach see Chapter 5.0.~~

Based on community input received as part of the EA process, critical and sensitive components of the communities and neighborhood environs were identified throughout the corridor to ensure potential effects would be appropriately assessed. Field survey data collected for the analyses of land use, traffic, air quality, noise, etc., also informed the EJ assessment. Data were collected in the field to identify sensitive receptors for air and noise monitoring, for which three separate noise data collection programs were conducted in 2002, 2005, and 2008/2009. As described in Section 2.0 Project Alternatives, the former UP RIL LPA was replaced by the current LPA in order, in part, to avoid potential impacts to an EJ Community in Riverside.

3.11.3 Environmental Consequences/Impacts

For the purposes of EJ assessment, the potential environmental consequences of the PVL are considered in order to determine whether there would be disproportionately high and adverse effects on EJ Communities; specifically, whether there would be an adverse effect predominantly borne by or suffered by an EJ Community in a more severe fashion or greater magnitude than the adverse effect would be suffered by the non-EJ population.

Preliminary engineering has informed the SEA process sufficiently to determine that there would be no disproportionately high or adverse effects on EJ Communities, as all impacts would be avoided or mitigated. Certain impacts, which have been predicted in SEA analyses would be fully mitigated through such measures as the erection of noise barriers to protect sensitive receptors from unwanted noise created by the PVL; and the expected provision of signals and the adjustment of signal timing, or lane re-striping, to address predicted traffic impacts. Significant adverse air quality impacts would not occur, and there would be a net benefit to regional air quality through the reduction of greenhouse gases.

Positive environmental consequences, that is, those project-induced effects benefiting an EJ Community are also considered in an EJ analysis. RCTC would install new crossing controls to improve safety, and new traffic signals that would be necessary even without the PVL to improve traffic flow and reduce idle time. Further, ~~The~~ the most significant positive impact from the PVL would be the provision of access to a new mode of transportation. Although some land acquisitions are anticipated to be necessary for station construction, as described in Chapter 1.0 (please refer to Section 1.8, Acquisitions and Relocations), no acquisition associated with PVL would require displacement of any population, including qualifying EJ population.~~. RCTC would install new crossing controls to improve safety, and new traffic signals that would be necessary even without the PVL to improve traffic flow and reduce idle time.~~

It is the intent of the project to provide improved public transportation services to the region. ~~With each of the four stations located directly within an EJ Community and proximate to others, t~~The PVL would be accessible to the EJ Communities and jurisdictions it is intended to serve, including the cities of Riverside, Moreno Valley, and Perris. The PVL would therefore be of potential indirect socioeconomic value to the EJ Communities it serves, providing improved access and mobility within the region. Not only would the EJ Communities comprising and represented by the study area not be burdened by adverse effects, these communities would benefit from improved access to jobs, housing, schools, and other community services available within the Riverside County and region as a whole.

The PVL would accommodate a portion of existing transportation demand in Riverside County but would not directly induce population growth or significantly alter demographic trends; therefore, the PVL would not ~~directly or indirectly~~ lead to changes in demographic conditions, including the makeup of EJ Communities in the study area. By providing commuter rail service to the study area and the region generally, the PVL would satisfy community plans and policies that ~~anticipate~~ support the PVL (see Section 3.1 Land Use and Zoning). Communities that would be served by the PVL have indicated their support for the project through inclusion of the PVL in their county and city land use plans and discussion of the project's consistency with county, city and specific plan policies.

No direct economic losses or significant adverse effects would result from the project, as it would not require acquisition, relocation or construction of residences or businesses. The PVL itself would not generate significant numbers of new jobs, though the operation of the PVL may entail some increase in personnel or reallocation of human resources by SCRRA/Metrolink to maintain the trains, stations and Layover Facility. Through the provision of a new transportation service, in conformity with county, city, and specific area plans, the PVL may enable new economic development planning in the region following the start-up of service.

Construction Impacts

As described throughout this SEA, effects related to construction activities would be temporary and limited. For any ground-disturbing activities along the SJBL ROW, station sites, and Temporary Construction Easements (TCEs), RCTC would establish Best Management Practices (BMPs) to control fugitive dust, erosion and sedimentation related to construction, and provide for appropriate restoration after construction. The BMPs would be incorporated into construction documents. Therefore, no significant adverse effects to EJ Communities would result.

Construction activities, during a period of approximately 18 months, would generate a stimulus for the local economy due to construction-period expenditures for equipment, materials, supplies, and employment of workers by contractors. Indirect economic benefits would also occur due to the multiplier effect as construction-generated revenues would be re-spent by suppliers and workers.

3.11.4 Summary

It should be noted that the EJ analyses prepared for this SEA, beginning with the outreach efforts conducted prior to the SEA, relied on 2000 Census data, which were current and appropriate for designing public outreach efforts and completing the EJ assessment. These data allowed for the conservative identification of numerous EJ communities located throughout the study area, as described in this section and illustrated on Figure 3.11-1. The identification of these communities thus ensured that thorough and effective community outreach was undertaken at key locations in identified EJ communities throughout the study area throughout the planning and review process. Although 2010 Census data were released prior to the publication of this SEA document, these data were not available for outreach efforts; as such, the outreach was conducted using the most appropriate Census data (2000). Moreover, any changes to calculations of population percentages related to low income or minority characteristics using 2010 Census data versus 2000 Census data would not affect the EJ determinations reached herein. The determination of no disproportionate adverse effect to EJ population is supported by technical analyses that remain entirely unaffected by 2010 Census data, and these technical analyses have determined that no unmitigated significant adverse effect would be borne by any population, including EJ communities. Consequently, there is no purpose in reconsidering population characteristics in light of 2010 Census data availability.

Moreover, any changes to calculations of population percentages related to low income or minority characteristics using 2010 Census data versus 2000 Census data would not affect the EJ determinations reached herein. The determination of no disproportionate adverse effect to EJ population is supported by technical analyses that remain entirely unaffected by 2010

Census data, and these technical analyses have determined that no unmitigated significant adverse effect would be borne by any population, including EJ communities. Consequently, there is no purpose in reconsidering population characteristics in light of 2010 Census data availability.

In summary, the full and fair participation of all potentially affected communities was facilitated by the EJ assessment and public outreach processes. The PVL would result in no denial of, reduction in, or significant delay in the receipt of benefits to EJ communities, and the PVL would result in no disproportionately high or adverse human health or environmental effects being borne by EJ communities with the recommended noise and vibration and traffic mitigation measures in place (refer to Table ES.2-1 in the Executive Summary). Therefore, no further analysis is required for environmental justice and no additional mitigation would be required to satisfy Executive Order 12898.

~~3.11.4~~3.11.5 Mitigation Measures

With prescribed mitigation measures in place to address potential adverse effects related to noise, vibration and traffic, EJ communities would not be burdened with any significant adverse effects associated with the PVL. These mitigation measures include the:

- Construction of 13 noise barriers and provision of sound insulation at eight properties, as detailed in Section~~s~~ 3.4.4 Noise Mitigation Measures;
- Use of ballast mats and resiliently supported ties (under-tie pads) in the UCR area of Riverside, as detailed in Section 3.4.8, Vibration Mitigation Measures; and
- Changes to traffic signal timing, installation of a new traffic signal, and development of a traffic management plan, as detailed in Section 3.5.4, Traffic and Parking Mitigation Measures.~~, respectively, EJ Communities would not be burdened with any significant adverse effects associated with the PVL~~

With these mitigation measures in place, no significant adverse effects would occur with the PVL, and therefore no EJ population would be disproportionately burdened with any adverse effect as a result of the PVL.~~No further analysis is required for environmental justice and no mitigation would be required to satisfy Executive Order 12898.~~

3.12 SAFETY AND SECURITY

This section presents a discussion of safety and security issues as they pertain to the construction, operation and maintenance of the PVL, and in particular the relationship of the PVL to hazards that may already be present in the environs.

Federal Policies and Regulations

3.12.1 Regulatory Setting

There are various federal orders, final rules, notices, FRA regulations, and legislation concerning rail safety (FRA, 2009). These orders, rules, and regulations address passenger train emergency preparedness, equipment safety, upgraded technology, inspection, testing, and maintenance. The main areas of concern are passenger safety and the safety of those located near the railroad ROW. Additionally, access to the rail ROW is controlled by BNSF and access is only allowed by properly trained individuals who have the appropriate permissions. Several of the key overall safety policies are discussed below:

Federal Railroad Administration Final Rules

In 1998, the FRA issued the “Passenger Train Emergency Preparedness Standards” Final Rule to ensure that passenger railroads engage in advanced planning for emergencies. The rule requires the preparation, adoption, and implementation of emergency preparedness plans. The FRA’s comprehensive “Passenger Equipment Safety Standards” Final Rule, issued in 2006, includes requirements for equipment crashworthiness, and inspection, testing, and maintenance of passenger rail cars.

Positive Train Control

Section 104 of the Rail Safety Improvement Act of 2008 sets a deadline of 2015 for implementation of Positive Train Control (PTC) technology across most of the U.S. rail network. PTC refers to a developing technology intended to prevent train-to-train collisions, over-speed derailments, and casualties or injuries to roadway workers (e.g., maintenance workers, bridge workers, signal maintainers). Generally, a typical PTC system would involve a Collision Avoidance System using GPS equipment on the locomotive, data radio at the control center, and a bi-directional wireless data link between the train and the control center. Warnings and overrides would be made if the train measures exceed parameters, or a potential danger of collision is identified. Currently, there is only one FRA-approved PTC system in use. There are eleven other PTC projects in varying stages of development and implementation involving nine different railroads in 16 different states. These pilot projects are allowing railroads to continue to advance the various technologies used to implement PTC systems. SCRAA/Metrolink has completed conceptual planning for PTC implementation and recently selected a vendor to complete design and then install PTC throughout the Metrolink rail network. The PVL project will utilize the same PTC system as the rest of the Metrolink rail network.

State Policies and Regulations

State Safety Oversight Program

Under FTA Regulations (49 CFR Part 659.15), the SSO Programs manages the safety and security of rail transit for each respective state. The SSO agencies are responsible for establishing standards for rail safety, establishing security practices and procedures, and ensuring compliance by rail transit agencies. In April 2005, the FTA published its revised “Rail Fixed Guideway Systems: State Safety Oversight” Final Rule (49 CFR Part 659), which directs each SSO agency to conduct an on-site review at least once every three years to assess the implementation of the rail transit agency’s System Safety Program Plan (SSPP).

California Public Utilities Commission

The CPUC is the SSO agency for California. The CPUC's Rail Transit Safety Section is responsible for ensuring that transit agencies follow the federal system safety programs. CPUC GO 164-D, “Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems” includes requirements for SSPP, system security plans, internal safety and security audits, corrective action plans, grade crossings, and safety certification (CPUC, 2007). CPUC staff review the design of new systems/extensions, inspect construction, work with transit agencies to mitigate safety hazards, and oversee operational safety (CPUC, 2009).

3.12.2 Affected Environment

Portions of the SJBL alignment are within the boundaries of the city of Riverside, the city of Perris and unincorporated portions of the county of Riverside. The city of Riverside zoned areas near the corridor principally for business parks and industrial land uses; however, residential areas exist adjacent to this corridor. The corridor generally extends southward through business parks, urbanized areas (largely residential and educational), and open space.

Grade Crossings

Within all the local jurisdictions there are locations where the roadways cross over the existing railroad ROW. These locations are known as grade crossings. In high traffic areas, a grade crossing normally uses a traffic control device such as a stop sign, traffic light, signal or combination of these devices. There are several existing grade crossings along the SJBL as shown in Table 3.12-1. Many of the existing grade crossings along the SJBL consist of passive crossing warning systems, such as a crossbuck sign (a railroad sign that identifies and grade crossing and serves as a yield sign), which are not train activated.

Mini-High Platform

In order to provide for level boarding of the train through the use of a bridge plate, a mini-high platform is required. An example of a “mini-high” platform is shown on Figure 3.13-1. The mini-high platform is 1’-1” above the general platform level and is set back 7’-11” from the centerline of track.

Riders with mobility limitations are accommodated starting with the cab car on each train. If the wheelchair or other ADA features of the cab car become fully occupied, then the train crew will begin filling those spaces on the cars behind the cab car as needed to accommodate all riders with mobility limitations. Mini-high platforms provide full ADA accessibility and therefore no impact to the PVL project related to train access.

In the rare instance of a train needing to reverse at a station to allow ADA access, there is sufficient distance between the platform and the nearest grade crossing to not block roadway traffic. In addition, this procedure will not cause any additional concern regarding safety at the platform or immediate areas.

Freight Usage

Existing conditions within the SJBL alignment include established freight lines that were constructed in the 19th century, currently used for local freight deliveries. BNSF currently provides limited freight service along the existing BNSF rail corridor, as well as the SJBL rail corridor (under agreement with RCTC).

Pipelines

Pipelines currently operate within this rail corridor. The pipelines were installed in accordance with the safety requirements of the owners. The pipelines are buried at a minimum of three feet below ground surface, or deeper if they are closer than 40 feet to the rail line, and/or are encased.

Table 3.12-1
Existing Grade Crossings
Perris Valley Line Corridor, Riverside County, California

Location	Existing Device Type
Crossbuck Signs	
Citrus Street, Riverside County and City of Riverside border, Mile Post (MP) 0.57	Two standard reflective signs
Gernert/Poarch Road, Riverside County, MP 5.02	Warning sign
San Jacinto Avenue, City of Perris, MP 18.05	One standard crossbuck sign
West 5th Street, City of Perris, MP 18.95	One standard crossbuck sign
West 6th Street, City of Perris, MP19.03	One standard crossbuck sign
West 7th Street, City of Perris, MP 19.10	One standard crossbuck sign
South D Street., City of Perris, MP 19.17	One standard crossbuck sign
South Perris Street, City of Perris, MP 19.37	One standard crossbuck sign
G Street, City of Perris, MP 19.68	One standard crossbuck sign
East Ellis Avenue, City of Perris, MP 19.87	One standard crossbuck sign
Warning Lights/Bell	
Spruce Street, City of Riverside, MP 2.02	Two No. 8 flashers
~~*Mapes Road, City of Perris, MP 21.59*~~	~~*Two flashing warning signs*~~
Gates	
Palmyrita Avenue, City of Riverside, MP 1.00	Two standard No. 9 gates with flashing lights
Columbia Avenue, City of Riverside, MP 1.24	New standard No. 9 crossing gates for the existing tracks
Marlborough Avenue, City of Riverside, MP 1.50	BNSF installed two new standard No. 9 gates with flashing lights
West Blaine and Watkins Drive, City of Riverside, MP 2.66	Standard No. 9 gate with flashing lights

Table 3.12.-1 (continued)
Existing Grade Crossings
Perris Valley Line Corridor, Riverside County, California

Location	Existing Device Type
Mt. Vernon Avenue, City of Riverside, MP 3.41	Four standard No. 9 gates with flashing lights
Box Springs-Rivercrest Drive, City of Riverside, MP 7.00	Standard No. 9 gates with flashing lights
West 4th Street, City of Perris, MP 18.34	Two standard No. 9A gates with flashing lights

Hazardous material pipelines within the PVL corridor include a 6-inch diameter jet fuel transmission pipeline operated by Kinder Morgan and a natural gas transmission pipeline operated by Southern California Gas Company (PIMMA, 2007). The jet fuel pipeline extends from the Colton Terminal (2359 South Riverside Avenue) to the March AFB (Cactus Avenue). Additional segments of the Kinder Morgan pipeline are located within the SJBL ROW from Service Road southward to Watkins Drive, and then reconnecting near Box Springs Boulevard to Cactus Avenue.

Two additional natural gas transmission pipelines operated by Southern California Gas Company intersect the PVL corridor: one pipeline extends east-west at Cottonwood Avenue, and one pipeline extends east-west just south of Alessandro Boulevard.

Maintenance

Currently, maintenance of the SJBL ROW is the responsibility of BNSF under agreement with RCTC.

3.12.3 Environmental Consequences/Impacts

Potential hazards involved with rail travel include collision, derailment, and fire. As mentioned above, the FRA has regulations and supports industry standards for the safety of passenger rail, including equipment standards, crashworthiness, fire safety, and emergency preparedness. Applicable federal and state safety policies would be incorporated into project equipment design, construction, operational controls, and infrastructure and in addition, the SCRRA/Metrolink has internal procedures and initiatives to further enhance operational safety. The initiatives and safety measures, which would be incorporated into the proposed project, are described in this section.

SCRRA/Metrolink rail equipment used on this project would incorporate federal and state standards regarding fire resistant materials, electrical systems, and emergency preparedness. Any rail vehicles that would be operated on the PVL corridor would fall under FTA, FRA, and *Manual of Standards and Recommended Practices, Section A, Part III: Passenger Car Requirements* (*Association of American Railroads',* 1984), which includes standards and recommended practices for construction of railcars and equipment, electrical standards, inspection and maintenance, mechanical systems, and passenger systems.

Operational controls are integrated into the Metrolink operating plans and design, in accordance with the SCRRA/Metrolink's SSPP. Train speed and operating rules would be prescribed along the entire PVL alignment intended to avoid potential derailment.

Positive Train Control

Operational safety is a major concern of RCTC and SCRRA, and safety is designed into the PVL and all rail projects starting with FRA track safety standards. SCRRA has assured safety through the design of its locomotives, which are outfitted with light sources at the lower half of the train to illuminate the track for the safety of the train and surrounding areas. At the national level, FRA is developing the standards for implementation of Positive Train Control (PTC) for passenger rail operators. PTC refers to technology that is capable of preventing train-to-train collisions, over-speed derailments, and casualties or injuries to roadway workers (e.g., maintenance workers, bridge workers, signal maintainers, contractors) operating within their limits of authority. PTC systems vary widely in complexity and sophistication based on the level of automation and functionality they implement, the system architecture utilized, and the degree of train control they are capable of assuming. Current PTC system designs act as a safety overlay of existing train control systems. PTC has been mandated nationally, and the SCRRA/Metrolink fleet will be compliant once SCRRA has finalized the design and implementation of the system. Space provisions have been incorporated into the signal equipment and enclosures to accommodate the PTC upgrade when the SCRRA's program is finalized, with the intent that PTC will be functional at the opening of service on the PVL.

In southern California, installation of PTC is the agency's highest safety priority project. As a result, SCRRA is developing an accelerated strategy with a goal to have PTC operational on all Metrolink rolling stock by 2012, in conjunction with the BNSF and Union Pacific (UP) freight railroads aim to complete the implementation of wayside PTC along their ROW in the Los Angeles basin by 2012. SCRRA's objective is to have the full PTC system in place in advance of the 2015 federal mandate (Solow, 2009).

Grade Crossings

Appropriate grade crossing modifications are required by CPUC to ensure public safety and to facilitate safe train movements. As part of the proposed project, two grade crossings would be closed and 15 grade crossings would be improved. The closings are at Poarch Road (MP 5.02) in the ~~c~~City of Riverside and at ~~West~~ 6th Street (MP 19.03) in the ~~c~~City of Perris. In its current configuration, the Poarch Road grade crossing does not meet applicable design and safety standards. As part of the PVL project, the existing grade crossing at Poarch Road is planned to be closed to the public with access by emergency vehicles only (with a locked gate). In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. Although this closure would affect few vehicles, 9th Street, which is currently a dirt road, would be paved to accommodate local property access.

The proposed improvements at the grade crossings would include flashing warning devices and gates, bells, raised center medians, striping, signage and pavement markings, crossing safety lighting, and pedestrian safety improvements. The locations of these grade crossings to be improved or closed are shown on Figure 1.7-20.

Proposed improvements would reduce the potential for pedestrian and motor vehicle conflict at these grade crossings. The exact warning device configuration is to be determined by a diagnostic team consisting of the CPUC, SCRRA, and BNSF representatives. To date, four field diagnostic meetings have been held to review grade crossings for the PVL with members from the CPUC, SCRRA, BNSF, RCTC, county of Riverside, city of Riverside, and city of Perris and a list of the proposed modifications, which includes improved crossings and warning devices, is provided in Appendix D.

Station areas are designed to direct pedestrian foot traffic across the railroad tracks toward designated crossings. Signs will be posted warning of the danger of crossing active railroad tracks. As necessary, pedestrian crossings would also include safety devices such as bells, flashing lights, and/or gates. The Layover Facility would have controlled access through the use of fencing, K-rail, and gated entrances.

Communication Systems

With the proposed project, rubberized or asphalt crossings would be replaced with concrete panel crossings. The work would also include new or upgraded grade crossing warning devices and new pedestrian crossing warning devices; signal system upgrades; and replacement of control cables, housings, and equipment. The electronics at all crossings would be upgraded with crossing predictors to sense the speed and presence of trains. The crossing predictors would enable the crossing gates to lower and rise in equal time durations regardless of the speed of approaching trains. Overlay circuits would be installed at each crossing to detect trains while they are still at least one crossing away.

Freight Usage

According to the findings of a freight usage study, it is unlikely that the improvements would benefit shippers in any material way. No shippers indicated that the improvements would result in an increase of their rail shipments. Track improvements and other upgrades proposed as part of the PVL are aimed at improving operations and safety to accommodate commuter rail service. These improvements would provide safety benefits that accrue to both commuter and freight operations (for example, grade and pedestrian crossing improvements and improved communications).

Pipelines

The PVL service would not involve the routine transport or disposal of hazardous materials. Hazardous materials and emergency response plans are discussed in Section 3.8 Hazards and Hazardous Materials. Air quality impacts, including air toxics, are discussed in Section 3.3 Air Quality.

Track Improvement and Maintenance

Under the proposed action, the PVL track would be upgraded to SCRRA/Metrolink safety standards as dictated by industry maintenance practices and design criteria. To be specific, the existing BNSF and SJBL track would be rehabilitated (e.g., new or upgraded ties, crossings, grade crossing warning devices, signal system, control cables, housings, and equipment). All rehabilitation work is required to meet commuter rail standards.

RCTC anticipates that the operating agreement with SCRRA/Metrolink would transfer the maintenance for the ROW from BNSF to SCRRA/Metrolink. The tracks would be routinely inspected and maintained. RCTC provides funds to SCRRA/Metrolink to conduct maintenance, and the SCRRA/Metrolink would regularly inspect the track to quality assure that the track is well-maintained and that the tracks are suitable for passenger service. In addition, SCRRA/Metrolink designed its locomotives with light sources at the lower half of the train to illuminate the track for the safety of the train and surrounding areas.

Construction

The work would be performed in a manner that allows freight deliveries to continue while the PVL improvements are being undertaken. Freight delivery schedules would be adjusted to accommodate the work, balancing the need to support business activity of the freight shippers/receivers with the need to remove old track and install new track. Some construction work may be performed at night or on weekends and some train operations may shift to nights or weekends to accomplish the project schedule. In the event that nighttime and weekend work are determined necessary, coordination with the affected local jurisdictions would be undertaken.

Federal regulations (and traditional safety practice) require that train operations and workers on or near the tracks be protected from each other. This separation is performed by flagmen who assure that workers near the track are safe from oncoming trains, direct the workers to retreat to a place of safety when trains pass, and assure that the tracks are safe for train operation before permitting trains to pass.

Operations

Operation of the trains on the PVL route would be the responsibility of SCRRA/Metrolink under agreement with RCTC.

Hazardous materials may be used or stored at the proposed South Perris Station and Layover Facility. The release of hazardous materials into the environment may pose a public safety concern depending on the nature of release. As further discussed in Section 3.8 Hazards and Hazardous Materials, proposed construction activities and operations would involve the use of small quantities of hazardous materials. Hazardous materials would be stored, used, and disposed of in accordance with existing hazardous materials regulations.

Security

The proposed project includes new train service and new related stations. Security on the trains themselves is the responsibility of SCRRA/Metrolink and would be conducted according to standard SCRRA/Metrolink security protocols. Security at the station locations is the responsibility of RCTC and security guards would be posted as directed by RCTC personnel to ensure the safety of train riders while at the stations.

Fifteen schools are located within 0.25 mile of the SJBL ROW. For most PVL operations, schools would not be in session because most scheduled runs occur either before the start of the school day or after its completion. SCRRA/Metrolink has developed a Safety Education Program as a service to schools and communities along Metrolink lines. This Safety Education

Program incorporates Operation Lifesaver, which is a non-profit international public education program established in 1972 to end collisions, deaths, and injuries at highway-rail grade crossings and on railroad ROWs. The program addresses rail safety and teaches students, at age-appropriate levels, to understand rail signage, the importance of avoiding the railroad ROW, and safe driving skills in the vicinity of railroads. Operation Lifesaver provides free presentations to schools and community groups. SCRRA/Metrolink with RCTC encourages school and community group participation in Operation Lifesaver. Mitigation Measures

3.12.4 Mitigation Measures

The proposed project is designed to comply with federal, state requirements related to rail construction, operation and maintenance. These requirements meet the current industry safety standards and therefore no mitigation is necessary for project related impacts.

3.13 AMERICANS WITH DISABILITIES ACT COMPLIANCE

The proposed PVL project would include four stations and associated facilities, including station areas and a Layover Facility. These proposed facilities would be fully compliant in accordance with the ADA of 1990 and the Architectural Barriers Act of 1968 (ABA); design standards from the SCRRA Design Criteria Manual and the RCTC Commuter Rail and Multimodal Facility Design Criteria Manual; and the accessibility provisions of the 2007 California Building Code (CBC), as described below.

The advent of the ADA legislation has required the SCRRA/Metrolink to focus on issues of access in the planning of facilities. The ADA, under Title II-Public Services (Title II), requires public transportation systems to not discriminate against persons with disabilities. The resulting design changes inspired by compliance with the ADA have increased the general accessibility of transit structures to a broad range of the traveling public. The ADA also includes accessibility guidelines (ADAAG) for the design of transportation facilities so that they are usable by people with disabilities. The guidelines cite the need for accessible routes to and from accessible entrances to stations and boarding platforms used by the public. All facilities associated with the PVL project would comply with the ADA.

3.13.1 Regulatory Setting

<u>Americans with Disabilities Act of 1990</u>

The ADA prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications (U.S. Department of Justice, 2005). The ADA recognizes and protects the civil rights of people with disabilities and is modeled after earlier landmark laws prohibiting discrimination on the basis of race and gender. To ensure that buildings and facilities are accessible to and usable by people with disabilities, the ADA establishes accessibility requirements for state and local government facilities under Title II. The transportation provisions of Title II cover public transportation services, such as city buses and public rail transit (e.g. commuter rail). Public transportation authorities may not discriminate against people with disabilities in the provision of their services (U.S. Department of Justice, 2005). The ADA applies to facilities in the private sector (places of public accommodation and commercial facilities) and to state and local government facilities. Transportation facilities are subject to standards maintained by the United States Department of Transportation (USDOT).

On July 26, 1991, one year after the ADA was signed into law, the ADAAG were published. The ADAAG are regulations governing accessibility to places of public accommodation and commercial facilities. Additional requirements specific to transportation facilities were added on September 6, 1991. USDOT incorporated ADAAG into their ADA implementing regulations, thus making ADAAG the enforceable standard under Title II of the ADA. USDOT has adopted new ADA standards which apply to bus stops, rail stations, airports, and other transportation facilities. These standards apply to the construction and alteration of transportation facilities covered by the ADA. They became effective November 29, 2006.

Architectural Barriers Act of 1968

The ABA requires that buildings and facilities that are designed, constructed, or altered with federal funds, or leased by a federal agency, comply with federal standards for physical accessibility. ABA requirements are limited to architectural standards in new and altered buildings and in newly leased facilities (U.S. Department of Justice, 2005).

SCRRA Design Criteria Manual, 2003

The SCRRA Design Criteria Manual serves to define the procedures that govern the initiation, progress and execution of design work for the SCRRA. The basic requirement for railroad geometric design is to provide a track structure that is consistent with safe, regulatory compliant, economical and efficient train operation. SCRRA, as a commuter operator, places a high priority on passenger safety and on minimum travel times. The design, operation and maintenance of the Metrolink System are governed by FRA regulations and CPUC General Orders.

ADA Issues, Platform, Parking Lot and Street Access

Access to stations shall conform to the requirements of the ADA, Title II, and California accessibility regulations, Title 24. A conforming path of travel must be provided continuously from the street to the platform and platform and parking lot facilities must comply with the referenced codes. An example of a SCRRA barrier-free path of travel from accessible parking to platforms is shown on Figure 3.13-1. Pedestrian access shall be provided along dedicated walkways complying with ADA and Title 24 requirements from the street to the platform. Access to a contiguous dedicated sidewalk or walkway system is desirable.

Mini-High Platform

In order to provide for level boarding of the train through the use of a bridge plate, a mini-high platform is required. An example of a "mini-high" platform is shown on Figure 3.13-1. The mini-high platform is 1'-1" above the general platform level and is set back 7'-11" from the centerline of track. ~~On all lines except the Inland Empire/Orange County and 91 Lines, the mini-high platform is centered 61'-4" from the Los Angeles end of the station.~~

Riders with mobility limitations are accommodated starting with the cab car on each train. If the wheelchair or other ADA features of the cab car become fully occupied, then the train crew will begin filling those spaces on the cars behind the cab car as needed to accommodate all riders with mobility limitations. Mini-high platforms provide full ADA accessibility and therefore no impact to the PVL project related to train access.

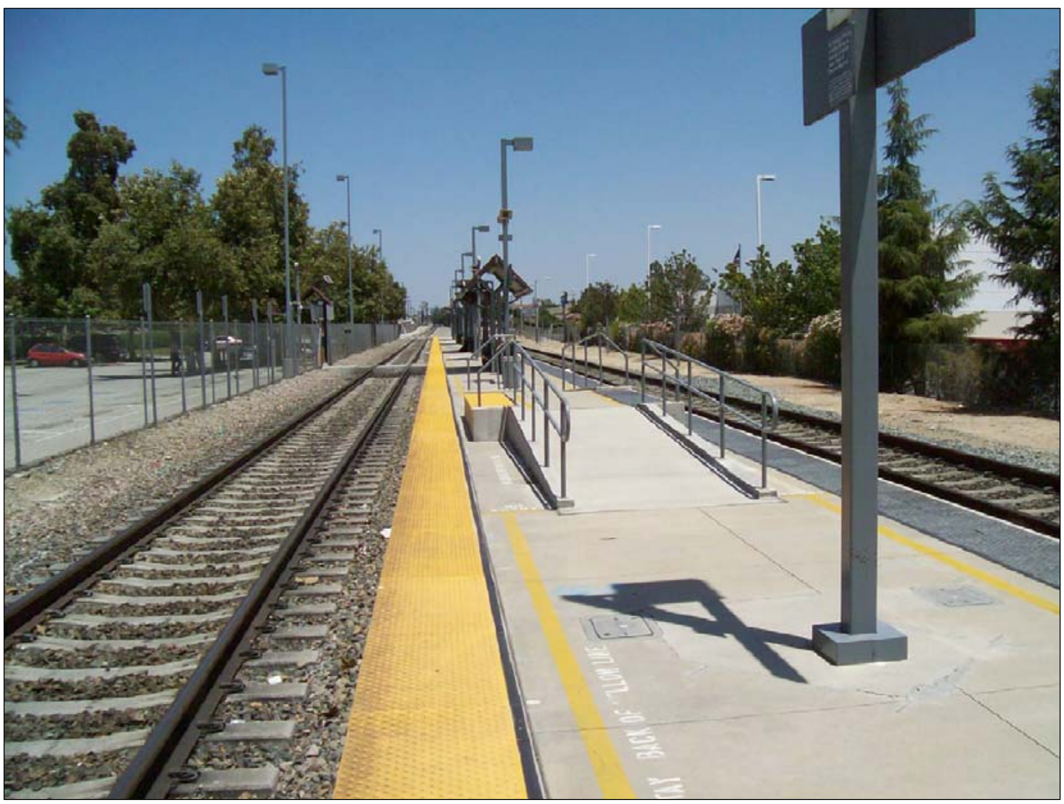
In the rare instance of a train needing to reverse at a station to allow ADA access, there is sufficient distance between the platform and the nearest grade crossing to not block roadway traffic. In addition, this procedure will not cause any additional concern regarding safety at the platform or immediate areas.

RCTC Commuter Rail and Multimodal Facility Design Criteria Manual

The RCTC Commuter Rail and Multimodal Facility Design Criteria Manual was developed to establish the design guidelines to be used for future facilities. This manual provides guidelines for developing commuter rail stations, park and ride facilities, and multimodal transit centers developed by RCTC. Commuter rail stations would meet SCRRA design requirements. Platforms would be designed to be safe, clear, and free of obstruction with all required safety and ADA features. For the Layover Facility, the Commission would follow SCRRA's standards for Layover Facility design.

This Page Intentionally Left Blank

BARRIER-FREE PATH OF TRAVEL FROM PARKING LOT TO PLATFORM



MINI-HIGH PLATFORM FOR BOARDING AT FLOOR LEVEL OF TRAIN CARS

PROJECT NO.	92666	**TYPICAL STATION FEATURES FOR ADA MOBILITY**	FIGURE
DRAWN:	1/18/10		
DRAWN BY:	JP		**3.13-1**
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666PHOTO1.dwg			

The intent of this manual is to provide station designers a basis for design of new RCTC commuter rail stations. This manual is used in conjunction with the SCRRA Design Criteria Manual and all other relevant codes and requirements. The manual is used as a basis for the design of the new stations along the PVL, and any additional stations or multimodal facilities in Riverside County. RCTC commuter rail station design complies with the codes/design manuals listed above, plus local building, planning and zoning codes and standards. If a conflict between the codes/design manuals arises, then the most restrictive code shall apply.

For ADA issues, platform, parking lot and street access, requirements outlined in the SCRRA Design Criteria Manual (Section 7.4.2, ADA Issues, Platform, Parking Lot and Street Access) shall be applied to RCTC station design. The stations would also meet required CPUC safety standards as appropriate. SCRRA's new design criteria require at-grade crossings at the ends of the platforms with pedestrian gates and signals. For Mini-High Platforms, all requirements outlined in the SCRRA Design Criteria Manual (Section 7.5.5 Mini-High Platform) shall be applied to RCTC station design.

<u>2007 California Building Code</u>

The CBC was adopted and approved by the California Building Standards Commission on January 30 2007 (and became effective on January 1, 2008). The building standards adopted by the Commission for the 2007 CBC (Part 2 of Title 24) were based on the 2006 International Building Code.

3.13.2 Affected Environment

Each of the four stations constructed as part of the proposed PVL project would meet the federal mandate of ADA access, providing safe, barrier-free pedestrian access to the stations and each platform. The PVL stations would be constructed at-grade, with 680-feet long side platforms. The "typical" platform is constructed of concrete with steps up, or walkways, from the surrounding grade to reach track elevation. Accessible "mini-high" platforms would be located on platforms to provide for level boarding onto the trains by ADA passengers. All parking areas would be at-grade. The accessibility features of each of the proposed stations would be similar, with the primary differences between individual stations related to the specific topography of each site. All platforms would be fully compliant, and station areas would be provided with ADA-compliant pedestrian access from all perimeter streets. The four proposed stations and Layover Facility are described in terms of their specific accessibility features below.

<u>Hunter Park Station</u>

There would be approximately 28 accessible parking spaces provided. All would be sidewalk-adjacent with compliant paths of travel from parking spaces to platform.

<u>Moreno Valley/March Field Station</u>

There would be continuous compliant pedestrian access provided from Meridian Parkway, the only site-adjacent public street.

The trackway is located in cut approximately 20 feet below the parking lot level. A compliant pedestrian ramp would provide parking lot access to/from the station platform.

Approximately 24 accessible parking spaces would be provided. All would be sidewalk-adjacent with compliant paths of travel from parking spaces to platform.

Downtown Perris Station

There would be continuous ADA-compliant pedestrian access provided from perimeter streets at north, west, and south sides, as well as at site-approaching stub streets at east side (First, Second, and 3rd Streets).

Approximately 28 accessible parking spaces would be provided. All would be sidewalk-adjacent with compliant paths of travel from parking spaces to platform.

South Perris Station

Approximately 40 accessible parking spaces would be provided. All would be sidewalk-adjacent with compliant paths of travel from parking spaces to platform.

Layover Facility

The Layover Facility would include an employee support building with modular offices, storage, parking, and a crew restroom and break room. The Layover Facility would have ADA-accessible parking and the employee support building would have ADA-accessible showers and bathrooms. As the employee support building is located within a 100-year floodplain, it would be constructed six feet above grade level and a wheelchair lift (instead of a ramp) would be provided to allow access.

3.13.3 Environmental Consequences/Impacts

With the range of ADA-compliant codes that pertain to the PVL in place, the proposed project would be fully compliant with the accessibility requirements of the ADA.

3.13.4 Mitigation Measures

The RCTC fully supports ADA compliance, and it is anticipated that public meetings associated with the PVL would be held in public spaces, which in their own design must be ADA-compliant. RCTC fully commits to compliance with ADA requirements, including construction projects and public meeting locations.

3.14 BIOLOGICAL RESOURCES

Biological resources include protected natural plant communities, wetlands and other waters, and state and federal threatened, endangered, and sensitive (TES) plant and animal species, as well as their associated habitats. This section addresses biological resources within and adjacent to the PVL project. Impacts associated with the construction of the PVL project are also described in the following sections.

3.14.1 Regulatory Setting

Biological resource regulations from the federal, state, and local levels focus on sensitive species and habitats.

Federal Endangered Species Act 16 USC 1531-1544)

The Endangered Species Act (ESA) directs all federal agencies to participate in endangered species conservation. The federal ESA provides protection for endangered and threatened species, and requires conservation of designated species' critical habitats. An "endangered" species is a species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become "endangered" in the foreseeable future without further protection. Other special status species include "proposed", "candidate", and "species of concern." Proposed species are those that have been officially proposed in the FR for listing as threatened or endangered. Candidate species are those for which sufficient information is available to propose listing as endangered or threatened. "Species of concern" are species for which not enough scientific information has been gathered to support a listing proposal, but still may be appropriate for listing in the future after further study. A "delisted" species is one whose population has reached its recovery goal is no longer in jeopardy.

The ESA is administered by the U.S. Fish & Wildlife Service (USFWS) and the National Marine Fisheries Services (NMFS). Under the ESA, it is prohibited to take, harm, or harass species listed as threatened or endangered by the USFWS. A permit for taking a federally listed threatened or endangered species may be obtained either through Section 7 consultation (where the proposed action requires approval of a federal agency) or Section 10(a) (i.e., where the proposed non-federal action requires development of a Habitat Conservation Plan [HCP]). Both cases require consultation with the USFWS and/or NMFS, which ultimately issues a final opinion determining whether the federally listed species would be adversely impacted by a proposed project. Under Section 4(d), an alternative permitting approach can be written by the Secretary of the Interior for use with federally threatened species.

Fish and Wildlife Coordination Act (16 USC 661-667E)

The Fish and Wildlife Coordination Act (1934), authorized the Secretaries of Agriculture and Commerce to assist and cooperate with federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, and to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. Amendments to the Act require consultation with the USFWS, NMFS, and state agencies responsible for fish and wildlife resources for all proposed federal undertakings and non-federal actions needing a federal permit or license that would impound, divert, deepen, or otherwise control or modify a stream or water-body; and to make mitigation and recommendations to the involved federal agency.

Migratory Bird Treaty Act (16 USC 703-712)

The Migratory Bird Treaty Act (MBTA) provides special protection for migratory families of birds (i.e., those avian species that winter south of the U.S. but breed within the U.S.) by regulating hunting and trade. The Act prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). “Take” includes any disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young). Such activity may be punishable by fines and/or imprisonment. The use of families as opposed to individual species within the Act means that numerous non-migratory birds are extended protection under the MTBA. Most nesting birds are covered by the MBTA.

Executive Order 13112: Invasive Species

The purpose of this Executive Order is to prevent the introduction and control the spread of invasive plant and animal species. This law prohibits the federal government from authorizing or funding of actions that may cause or promote the introduction and/or spread of invasive species unless the agency has determined that the action’s benefits clearly outweigh potential harm caused by invasive species; and that all feasible and prudent measures would be taken to minimize risk of harm. This Executive Order also requires federal agencies to consult with the Invasive Species Council, consistent with the Invasive Species Management Plan.

Western Riverside County Multiple Species Habitat Conservation Plan[3]

The Western Riverside County MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in Western Riverside County. The MSCHP is a large, multi-jurisdictional habitat-planning effort in with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP is an element of RCIP to conserve open space, nature preserves and wildlife to be set aside in some areas. It is designed to protect over 150 species and conserve over 500,000 acres in Western Riverside County. RCTC is also a signatory on the MSHCP Implementing Agreement and a permitee under the Plan.

The MSHCP Plan Area encompasses approximately 1.26 million acres (1,966 square miles); it includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. It covers multiple species and

[3] As a permittee to the MSHCP, RCTC compliance is dependent upon project consistency with the MSHCP. This was accomplished on July 12, 2011 via the Joint Project Review (JPR). As a federal agency, FTA has engaged USFWS Section 7 consultation, per the ESA. This Section 7 consultation was completed on February 7, 2012.

multiple habitats within a diverse landscape, from urban centers to undeveloped foothills and montane forests, all under multiple jurisdictions.

The MSHCP serves as an HCP pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act of 1973, as well as a Natural Communities Conservation Plan (NCCP) Act of 2001. The MSHCP is used to allow the participating jurisdictions to authorize "Take" of plant and wildlife species identified within the MSHCP area. The USFWS and CDFG have authority to regulate the take of TES species. Under the MSHCP, the USFWS and CDFG would grant "Take Authorization" for otherwise lawful actions, such as public and private development that may incidentally “take” or harm individual species or their habitat outside of the MSHCP Conservation Area, in exchange for the assembly and management of a coordinated MSHCP Conservation Area. It should be noted that compliance with the Plan provides full mitigation for all species and habitat impacts for non-Federal projects.

Executive Order 11990: Protection of Wetlands

Executive Order 11990 directs that federal agencies provide leadership and take action to minimize destruction, loss, or degradation of wetlands associated with: (1) acquisition, management, and disposition of federal land and facilities; (2) federally funded or assisted construction and improvement; or, (3) federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Clean Water Act (33 USC 1251-1376)

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. There are numerous sections of the CWA that provide guidance related to implementation of this type of project.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in discharge to jurisdictional waters (including wetland/riparian areas) of the United States must obtain a state water quality certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California.

Section 402 is regulated by the USEPA and establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the United States. It establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program. The RWQCBs also administer the NPDES permits for construction activities and operations.

Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) regulating the discharge of dredge or fill material into waters of the United States, including wetlands, and jurisdictional non-wetland waters. The USACE has permit authority derived from Section 404 of the CWA (33 CFR Parts 320-330). The permit review process includes an assessment of potential adverse impacts to wetlands and streambed habitats and determination of any required mitigation measures. As a condition of the 404 permitting process, a 401 Water Quality Certification or waiver is required from the RWQCB. Where federally-listed species may be affected, a Section 7 consultation with the USFWS under the federal ESA is required.

3.14.2 Affected Environment

MSHCP Areas

Based on a review of the MSHCP Area Plans, the PVL project was determined to be within multiple Area Plans that include the cities of Riverside and Norco Area Plan, Highgrove Area Plan, March Area Plan, Mead Valley Area Plan, and the Harvest Valley / Winchester Area Plan. Portions of an Area Plan contain Area Plan Subunits that have target conservation acreages that have been established based on planning species, biological issues and considerations, and criteria for each Subunit.

Within the cities of Riverside and Norco Area Plan, the Sycamore Canyon West, Subunit 2 is located adjacent to the PVL alignment. Within the Highgrove Area Plan the PVL project bisects the Sycamore Canyon/Box Springs Central, Subunit 1. Within the Mead Valley Area Plan, the PVL alignment intersects the San Jacinto River Lower, Subunit 4.

Within the Area Plans are specifically designated habitat blocks and linkages. Approximately 1,400 feet east of the SJBL, between Marlborough and Spruce Streets is Noncontiguous Habitat Block A. Proposed Constrained Linkage 7 crosses the I-215 and SJBL line at Poarch Road. Proposed Constrained Linkage 8 is located 1,000 feet east of SJBL line at Big Springs Road. MSHCP also identifies Existing Core D at two locations within the study area; to the west of I-215 and SJBL line at Central Avenue and Gernert Road, and less than 500 feet south of the Moreno Valley/March Field Station site. The southern portion of the study area, within the city of Perris, identified Proposed Noncontiguous Habitat Block 4 is located approximately 1,500 feet west of I-215 and the SJBL line. In the southern portion, MSHCP identified Proposed Constrained Linkage 19 that crosses the SJBL line (east and west of I-215) at the San Jacinto River. Cores and Linkages, including connections and species provided for, with the presence of live-in and/or movement habitat are provided below in Table 3.14-1 and shown on Figure 3.14-1.

- **Existing Noncontiguous Habitat Block A** is located in the Box Springs Mountains, near the northern boundary of the cities of Riverside and Norco Area Plan. This Block includes two pieces of land connected by Proposed Constrained Linkage 8 and in turn connected to other MSHCP conserved lands via Proposed Constrained Linkage 7 and Proposed Linkage 4. This Block provides Live-In Habitat for species, and it likely contains movement habitat for common mammals such as the bobcat. It is partially constrained by existing urban development and is surrounded by a city planned land use designation.

- **Proposed Constrained Linkage 7** is comprised of upland habitat in the vicinity of Central Avenue. It is the only connection from Sycamore Canyon Park to Box Springs Reserve. This Linkage is important for species dispersal and would reduce the likelihood of species extinction as a result of population isolation. Habitat Planning Species such as cactus wren and Bell's sage sparrow occur within this Linkage. This Linkage likely provides for movement of common mammals such as bobcat. The Linkage is constrained by existing urban development and roadways.

- **Proposed Constrained Linkage 8** is comprised of upland habitat in the Pigeon Pass Valley and connects to two existing Noncontiguous Habitat Blocks in the Box Springs Mountain area. Planning species such as cactus wren and bobcat may move through the area. Maintenance of contiguous habitat with appropriate refugia for resting, such as rockpiles, brushpiles, windfalls, hollow snags and hollow trees, is important for dispersal of juvenile animals. This Linkage is constrained by planned Rural Mountainous development to the north.

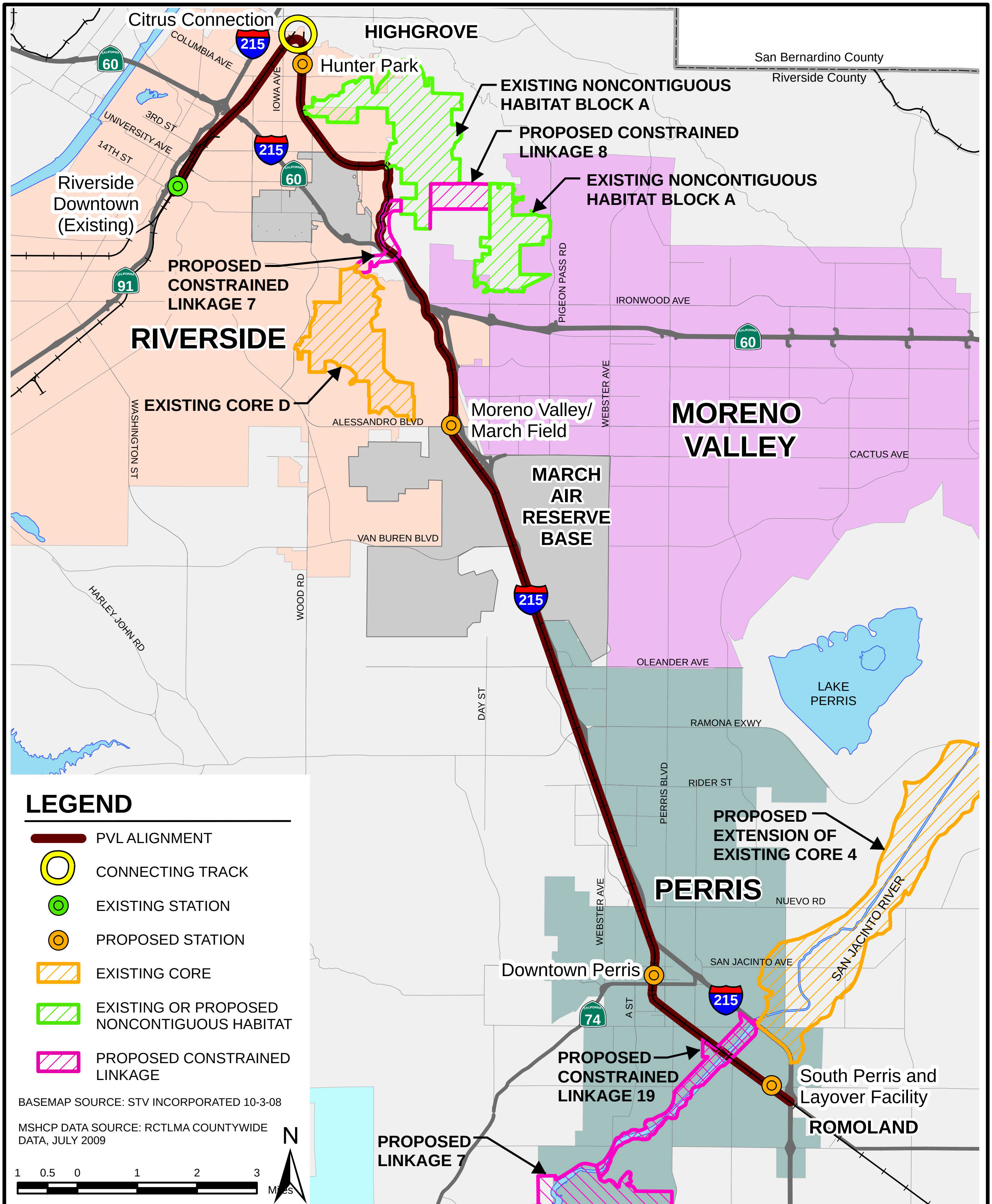
- **Existing Core D** consists of Sycamore Canyon Park and is the most isolated of all proposed and existing cores. It is connected to Existing Noncontiguous Habitat Block A via Proposed Constrained Linkage 7. This Core provides Live-In Habitat for the granite spiny lizard and likely provides movement habitat for bobcat. Management control within this Core includes March JPA and the City of Riverside Park and Recreation Department.

- **Proposed Noncontiguous Habitat Block 4** is comprised of the Motte Rimrock Reserve. It provides habitat for a number of Planning Species, including Quino checkerspot butterfly, coastal California gnatcatcher, and Stephens' kangaroo rat.

- **Proposed Constrained Linkage 19** (Lower San Jacinto River) is located approximately in the center of the Mead Valley Area Plan. This Linkage connects Proposed Linkage 7 in the southwest with Proposed Extension of Existing Core 4 (San Jacinto River Core) in the northeast. Existing agricultural use and a small amount of existing urban development constrain the Linkage along much of its length. Although there are plans to channelize the river to control flooding, the Linkage would maintain connectivity along the river and provide for movement of common mammals such as the bobcat. Narrow Endemic Plant Species (NEPS) are also known to occur near San Jacinto River.

- **Criteria Cells** are used to identify the specific habitat requirements within the Area Plans, Criteria Cells are identified based on land parcel information. The PVL borders and bisects a total of five Criteria Cells in two of the five Area Plans (Criteria Cells 545, 362, 721, 3276, and 3378), as shown on Figure 3.14-2. Table 3.14-2 summarizes the conservation criteria for each Criteria Cell and the PVL study area's relationship to that particular Cell.

This Page Intentionally Left Blank



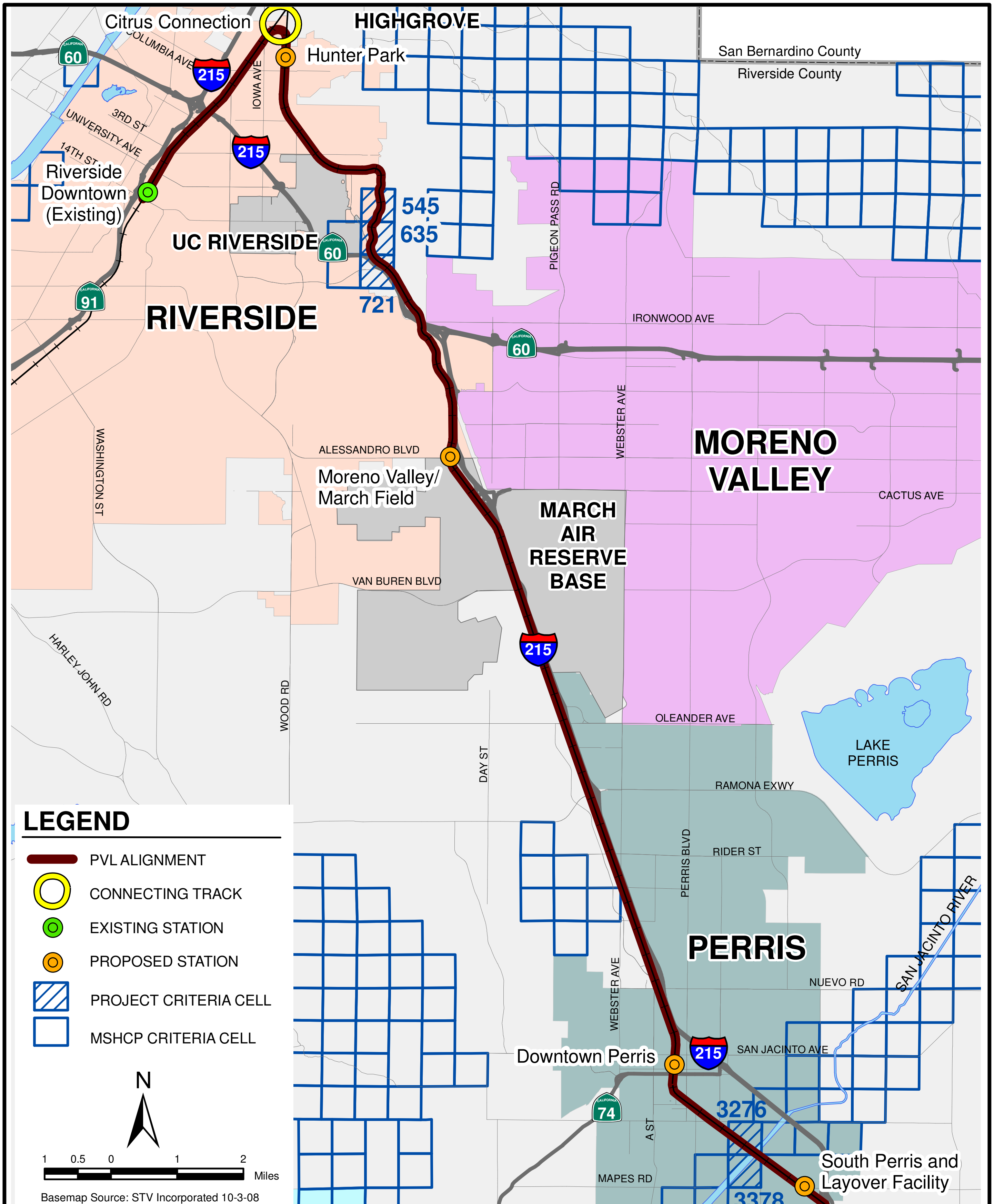
PROJECT NO.	92666
DRAWN:	5/10/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666landEA2sea.MXD	

MSHCP CORES AND LINKAGES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.14-1



PROJECT NO.	92666
DRAWN:	1/15/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666MSCHP2EA.MXD

MSHCP CRITERIA CELLS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.14-2

Table 3.14-1
Cores and Linkages related to PVL

Feature	Species	PVL Relationship	Adjacent General Plan Land Use	Covered Activities
Existing Noncontiguous Habitat Block A	southern California rufous-crowned sparrow, Bell's sage sparrow, cactus wren, loggerhead shrike, Stephens' kangaroo rat, bobcat, and Nevin's barberry	1,400 ft east of SJBL Line between Marlborough and Spruce Streets (Box Springs Mountain Reserve)	Rural Mountainous, City (Riverside, Moreno Valley), Open Space/ Conservation	Pigeon Pass Road, San Bernardino to Moreno Valley CETAP Corridor
Proposed Constrained Linkage 7	Bell's sage sparrow, cactus wren, and bobcat	Crosses SJBL Line and I-215 at Poarch Road	City (Riverside) and Community Development	I-215
Proposed Constrained Linkage 8	southern California rufous-crowned sparrow, Bell's sage sparrow, cactus wren, loggerhead shrike, and bobcat	1,000 ft east of SJBL Line at Big Springs Road	Rural Mountainous and Open Space/ Conservation	None
Existing Core D	Wilson's warbler	West of I-215 and SJBL Line at Central Avenue and Gernert Road; Less than 500 ft south of the Moreno Valley/March Field Station (Sycamore Canyon Park)	City (Riverside), Community Development	Alessandro Boulevard
Proposed Constrained Linkage 19	mountain plover, loggerhead shrike, white-faced ibis, bobcat, Los Angeles pocket mouse, San Jacinto Valley crownscale, Davidson's saltscale, thread-leaved brodiaea, vernal barley, Coulter's goldfields, spreading navarretia, and Wright's trichocoronis	Crosses the SJBL Line along the Lower San Jacinto River	City (Perris)	Ethanac Road, I-215
Proposed Noncontiguous Habitat Block 4	Bell's sage sparrow, cactus wren, coastal California gnatcatcher, Stephens' kangaroo rat, and long-spined spine flower	1,500 ft west of I-215 and SJBL Line (Motte Rimrock Reserve)	Community Development and Rural	None

Table 3.14-2
MSHCP Cell Number Conservation Criteria

Cell Number	Conservation Criteria	PVL Study Area Relationship
Highgrove Area Plan: Sycamore Canyon/Box Springs Central Subunit 1		
545	Conservation within Cell# 545 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat. Areas conserved within this Cell will be connected to coastal sage scrub habitat proposed for conservation to the south in Cell# 635. Conservation within Cell# 545 will range from 15%-25% of the southeastern portion of the Cell.	The existing railroad tracks have historically bisected the cell. Since the existing footprint is staying the same, there is not a conflict with the conservation objectives of the cell.
635	Conservation within Cell# 635 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat. Areas conserved within Cell# 635 will be connected to coastal sage scrub habitat proposed for conservation to the south in Cell# 721 and to the north in Cell# 545. Conservation within this Cell will range from 25%-35% of the central portion of the Cell.	The existing railroad tracks have historically bisected the cell. Since the existing footprint is staying the same, there is not a conflict with the conservation objectives of the cell.
721	Conservation within Cell# 721 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat and riparian scrub, woodlands and forests. Areas conserved within this Cell will be connected to coastal sage scrub habitat proposed for conservation to the north in Cell# 635 and to the west in Cell# 719 in the city of Riverside. Conservation within Cell# 721 will range from 35%-45% of the northeastern and central portions of the Cell.	The existing railroad tracks have historically bisected the cell. Since the existing footprint is staying the same, there is not a conflict with the conservation objectives of the cell.
Mead Valley Area Plan: San Jacinto River Lower Subunit 4		
3276	Conservation within Cell# 3276 will contribute to assembly of Proposed Constrained Linkage 19. Conservation within Cell# 3276 will focus on assembly of grassland habitat associated with the San Jacinto River. Areas conserved within Cell# 3276 will be connected to grassland habitat and agricultural land proposed for conservation in Cell# 3277 to the east and to agricultural land proposed for conservation in Cell# 3378 to the south. Conservation within Cell# 3276 will range from 45%-55% of the Cell focusing in the southern portion of the Cell.	The existing railroad tracks have historically intersected this cell. The project proposes track upgrades in the area and the replacement of two bridges over the San Jacinto River and Overflow Channel. Since the bridges are replacements of existing structures, there is not a conflict with the conservation objectives of the cell.
3378	Conservation within Cell# 3378 will contribute to assembly of Proposed Constrained Linkage 19. Conservation within Cell# 3378 will focus on assembly of agricultural land associated with the San Jacinto River. Areas conserved within this Cell will be connected to agricultural land proposed for conservation in Cell# 3377 to the west, to grassland habitat proposed for conservation in Cell# 3276 to the north, and to agricultural land proposed for conservation in Cell# 3277 to the northeast. Conservation within Cell# 3378 will range from 30%-40% of the Cell focusing in the northwestern portion of the Cell.	The existing railroad tracks have historically intersected this cell. The project proposes track upgrades in the area and the replacement of two bridges over the San Jacinto River and Overflow Channel. Since the bridges are replacements of existing structures, there is not a conflict with the conservation objectives of the cell.

Stephens' Kangaroo Rat Areas

The Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) established seven permanent core area reserves for SKR, one of which is in the vicinity of the proposed PVL project as shown in Figure 3.14-3 (Riverside County Habitat Conservation Agency [RCHCA], 2007). The Sycamore Canyon-March Air Force Base Core Reserve is located west of I-215 and the existing PVL corridor. The SKR Reserve covers approximately 2,502 acres across two components. The proposed Moreno Valley/March Field Station is located near the SKR Reserve but outside of the boundaries. During the planning for the Meridian Business Park the SKR Reserve boundary was relocated so that all of the Meridian Business Park is now outside the SKR Reserve. This boundary was relocated after negotiations with U.S. Fish and Wildlife Service. All PVL project components are located outside the SKR Core Reserves. However, the PVL project is still within the SKR Fee Area. Any project located within the fee area is required to pay a mitigation fee to fully mitigate project impacts.
~~The SKRHCP established seven permanent core area reserves for SKR, one of which is in the vicinity of the proposed PVL project as shown on Figure 3.14-3. The Sycamore Canyon-March Air Force Base Core Reserve is located west of I-215 and the existing PVL corridor. The SKR area reserve covers approximately 2,502 acres across two components. The proposed Moreno Valley/March Field Station is located both adjacent and within the SKR Sycamore Canyon-March Air Force Base Core Reserve. The impacts to this Core Reserve were anticipated and mitigated during the planning of the Meridian Specific Plan. Since the station site is identified within this Specific Plan, no further impacts would result from the construction of the Moreno Valley/March Field Station. All other PVL project components are located outside the SKR Core Reserves. The PVL project is still within the SKR Fee Area. Any project located within the fee area is required to pay a mitigation fee to fully mitigate project impacts.~~

Habitats within the PVL Corridor

The potential presence of the burrowing owl, Southwestern willow flycatcher, least Bell's vireo, and California gnatcatcher represent the only potentially affected species within the PVL corridor. There is potential burrowing owl habitat present at the Citrus Connection and at points along the SJBL alignment between MP 3.0 and MP 9.0.

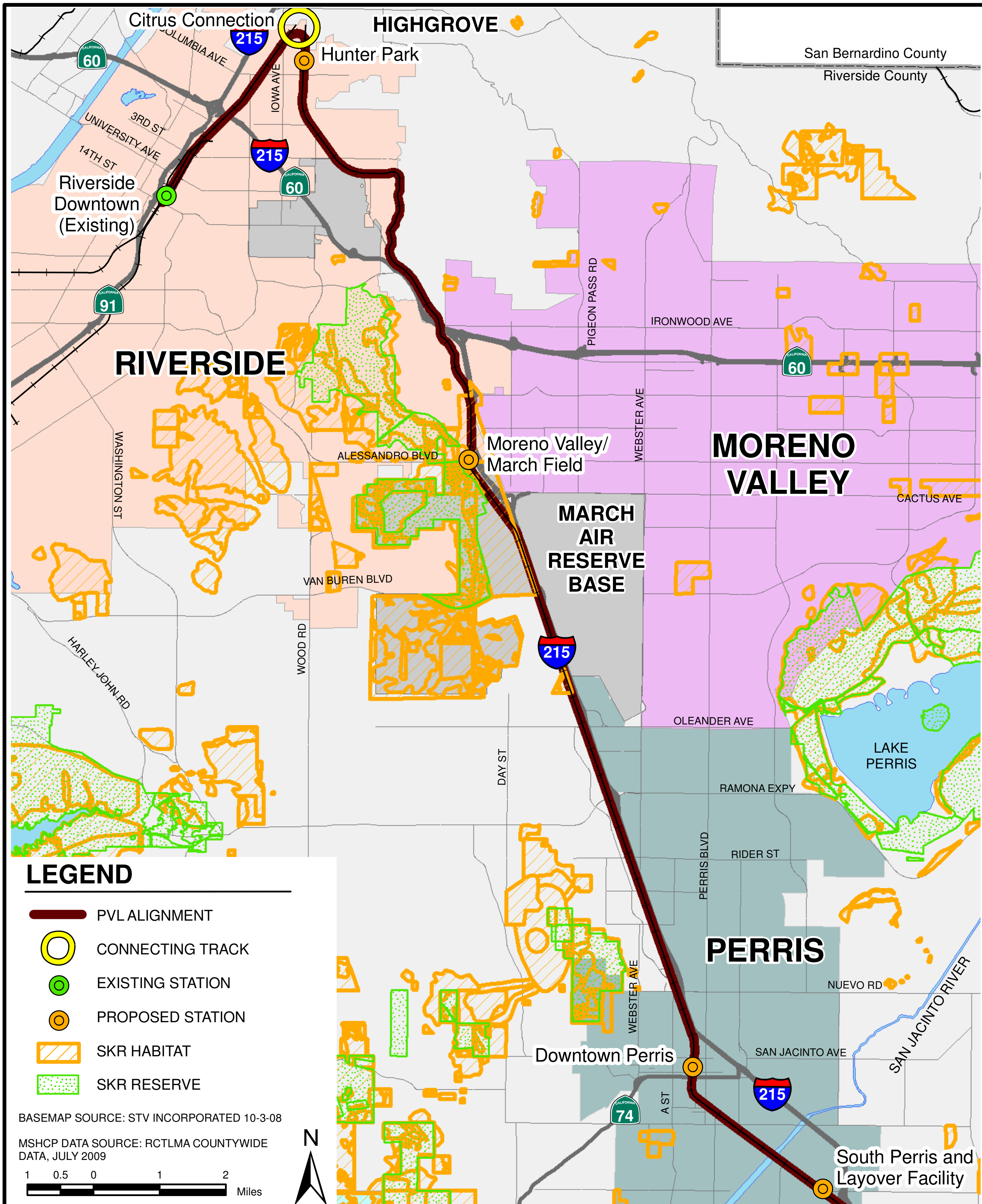
The following provides a description of the habitat types within, and adjacent to the PVL ROW as shown on Figure 3.14-4.

Citrus Connection

The Citrus Connection is located north of Springbrook Wash and would be used for new track to connect the BNSF mainline (in the west), to the SJBL (in the east). Both the BNSF mainline and the SJBL tracks already cross the wash on earthen berms, within existing ROW's and the new connecting track would be completely outside the wash. This land, north of the wash, has been approved for development as warehouse buildings by a private developer. As part of that development agreement, the land within the Springbrook Wash has been transferred into a conservation parcel. This parcel is anticipated to remain a conservation parcel in perpetuity.

The habitat of the Citrus Connection is very poor quality, disturbed non-native grassland as shown on Figure 3.14-5. This non-native grassland area has been determined to be potential habitat for burrowing owl by the MSHCP criteria determination and confirmed during a field visit.

This Page Intentionally Left Blank

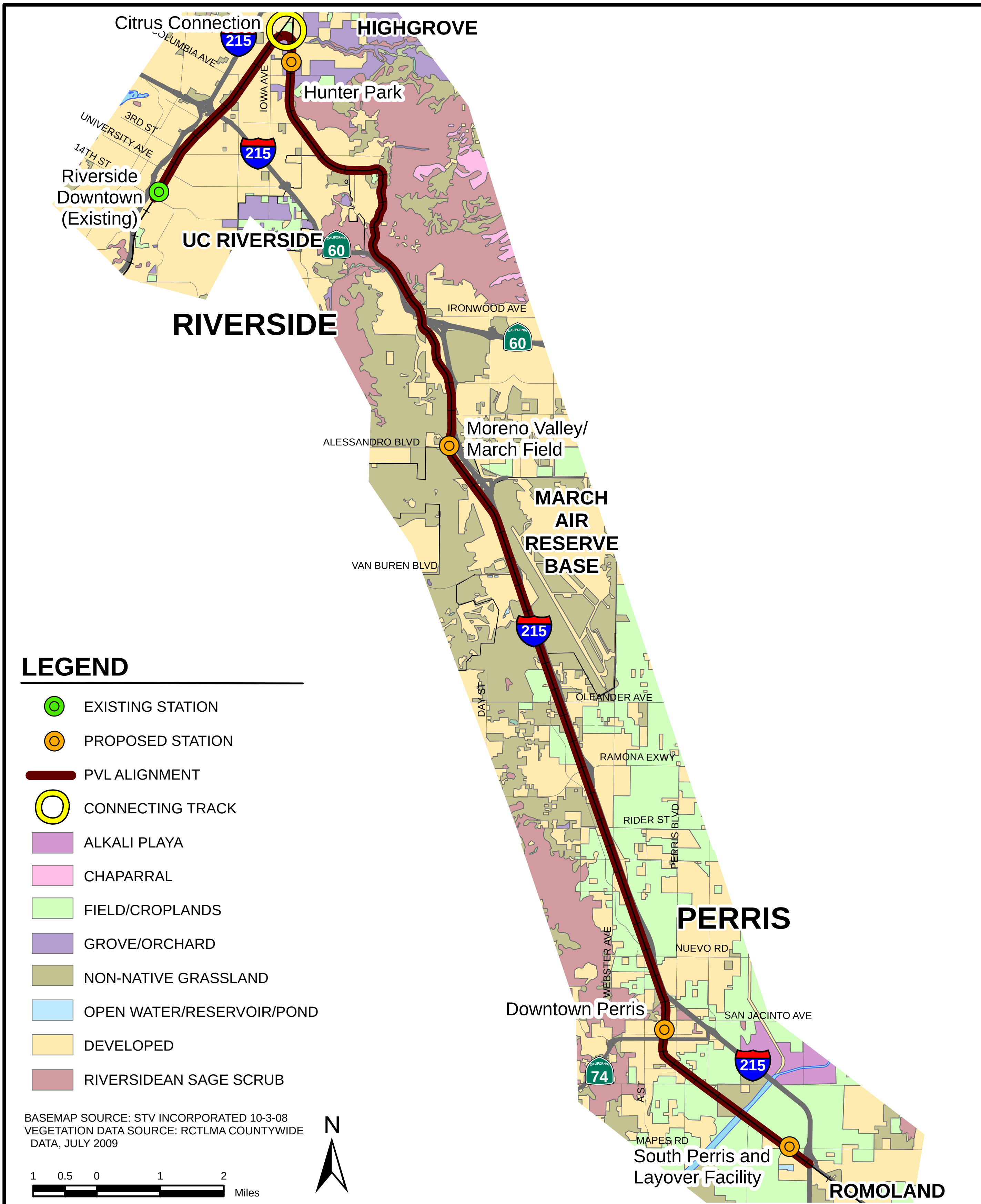


PROJECT NO.	92666
DRAWN:	1/15/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666SKrat.MXD

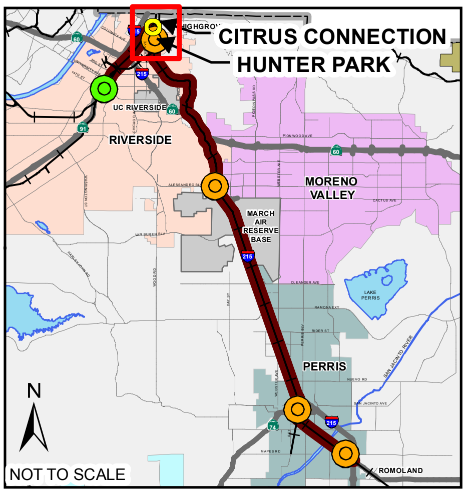
STEPHENS' KANGAROO RAT HABITATS AND RESERVES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

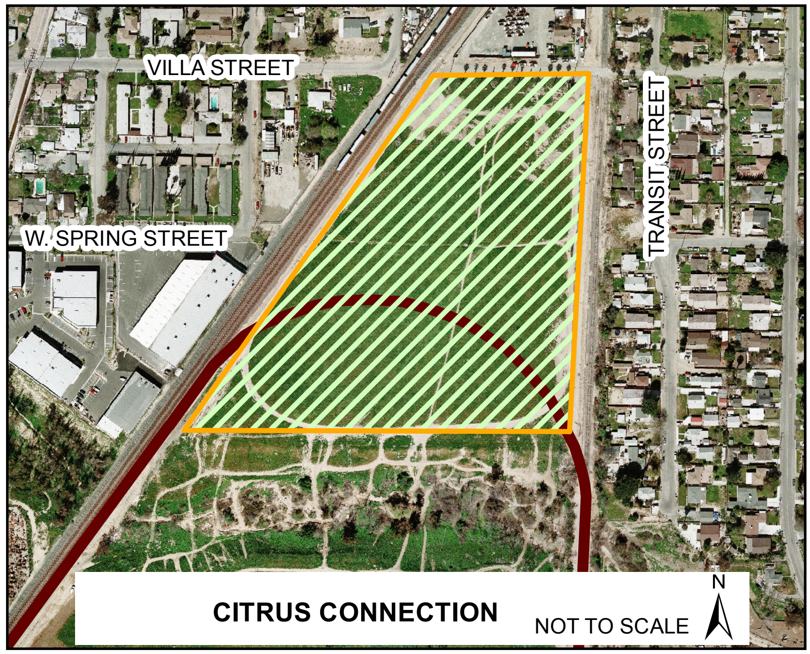
FIGURE
3.14-3

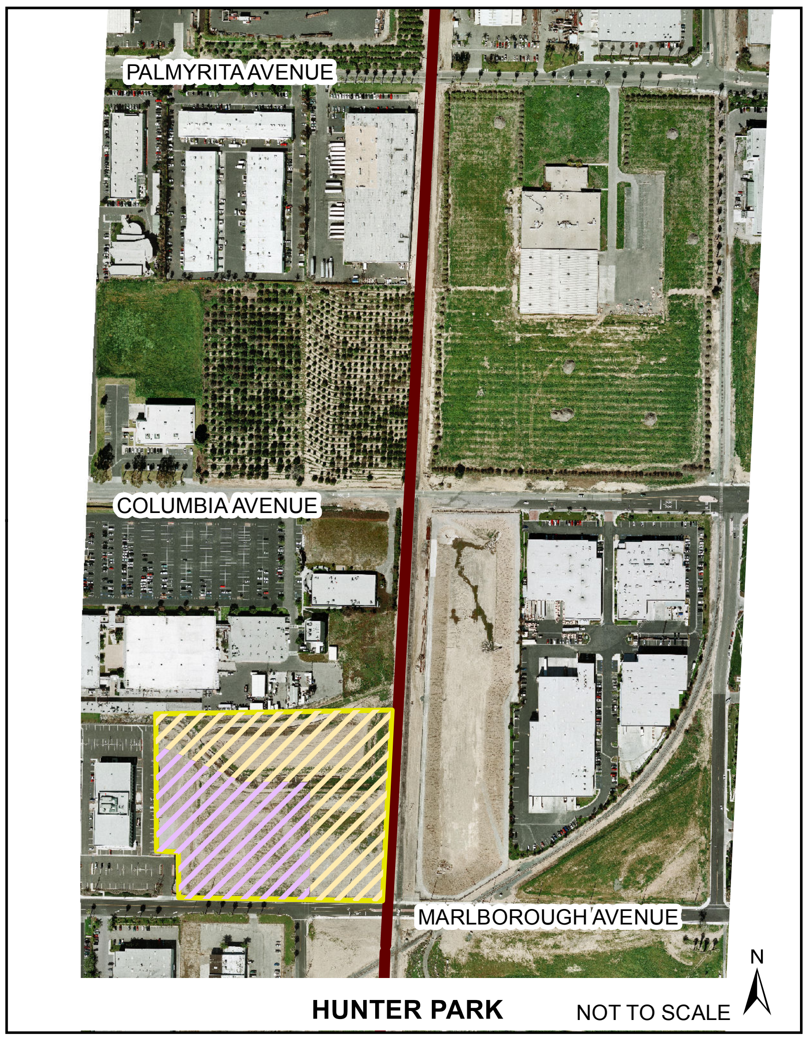


PROJECT NO. 92666	HABITAT AND VEGETATION TYPES	FIGURE
DRAWN: 5/10/10		3.14-4
DRAWN BY: JP		
CHECKED BY: RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666veg_EA.MXD		



KEY MAP FOR INSET AREAS





LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- CITRUS CONNECTION BOUNDARY
- FIELD/CROPLANDS
- GROVE/ORCHARD
- DEVELOPED

BASEMAP SOURCE: STV INCORPORATED 10-3-08
VEGETATION DATA SOURCE: RCTLMA COUNTYWIDE DATA, JULY 2009

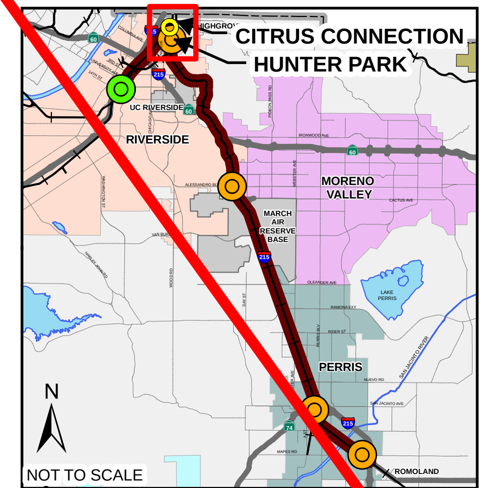
KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.	92666
DRAWN:	12/19/11
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666veg_cit_hpEA.MXD

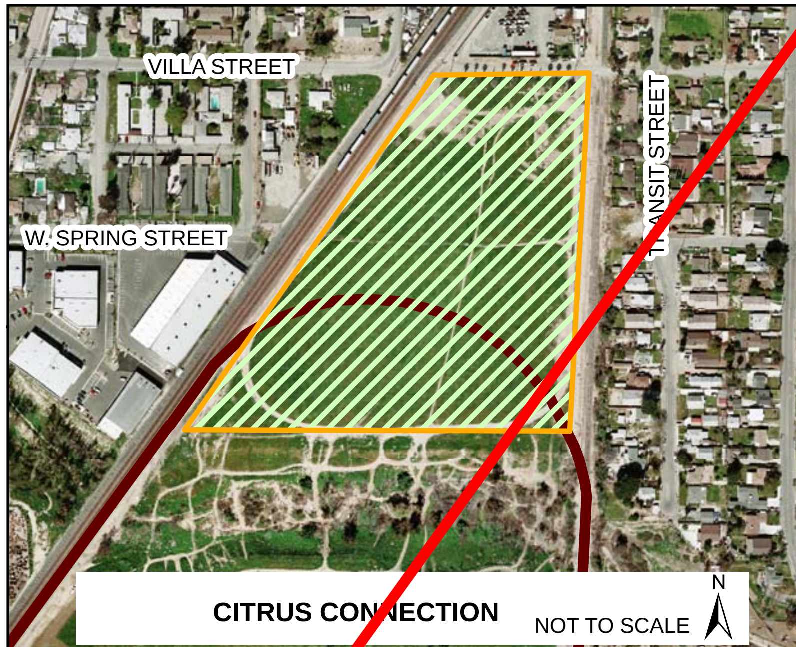
HABITAT AND VEGETATION TYPES AT STATION SITES

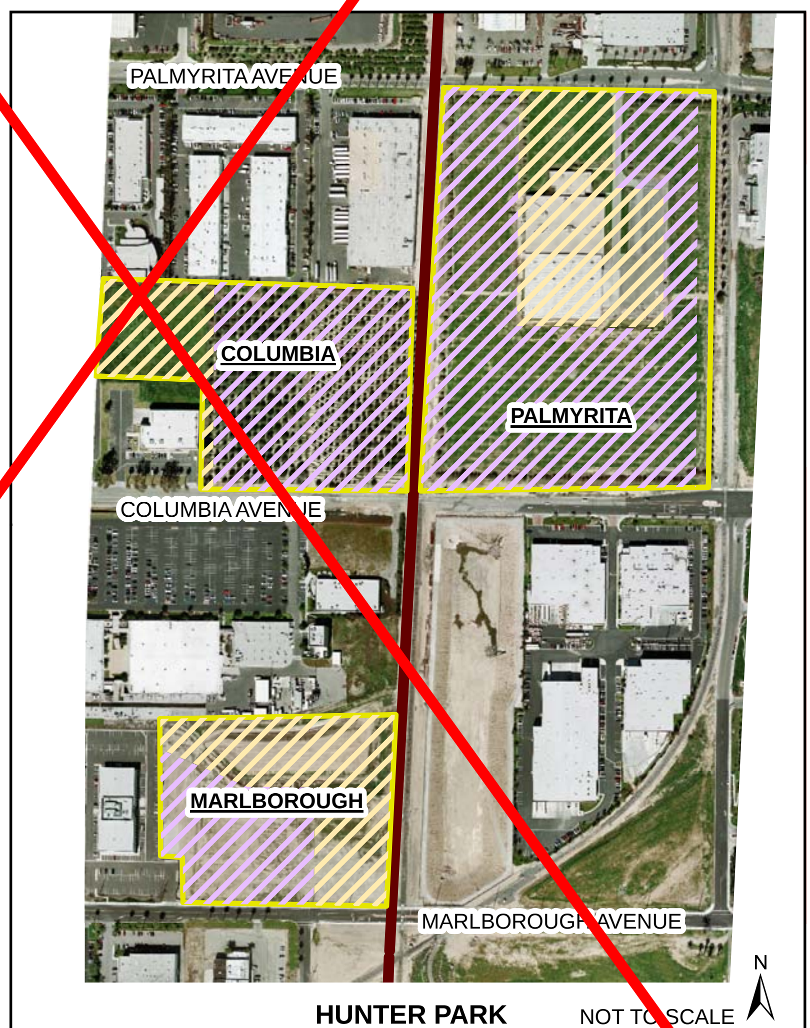
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.14-5



KEY MAP FOR INSET AREAS





LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- CITRUS CONNECTION BOUNDARY
- FIELD/CROPLANDS
- GROVE/ORCHARD
- DEVELOPED

BASEMAP SOURCE: STV INCORPORATED 10-3-08
VEGETATION DATA SOURCE: RCTLMA COUNTYWIDE DATA, JULY 2009

PROJECT NO.	92666
DRAWN:	5/10/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666veg_cit_hpEA.MXD

HABITAT AND VEGETATION TYPES AT STATION SITES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.14-5

SJBL Alignment

The SJBL alignment is existing rail ROW and extends approximately 21 miles from the Citrus Connection to the Layover Facility located south of the city of Perris. This ROW has been maintained by BNSF crews for approximately 100 years, and as a result is highly disturbed in most areas. The following provides a summary of habitat types both within the ROW and immediately adjacent to the ROW.

- Citrus Connection to MP 1.0: The ROW is highly disturbed with hard compacted soil and occasional ornamental trees, including various species of palm. The area adjacent to the ROW is industrial/commercial west of the alignment and residential transitioning to industrial east of the ROW. There is no potential habitat available for burrowing owl because of the disturbed nature of the ROW and adjacent areas.

- MP 1.0 to MP 2.0: Within the ROW for the first half of this section the ground conditions are highly disturbed and have hard pack soil. The areas adjacent to the ROW transition from industrial areas to more open uses varying from a large stormwater detention basin (east side of the ROW), with citrus orchards (west side of the ROW) to undeveloped area. The second half mile (south of Marlborough) the ROW expands with the area immediately adjacent to the tracks being disturbed and transitioning into non-native grasslands outside of the ROW. Nearing MP 2.0, there the residential areas close in to the ROW limits on both sides of the alignment. There is degraded habitat both within and adjacent to the ROW until the ROW expands. After the ROW expands there is higher quality burrowing owl habitat both within and adjacent to the ROW.

- MP 2.0 to MP 3.0: The ROW between MP 2.0 and MP 3.0 is highly disturbed with hard pack soil. The areas adjacent to the ROW are residential and therefore no available habitat for burrowing owl.

- MP 3.0 to MP 4.0: The ROW between MP 3.0 and approximately MP 3.5 is highly disturbed with hard pack soil. There is also a concrete drainage channel within the ROW through this area. After MP 3.5 the ROW enters Box Springs Mountain Reserve and the track is on an elevated berm and compacted dirt slopes away from the track on both sides to the ROW limits. The areas adjacent to the ROW are Box Springs Mountain Reserve on one side, or Islander Park on the other, therefore there is available habitat for burrowing owl, as well as California coastal gnatcatcher. It should also be noted that through this area are very small fragments of riparian vegetation centered on the drainage culverts. Additionally, there would be limited work on the tracks in this area, but there would be noise barriers installed to shield adjacent residents from the train noise. One of these walls would extend south of the last residence and is not anticipated to act as a barrier to wildlife use of the park areas.

- MP 4.0 to MP 5.0: The ROW expands again between MP 4.0 and MP 5.0. This is the distance of the Box Springs Mountain Reserve and beyond into the undeveloped land near Poarch Road. The area within the ROW is predominately sage scrub with occasional ornamental trees. West of the ROW is residential and east of the ROW is the Reserve land. There is available habitat for burrowing owl as well as California coastal gnatcatcher.

- MP 5.0 to MP 6.0: The ROW contracts just south of the MP 5.0 and continues with this more contained ROW to beyond MP 6.0. Near the MP 5.0 area the soil is eroded near the tracks and the maintained area appears closer to the ballast rock. From MP 5.0 to approximately MP 5.5 paved roads and freeway on-ramp are located west of the alignment, and undeveloped land with dirt roads and a cellular communications tower are located east of the alignment. From approximately MP 5.5 to MP 6.0 the maintained area is very narrow with riparian habitat located west of the tracks and mixed sage scrub habitat located east of the tracks. The riparian area is available habitat for willow flycatcher, least Bell's vireo, and western yellow-billed cuckoo. The sage scrub habitat is available for both burrowing owl and California gnatcatcher. There is very limited work planned in this area. The work would be to rehabilitate the existing track and limited culvert replacement.

- MP 6.0 to MP 7.0: From MP 6.0 to approximately MP 6.25 the riparian area between the freeway and the ROW continues. East of the ROW there is limited riparian habitat and the sage scrub habitat continues. At approximately MP 6.25 the PVL corridor passes under the I-215/SR-60. Below the bridges is concrete lined with no available habitat. Once south of the overpass the ROW widens and is disturbed compacted soil. The west side of the tracks contains scattered remnants of habitat. The remnant habitat includes isolated eucalyptus trees, and riparian vegetation associated with the drainage culverts. The area adjacent to the ROW north of the interstate underpass is open space east of the alignment, and freeway corridor west of the alignment. South of the interstate underpass the area adjacent to the alignment to the west is industrial/commercial development and freeway corridor east of the alignment. Near the MP 7 area there is industrial/commercial development both east and west of the alignment. There is available burrowing owl habitat along this section of alignment as well as limited riparian areas at the culvert locations.

- MP 7.0 to MP 8.0: The area within the ROW is highly disturbed with hard pack soil and one concrete culvert under the track. The culvert connects two concrete v-ditches, east and west of the ROW. Both concrete v-ditches are heavily vegetated. The area adjacent to the ROW consists of industrial/commercial warehouses to the west and the I-215 corridor to the east. In many cases the warehouse and associated spaces are encroaching into the ROW. There is limited burrowing owl habitat available along this section of the SJBL.

- MP 8.0 to MP 9.0: The area within the ROW is disturbed with small areas of non-native grassland. Starting at approximately MP 8.2 there is a concrete v-ditch west of the alignment that continues south until approximately MP 9.0. Outside of the ROW is the I-215 on the east and industrial/commercial development to the west. On the west side of the alignment, between the industrial/commercial development, are small pockets of limited habitat. The habitat is primarily disturbed non-native grassland but would be available for burrowing owls to inhabit.

- MP 9.0 to MP 10.0: The area within the ROW is disturbed habitat consisting of non-native grassland changing to highly compacted soil adjacent to the ballast rock supporting the tracks. The areas adjacent to the ROW are currently disturbed and do contain potential burrowing owl habitat.

- MP 10.0 to MP 18.0: The area within the ROW is compacted soil with fragments of disturbed habitat. In addition, there are occasional culverts that contain very small, isolated, riparian areas that are not sufficient to allow for any nesting or other species use. The area east of the ROW is the I-215 and contains no available habitat. The area to the west of the ROW is highly disturbed with land use varying from industrial/commercial to disturbed with some large parcels being graded for construction. There are landscape trees scattered along the ROW boundary that may contain nesting birds.

- MP 18.0 to MP 19.0: This area is within the city of Perris. The ROW is hard compacted soil, free of any vegetation with no available habitat. The areas adjacent to the ROW are residential with occasional landscape trees within the private yards.

- MP 19.0 to the end: This area starts at the south end of Perris and continues to the end of the proposed project. The ROW contains disturbed compacted soil near the ballast and transitions into non-native grasslands further away from the ballast. There are two bridges in this section, one that crosses the San Jacinto River and the second that crosses the San Jacinto River Overflow Channel. These bridges are currently constructed of timber and would be replaced as part of the project. The areas adjacent to the bridges are highly disturbed with no riparian habitat associated with the San Jacinto River and San Jacinto River Overflow Channel. It should also be noted that the river bed is used by trucks and all-terrain vehicles to traverse area. There is no riparian vegetation present, or associated with the river channel or overflow channel; however, there is both USACE and CDFG jurisdictional areas. The quantitative impact of these bridge replacements was also included in the jurisdictional area calculations.

Stations

The following provides a description of the vegetation and habitat types at the proposed station sites and shown on Figure 3.14-6.

Hunter Park Station

- Palmyrita Station: This potential station site is located east of the existing railroad ROW and consists of disturbed non-native grassland. A relatively new building has been built on a portion of this site and it appears that the entire site was graded during that construction.

- Columbia Station: The potential station site is located west of the ROW and is currently an active orange grove. There are small fragments of disturbed non-native grassland within the site, but no potential sensitive species are anticipated.

- Marlborough Station: This potential station site is located west of the ROW and is currently highly disturbed by grading and the importation of fill material. There is no available habitat on this site.

Moreno Valley/March Field Station

This station site is located west of the alignment and is currently disturbed non-native grassland. This station site is part of another project, the Meridian Specific Plan. The Meridian Specific Plan has completed a project specific Environmental Impact Report (EIR). Impacts associated with this station site were anticipated in the Meridian Specific Plan EIR and the appropriate mitigation incorporated. The Meridian project is preparing the site and would transfer the site to the PVL project for construction.

Downtown Perris Station

The Downtown Perris station is located in downtown Perris in a developed area with no available habitat.

South Perris Station

The potential South Perris Station is planned to be located south of the San Jacinto River and west of the I-215. The station site would be located east of the alignment on land that is currently under agricultural production. There are small remnants of scrub habitat, but the entire area is highly disturbed from the rail operations and the agricultural operations.

Layover Facility

The Layover Facility would be located adjacent to the South Perris Station on the east side of the alignment and west of the I-215. The site would be located on agricultural land and highly disturbed vacant land. The vacant land is located between Mapes Road and the I-215.

3.14.3 Environmental Consequences/Impacts

Western Riverside Multiple Species Habitat Conservation Plan

The Western Riverside MSHCP has biological and species survey requirements for any projects within the designated criteria cells. In addition, there are species survey requirements for areas based on the Assessor's Parcel Numbers for project and nearby parcels. To comply with these requirements, as well as those of various Federal agencies, as series of field surveys were completed. The surveys included; Narrow Endemic Plant Survey (NEPS), burrowing owl, riparian birds (least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo), western spadefoot toad, and a jurisdictional determination.

Narrow Endemic Plant Survey

According to the RCIP Conservation Summary Report Generator, the southern portion of the PVL project area (within the City of Perris) is located within NEPS Survey Area 3 and 10. Plant species of concern include: California Orcutt grass (*Orcuttia californica*), Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), slender-horned spineflower (*Dodecahema leptoceras*), spreading navarretia (*Navarretia fossalis*), Many-stemmed dudleya (*Dudleya multicaulis*), and Wright's trichocoronis (*Trichocoronis wrightii var. wrightii*).

Criteria Area species were also identified within the southern portion of the PVL project area: San Jacinto Valley Crownscale (*Atriplex coronata var. notatior*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana var. davidsonii*), Thread-leaved brodiaea (*Brodiaea filifolia*), Smooth Tarplant (*Centromadia pungens*), Round-leaved filaree (*Erodium macrophyllum*), Coulter's Goldfields (*Lasthenia glabrata ssp. Coulteri*), Little Mousetail (*Myosurus minimus ssp. Apus*), Nevin's barberry (*Berberis nevinii*) and Mud Nama (*Namastenocarpum*). Table 3.14-3 below lists the plant species that were included in the survey and their corresponding bloom periods. The list was generated from the list of plants outlined in the MSHCP in Section 6.1.

Table 3.14-3
Narrow Endemic and Criteria Area Survey Plant Species

Species	Common Name	NEPSSA Survey Area ID	Status	Habitat	Bloom Period
Narrow Endemic Plant Species					
Orcuttia californica	California Orcutt grass	3	List 1B.1 SE 9/79 FE 8/93	Vernal pools 15 – 660 m	April to June
Sibaropsis hammittii	Hammitt's clay-cress	10	List 1B.2	Chaparral(openings), Valley and foothill grassland/clay 720 – 1,065 m	March to April
Dudleya multicaulis	many-stemmed dudley	10	List 1B.2 CA-Endemic	Chaparral, Coastal Scrub, Valley & Foothill grassland/often clay 15 – 790 m	March to June
Satureja chandleri	San Miguel savory	10	List 1B.2	Chaparral , Cismontane woodland, Coastal scrub Riparian woodland, Valley and foothill grassland/rocky, gabbroic or metavolcanic 120 – 1,075 m	March to May
Navarretia fossalis	spreading navarretia	3	List 1B.1 FE 10/98	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools	May to June
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	3	List 2.1	Meadows and seeps, Marshes and swamps, Riparian forest Vernal pools/alkaline 5 – 435 m	May to September
Allium munzii	Munz's onion	1, 2, 4	List 1 B.1 FE 10/98 CT 1/90	Mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, valley and foothill grasslands in clay soils.	April to May

Species	Common Name	NEPSSA Survey Area ID	Status	Habitat	Bloom Period
Ambrosia pumila	San Diego ambrosia	2	List 1 B. 1 FE 7/02	Open floodplain terraces or on in the watershed margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse non-native grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas.	San Diego ambrosia appears to be primarily a clonal species that does not, under current conditions, favor sexual reproduction.
Dodecahema leptoceras	Slender-horned spineflower	1, 5	List 1 B. 1 FE 9/87 CE 1/82	At the majority of sites, slender-horned spine flower is found in sandy soil in association with mature alluvial scrub. In the Vail Lake area this species is also associated with gravel soils of Temecula arkose deposits in association with open chamise chaparral. The ideal habitat appears to be a terrace or bench that receives overbank deposits every 50 to 100 years.	April to June
Criteria Area Survey Plant Species					
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	3	List 1B.1	Marshes and swamps(coastal salt), Playas, Vernal pools 1 – 1,220 m	February to June
Atriplex serenana var. davidsonii	Davidson's saltscale	3	List 1B.2	Coastal bluff scrub, Coastal scrub/alkaline 10 – 200 m	April to October
Myosurus minimus ssp. apus	little mousetail	3	List 3.1	Valley and foothill grassland, Vernal pools (alkaline) 20 – 640 m	April to May

Species	Common Name	NEPSSA Survey Area ID	Status	Habitat	Bloom Period
Atriplex parishii	Parish's brittlescale	3	List 1B.1	Chenopod scrub, Playas, Vernal pools 25 – 1,900 m	June to October
Navarretia prostrata	prostrate navarretia	3	List 1B.1 CA Endemic	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools/mesic 125 – 700 m	April to July
Atriplex coronata var. notatior	San Jacinto Valley crownscale	3	List 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley & Foothill grassland/alkaline or clay 3 – 460 m	April to May
Centromadia pungens	smooth tarplant	3	List1B.1 CA-Endemic	Chenopod scrub, meadows, playas, riparian woodland, Valley & Foothill grassland 0 – 480 m	April to November
Berberis nevinii	Nevin's barberry	5, 6	List 1 B.1	Chaparral and alluvial scrub	March to April
Nama stenocarpum	Mud Nama	7	List 2.2	Muddy embankments of marshes and swamps, and within lake margins and riverbanks.	January to July
Erodium macrophyllum	Round-leaved filaree	1, 4	List 1 B.1	Open cismontane woodland and valley and foothill grassland	March to April
Brodiaea filifolia	thread-leaved brodiaea	3	1B.1 SE 01/82 FT 10/13/98	Chaparral, cismontane woodland, coastal scrub, playas, Valley & Foothill 25 – 860 m	March to June

Botanical surveys were conducted by Kleinfelder biologists on April 9, 2010 and June 9, 2010 for special status and narrow endemic plant species within Criteria Areas 545, 635, 721, 3276, and 3378. All areas along the rail corridor including the CASSA survey areas are routinely graded and cleared of vegetation. No MSHCP Narrow Endemic, Criteria Area or other special-status plant species were identified within the PVL project area during the botanical surveys.

Western Burrowing Owl

Both a western burrowing owl habitat assessment and protocol survey were completed for the PVL project. The habitat assessment was conducted on November 11, and 12, 2010. The habitat assessment surveyed both the existing rail corridor, proposed stations sites, layover facility and, where possible, adjacent areas out to 500 feet. The assessment identified suitable areas for owls to be present.

The areas identified as suitable habitat were then surveyed, per the County burrowing owl ~~pro~~protocol survey requirements, from July 1 to July 5, 2011. No owls were identified in the suitable habitat during the protocol surveys.

Riparian Bird Surveys

Within the project area there is only one area that has suitable (large enough) riparian habitat for sensitive birds. This area is located, generally, between Poarch Road and the I-215/SR60 underpass, just west of the city of Moreno Valley. A total of eight presence/absence surveys were conducted between April and July 2010. The results of the surveys indicated between five and seven pairs of least Bell's vireo were identified within the survey area. No southwestern willow flycatcher, or yellow billed cuckoo were identified during the surveys conducted.

Jurisdictional Determination

Based on the habitat evaluation of the PVL, the sensitive habitat locations identified within the PVL alignment include culvert locations, riparian habitat within Proposed Linkage Area 7, and areas associated with bridges over San Jacinto River and O~~o~~verflow Channel. There are thirty culverts that would be improved as part of the project as shown in Table 3.14-5. The sensitive habitat locations may have overlapping jurisdictional oversight depending on the physical characteristics as well as the associated vegetation types. The jurisdictional oversight is from the USACE (Section 404), CDFG (Section 402), and RWQCB (Section 401). A 50-foot study area surrounding each culvert was evaluated.

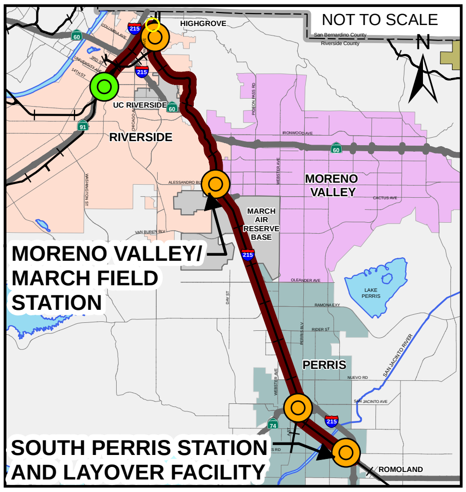
The field evaluations were conducted at each of the culvert locations on February 18, 19, and 20, 2009 with periodic updates based on changes in project design. The jurisdictional determination report was completed in December 2010.

The study areas were evaluated according to USACE and CDFG jurisdictional requirements to determine both permanent and temporary impacts, as shown in Table 3.14-4. The permanent impacts will occur in areas where new culverts would be placed and temporary impacts would be related to areas affected by construction at the ends of the culverts. The permits were submitted in August 2011, to USACE, CDFG and RWQCB describing these impacts, and requesting approval of the proposed mitigation related to the impacts.

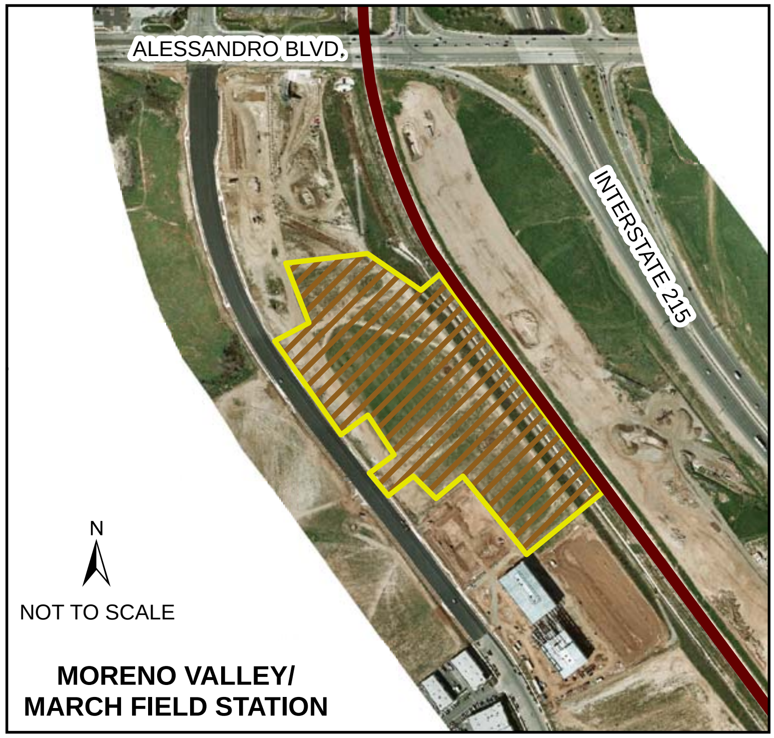
Table 3.14-4
Jurisdictional Areas of Impact

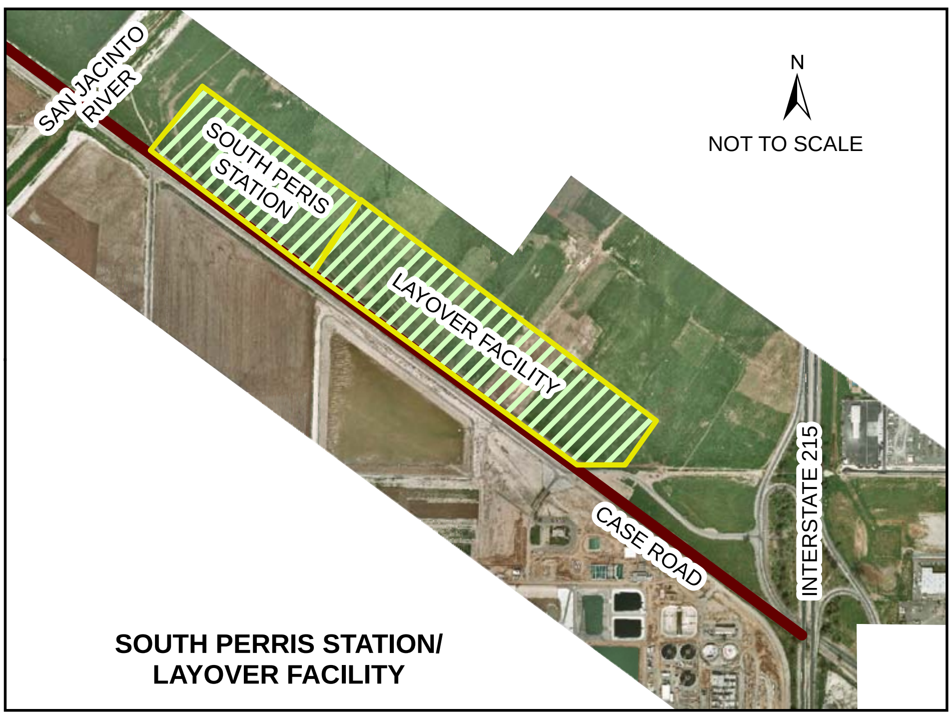
Jurisdiction	Impacts (Temporary)	Impacts (Permanent)
USACE	0.169 acres	0.029 acres
CDFG	0.334 acres	0.032 acres

This Page Intentionally Left Blank



KEY MAP FOR INSET AREAS





LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- FIELD/CROPLANDS
- NON-NATIVE GRASSLAND

BASEMAP SOURCE: STV INCORPORATED 10-3-08
VEGETATION DATA SOURCE: RCTLMA COUNTYWIDE DATA, JULY 2009

PROJECT NO.	92666
DRAWN:	5/10/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666veg_mvly_perEA.MXD

HABITAT AND VEGETATION TYPES AT STATION SITES

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.14-6

Table 3.14-5
Proposed Culvert Improvements

Area	Location (Mile Post)	Type	Change
SJBL	1.30	36"x24" wood box	36"x24" concrete box, extended 20' east
SJBL	1.40	(2) 36" Reinforced concrete pipe (RCP)	existing to extend, w/drop inlet
SJBL	5.30	(2) 48"x48" wood box	(2) 48"x48" concrete box same footprint
SJBL	5.80	36"x24" elliptical RCP	existing to extend 7' east
SJBL	6.11	(3) 12" pipes	5'x1.5' concrete box, deeper than existing
SJBL	6.50	42" RCP	add riser extension
SJBL	6.60	48" RCP on skew	extend west 19' 6"
SJBL	6.70	48" RCP	extend west 21' 6"
SJBL	9.70	36"x24" wood box	36"x24" concrete box, extended 18' east
SJBL	9.90	(2) 48" Corrugated metal pipe (CMP)	extend east 12'
SJBL	10.10	(2) 42" CMP	extend east 12' and fix west end (crushed)
SJBL	11.13	(2) 48" RCP	extend east 16'
SJBL	11.32	42" RCP	extend east 16'
SJBL	11.59	(2) 36"x24"x16" ORCP	extend east 16'
SJBL	12.10	(2) 36" CMP	extend east 14'
SJBL	12.40	(2) 54" RCP	extend east 14'
SJBL	12.52	(2) 42" RCP	extend east 8'
SJBL	12.58	(2) 36" RCP	extend east 16'
SJBL	13.20	24" RCP	extend east and west 4'
SJBL	13.40	36"x 24" wood box	removed and not replaced
SJBL	13.43	new culvert	(3) 5'x3' opening concrete box
SJBL	14.50	(2) 36" RCP	extend east 4'
SJBL	14.80	36" CMP	extend east 4'
SJBL	14.90	(2) 14" CMP	36"x18" concrete box, and extended 10' east
SJBL	15.30	(2) 36"x36" wood box	48"x72" concrete box and extended 4' east
SJBL	15.80	(2) 24"x24" wood box	48"x24" concrete box and extend 4' e. and 3'w
SJBL	16.16	18"x30" CMP	extend 8' east
SJBL	16.20	36" CMP	extend 3' 6" east
SJBL	17.10	(2) 36"x24" wood box	(2) 36"x24" Reinforced concrete box RCB
SJBL	18.10	36"x36" wood box	replace with 36"x36" RCP

3.14.4 Mitigation Measures

The USFWS issued a Biological Opinion for the project on February 7, 2012. The terms outlined in the Biological Opinion are required for the project as are the following mitigation measures.

- **BR-1:** The~~A~~ project biologist shall prepare and conduct ~~a~~ pre-construction training ~~session~~ for ~~all~~ project personnel prior to any ~~grading/construction~~ground disturbing activities. At a minimum, the training shall include a description of the target species of concern, its habitats, the general provisions of the ESA and the MSHCP, the need to adhere to the provision of the MSHCP, the penalties associated with violating the provisions of the ESA, the general measures that are being implemented to conserve target species of concern as they relate to the project, any provisions for wildlife movement, and the access routes to and from project site boundaries within which the project activities must be accomplished.

- **BR-2:** Equipment storage, fueling and staging areas ~~will~~ shall be located to minimize the risks of direct drainage into riparian areas or other environmentally sensitive habitats. The project specific SWPPP ~~will~~ shall identify appropriate construction related BMPs (such as drip pans, straw wattles, and silt fence) to control anticipated pollutants (oils, grease, etc.).

- **BR-3:** Stockpiling of materials ~~will~~ shall be limited to disturbed areas without native vegetation, areas to be impacted by project development or in non-sensitive habitats. These staging areas ~~will~~ shall be approved by the project biologist, and shall be located more than 500 feet from environmentally sensitive areas.

- **BR-4:** “No-fueling zones” ~~will~~ shall be established ~~within a minimum of~~at least 10 meters (33 feet) from drainages and fire sensitive areas.

- **BR-5:** The ~~qualified~~ project biologist ~~will~~ shall monitor construction activities at a minimum of three days per week throughout the duration of the project to ~~assess if practicable~~ensure mitigation measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. Construction monitoring reports ~~will~~ shall be completed ~~with applicable conditions~~describing field conditions and construction activities. The project biologist ~~will~~ shall be empowered to halt work activity if necessary to confer with RCTC ~~staff~~ to ensure the proper implementation of species habitat and habitat protection measures.

- **BR-6:** To avoid attracting predators that may prey upon protected species, the project site ~~will~~ shall be kept clean of trash and debris. Food related trash items ~~will~~ shall be ~~enclosed~~ disposed of in ~~a~~ sealed containers and removed from the site with regular trash removal, at least weekly. Pets of project personnel ~~will~~ shall not be allowed on site.

- **BR-7:** If dead or injured listed species are located, initial notification must be made within three working days, in writing to the USFWS Division of Law Enforcement in Torrance California, and by telephone and in writing to the applicable jurisdiction, Carlsbad Field Office of the USFWS, and the CDFG.

- **BR-8:** Narrow Endemic Plants have the potential to occur in the areas near the San Jacinto River. If Narrow Endemic Plants are identified 90% of the population ~~will~~ shall be preserved, as required in the MSHCP.

- **BR-9:** There is a potential to impact western spadefoot toads with the work on the San Jacinto River Bridge and Overflow Channel Bridge. A pre-construction survey for western spadefoot toads shall be conducted within 30 days prior to site disturbance to determine if western spadefoot ~~will determine if~~ toads are present within the designated construction area. Should western spadefoot toads be identified within the construction area, ~~an approved mitigation program will be implemented~~the project biologist shall prepare a relocation program that shall be approved by RCA and implemented prior to ground-disturbing activities in the area.

- **BR-10:** The MSHCP requires both protocol surveys and preconstruction surveys for burrowing owls. ~~If owls are identified during the preconstruction survey, the appropriate action will be determined. The appropriate action could include avoidance and passive or active relocation efforts p~~Pre-construction surveys shall be conducted within 30 days prior to ground disturbance to avoid direct take. If owls are found to be present, the following measures will be implemented; prior to burrowing owl nesting season, passive relocation will occur and active burrows will be destroyed; after burrows are destroyed, artificial burrows will be created in suitable habitat that is contiguous with the foraging habitat of affected owls, a monitoring plan will be implemented to monitor success of the mitigation program.

- **BR-11:** If nests are identified at the billboards located on the I-215 corridor, then a ~~qualified~~ project biologist ~~must~~ shall determine if the nests are active. If the biologist determines a nest to be active, appropriate buffers ~~will~~ shall be used until the birds have fledged and the nest ~~will~~ shall be removed with the approval of regulatory agencies.

- **BR-12:** There is a potential for impacts to southwestern willow flycatchers in the southern area of the Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (~~end of April to early September~~May 15th to July 17th) [Santa Ana Watershed Association (SAWA), 2004~~9)~~].

- **BR-13:** There is a potential for impacts to least Bell's vireo in the southern area of Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be conducted~~completed~~ outside the bird breeding season (~~end of March to the end of September~~April 10th to July 31st) (SAWA, 2004~~9~~).

- **BR-14:** The project is within the SKR Fee area. RCTC ~~will~~ shall pay~~, to the SKR fund managed by Riverside Habitat Conservation Agency, the required~~ $500 per acre ~~fee for developing~~ to the SKR for development outside the existing right-of-way. This fee shall be paid at the time of the grading permit submittal. The fee will include sites for the Citrus Connection, Hunter Park Station, ~~Downtown Perris Station,~~ South Perris~~ Station~~, and Layover Facility (approximately 65 acres).

- **BR-15:** There is a potential for impacts to California horned lark in the area of the South Perris Station option and the Layover Facility if the agricultural fields are allowed to fallow.

To avoid potential impacts to nesting birds, the ground preparation work ~~will~~ shall be conducted outside of the bird nesting season (March 1st to July31st) (County of Santa Barbara, 2009) and maintained to ensure that no birds then use the area for nesting prior to construction.

- **BR-16:** There is a potential for impacts to the coastal California gnatcatcher within the Box Springs Canyon Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be conducted~~completed~~ outside the bird breeding season (~~mid-~~February 15th to ~~mid-September~~August 30th) (SAWA, 2004~~9~~).

- **BR-17:** ~~Jurisdictional areas associated with the replacement of culverts would result in impacts to habitat within both USACE and CDFG jurisdictional areas.~~ Prior to any construction ~~these~~ impacts to jurisdictional areas, RCTC shall obtain ~~would require~~ permit approval from the USACE, CDFG and the RWQCB. The mitigation ~~-~~for jurisdictional area impacts will be to purchase mitigation credits at a 1:1 ratio (total of 0.41 acres) from the an approved local mitigation bank.~~Santa Ana River Mitigation Bankratios are finalized by the USACE and CDFG during permitting for the project. The permitting application is not deemed complete until the CEQA document is adopted by RCTC. Therefore, the final mitigation ratios are not determined until after the CEQA is complete. The appropriate ratio will be determined during permit negotiations~~

3.15 GEOLOGY AND SOILS

This section evaluates the effect of geological hazards within the PVL project area. These include: seismicity and faulting; liquefaction and seismically induced settlement potential; landslides, rockslides, and debris flow; and subsidence, corrosivity, and expansiveness of soils.

Regional Geology

The PVL corridor is situated within the northern portion of the Peninsular Ranges Geomorphic Province (Peninsular Ranges) of California. The Peninsular Ranges, which define the province, are a northwest-southeast oriented complex of blocks separated by similarly trending faults which extend 125 miles from the Transverse Ranges to the north and another 775 miles further south to the tip of Baja California. The Peninsular Ranges are bounded on the east by the Colorado Desert and on the west by the Pacific Ocean.

Area and Site Geology

The PVL corridor traverses three main geologic units consisting of young alluvial fan and valley deposits, older alluvial fan deposits, and granitic rock of the Peninsular Ranges Batholith. Sandstone is also mapped approximately 0.25-mile south of Box Springs Road and I-215, but is limited in depth and lateral extent. Additionally, artificial fill is present, essentially along the entire length of the PVL corridor that is associated with the construction of the existing railway. The PVL corridor geology is mapped on Figure 3.15-1.

Young alluvial and valley deposits are present in the northern and southern segments of the PVL corridor (Norton and Miller, 2008). The older alluvial fan deposits overlay most of the PVL corridor from the I-215/SR-60 interchange to south of the city of Perris and the east side of the city of Riverside in the area near the UCR. Cretaceous age, igneous intrusive tonalite phase bedrock underlies the alluvium in the region and is exposed in outcrops in the Box Springs Mountains and the hills west of the PVL corridor near the city of Perris.

The artificial fill (Qaf) soil within the PVL corridor is generally less than a few feet thick, but was observed to be up to approximately ten feet thick (approximately one-mile north of the proposed Moreno Valley/March Field Station). These soils are generally derived from the adjacent or underlying alluvial materials and composed of silty sand, sandy silt, clayey sand and clean sand with silt. The materials generally range from loose and medium dense, fine to medium grained, and dry to moist. It should be noted that specific observations pertaining to Qaf were made during field activities pursuant to work for the project's geotechnical study (Kleinfelder, 2009) and all areas of the material may not be presented on Figure 3.15-1 for site geology.

3.15.1 Regulatory Setting

The geological hazards and soils assessment of the PVL corridor are regulated by federal, state, county, and local entities. Applicable laws, ordinances, regulations, and a discussion of standards applicable to soil resources are presented below:

Federal Policies and Regulations

Uniform Building Code

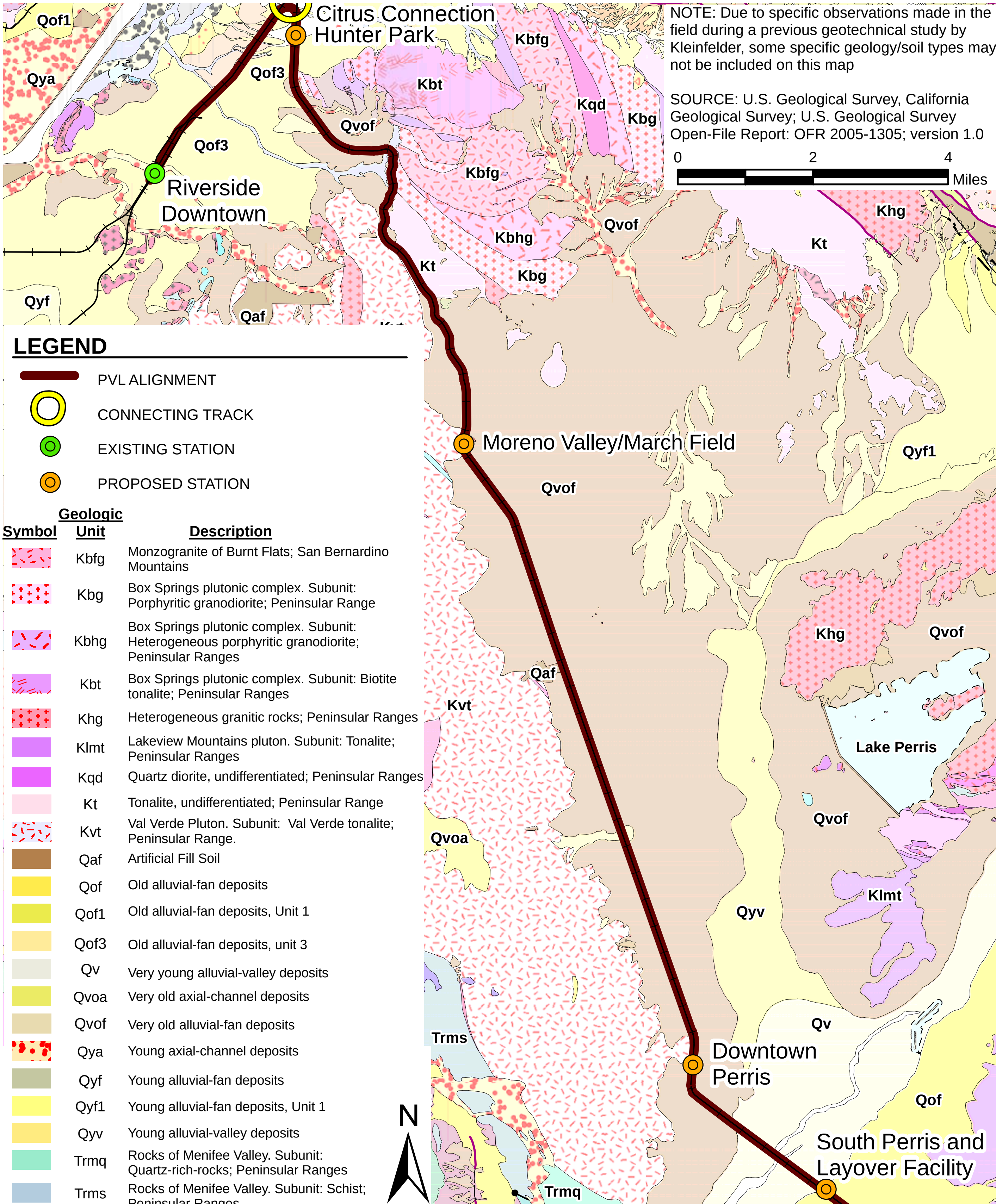
The Uniform Building Code (UBC) was first enacted by the International Conference of Building Officials (ICBO) on October 18-21, 1927. Revised editions of this code are published approximately every three years (ICBO, 1997). The CBC was approved and incorporated into the UBC in 1988. The regulatory environment for design and construction consists of building codes and standards covering local, state, federal, land use, and environmental regulations which are developed specifically for the purpose of regulating the life safety, health and welfare of the public. Once adopted, building codes become law (ICBO, 1997). The building code (which covers all new building construction, additions and renovations) is where the applicable seismic provisions are typically enforced. In addition to structural design requirements, the building code also covers fire resistance, disabled access and other life safety requirements (Fennie, 2005).

National Engineering Handbook

The National Engineering Handbook (NRCS, 1983), Sections 2.0 and 3.0 provide standards for soil conservation during planning, design, and construction activities. The PVL corridor would need to conform to these standards during grading and construction to limit soil erosion. These measures would be defined and outlined within the Project's specific stormwater plans.

American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering

The American Railway Engineering and Maintenance-of-Way Association Manual (AREMA) was formed on October 1, 1997, as the result of a merger of three engineering support associations, namely the American Railway Bridge and Building Association, the American Railway Engineering Association and the Roadmasters and Maintenance-of-Way Association, along with functions of the Communications and Signal Division of the Association of American Railroads (AREMA, 2009). The AREMA Manual for Railway Engineering is an annually updated publication that explains the development and advancement of both technical and practical knowledge and recommended practices pertaining to the design, construction and maintenance of railway infrastructure.



LEGEND

PVL ALIGNMENT

CONNECTING TRACK

EXISTING STATION

PROPOSED STATION

Symbol	Geologic Unit	Description
	Kbfg	Monzogranite of Burnt Flats; San Bernardino Mountains
	Kbg	Box Springs plutonic complex. Subunit: Porphyritic granodiorite; Peninsular Range
	Kbhg	Box Springs plutonic complex. Subunit: Heterogeneous porphyritic granodiorite; Peninsular Ranges
	Kbt	Box Springs plutonic complex. Subunit: Biotite tonalite; Peninsular Ranges
	Khg	Heterogeneous granitic rocks; Peninsular Ranges
	Klmt	Lakeview Mountains pluton. Subunit: Tonalite; Peninsular Ranges
	Kqd	Quartz diorite, undifferentiated; Peninsular Ranges
	Kt	Tonalite, undifferentiated; Peninsular Range
	Kvt	Val Verde Pluton. Subunit: Val Verde tonalite; Peninsular Range.
	Qaf	Artificial Fill Soil
	Qof	Old alluvial-fan deposits
	Qof1	Old alluvial-fan deposits, Unit 1
	Qof3	Old alluvial-fan deposits, unit 3
	Qv	Very young alluvial-valley deposits
	Qvoa	Very old axial-channel deposits
	Qvof	Very old alluvial-fan deposits
	Qya	Young axial-channel deposits
	Qyf	Young alluvial-fan deposits
	Qyf1	Young alluvial-fan deposits, Unit 1
	Qyv	Young alluvial-valley deposits
	Trmq	Rocks of Menifee Valley. Subunit: Quartz-rich-rocks; Peninsular Ranges
	Trms	Rocks of Menifee Valley. Subunit: Schist; Peninsular Ranges

PROJECT NO.	92666	PVL CORRIDOR GEOLOGY	FIGURE
DRAWN:	1/5/10		3.15-1
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666geoEA.MXD			

The Federal Water Pollution Control Act

The Federal Water Pollution Control Act of 1972, commonly referred to as the CWA following amendment in 1977, establishes requirements for discharges of stormwater or wastewater from any point source that would affect the beneficial uses of waters of the United States (USEPA, 2009). The SWRCB adopted one statewide NPDES General Permit that would apply to stormwater discharges associated with construction, industrial, and municipal activities. Regional Water Quality Control Board (RWQCB) is the administering agency for the NPDES permit program. The CWA's primary effect on adjacent agriculture areas and soils within the PVL corridor consists of control of soil erosion and sedimentation during construction, including the preparation and execution of erosion and sedimentation control plans and measures for any soil disturbance during construction (SWRCB, 2009).

State Policies and Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (A-PA) was enacted in 1975 and amended in 1993. The intent of the A-PA was to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. The A-PA only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. Further, it is the intent of the A-PA to provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes (California Geological Survey (California Geological Survey [CGS], 2003).

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was enacted by the California legislature in April 1997, primarily as a result of the Northridge earthquake of 1994. The Seismic Hazard Mapping Act requires the creation and publication of maps showing areas where earthquake induced liquefaction or landslides could occur (CGS, 2003). If a property is located in a Seismic Hazard Zone as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers (CGS, 2007).

Disaster Recovery Reconstruction Act

The Disaster Recovery Reconstruction Act of 1986 authorizes local governments to prepare for expeditious and orderly recovery before a disaster and reconstruction afterward. It enables localities to prepare pre-disaster plans and ordinances that may include: an evaluation of the vulnerability of specific areas to damage from a potential disaster; streamlined procedures for appropriate modification of existing General Plans or zoning ordinances affecting vulnerable areas; a contingency plan of action; organization for post-disaster, short-term and long-term recovery and reconstruction; and a pre-disaster ordinance to provide adequate local authorization for post-disaster activities (CGC, 1986).

California Building Code

The California Building Standards Commission approved a series of amendments to the UBC, which was published in 1998, and known as the CBC. This is the Building Code used throughout California. Local codes are permitted to be more restrictive than the CBC, but are required to be no less restrictive (Fennie, 2005).

Local Policies and Regulations

Riverside County Building and Fire Codes

The Riverside County Department of Building and Safety reviews and enforces the Building and Fire Codes. These codes establish site-specific investigation requirements, construction standards, and inspection procedures so that development does not pose a threat to the health, safety, and welfare of the public. Every three years, the County's Building and Fire Codes are adapted from the Uniform Building and Fire Codes. The Uniform Building and Fire Codes contain minimum baseline standards to guard against unsafe development (Riverside County, 2003).

Riverside Municipal Code (Title 14, §14.08.030)

The Riverside Municipal Code Title 14, §14.08.030 states all homes and any other structures must be properly connected to a public sewer whenever the property abuts upon a ROW in which there exists a public sewer to which connection may be made (City of Riverside, 2007).

Ordinance 1253 (City of Perris)

This Ordinance, added to the Perris Municipal Code in March 2009, has adopted Chapter 7 of the CBC and relates to fire protection building standards and the adoption of a Fire Hazard Severity Zone Map (City of Perris, 2009).

City of Riverside General Plan Public Safety Element (Seismicity and Faulting)

Policy PS-1.2, part of the City of Riverside General Plan, was written to physically locate public facilities of City importance outside of geologically hazardous areas (City of Riverside, 2007).

County of Riverside General Plan Public Safety Element (Hazard Reduction)

A Hazard Reduction Program has been written within the Safety Element of the County of Riverside General Plan. Hazard reduction programs are designed to improve the safety of existing development. For example, older structures, built to before Code standards, may need seismic upgrading. Other examples of the Program include strengthening pipelines and developing emergency back-up capability by public utilities serving the County; conducting regular fire safety inspections and fire flow tests to identify areas with cracked or damaged water lines; encouraging the construction of auxiliary water systems to supplement existing water lines; planning for emergency response at the government and individual level to reduce the risk to the public from hazards; and identifying unsafe structures and posting public notices.

Several policies pertaining to landslides, subsidence, expansive and collapsible soils are included in the Riverside County General Plan Public Safety element as noted below (Riverside County, 2003):

Landslide Potential

Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project's ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.

Subsidence, Expansive, and Collapsible Soils

S 3.8: Require geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence. Within the documented subsidence zones of the Coachella, San Jacinto, and Elsinore valleys, the studies must address the potential for reactivation of these zones, consider the potential impact on the project, and provide acceptable mitigation measures.

3.15.2 Affected Environment

Soils

Soil survey mapping units characterizing the types and distribution of soils within the PVL corridor are taken from the Soil Survey of Western Riverside Area, California (NRCS, 1971). Detailed soil descriptions were developed from the soil survey publications (NRCS, 1971 and National Cooperative Soil Survey [NCSS], 2008) and from the Official Soil Descriptions (OSD) (NRCS, 2008). Specific site soils and their characteristics are noted below and in Table 3.15-1. Site soils within the PVL corridor and adjacent properties have been mapped on Figure 3.15-2.

Citrus Connection

Two soil mapping units are present within the Citrus Connection of the PVL corridor, (HcC) Hanford Coarse Sandy Loam and (TeG) Terrace Escarpments. HcC (2 to 8 percent slope) is prime farmland with slow runoff and slight erosion hazard, while TeG (30 to 75 percent slope) presents severe water erosion hazard (Figure 3.15-2).

SJBL Alignment

There are 38 soil mapping units present within the SJBL alignment. The majority (approximately 80 percent) of the soil types are classified as sandy loams, which generally have slow to moderately slow runoff and exhibit slight erosion hazard; however, some hydric soils have formed in local areas due to soil saturation indicating the potential presence of wetland areas. Two soils mapping units with a high susceptibility to erosion, Cieneba rocky sandy loam (CkF2) and Terrace escarpments (TeG) are located within the SJBL alignment. One soil series, willow silty clay (Wf, Wg, Wm, and Wn), found within one mile radius of the San Jacinto River crossing has a high shrink-swell potential (Figure 3.15-2).

Hunter Park Station

There were five soil mapping units present within the Hunter Park area, all loams: Arlington fine sandy loam (AoC), Buren fine sandy loam (BuC2), Cieneba rocky sandy loam (CkF2), Greenfield sandy loam (GyC2), and Hanford coarse sandy loam (HcC). Three soils (AoC, BuC2, and CkF2) present moderate or moderate to severe erosion hazard. All types are two to eight percent slopes, except for CkF2, which is 15 to 30 percent slope and present only at the Hunter Park - Marlborough station option site (Figure 3.15-2).

Moreno Valley/March Field Station

There were four soil mapping units present on the Moreno Valley/March Field Station site, all loams: Cieneba rocky sandy loam (CkF2), which presents a moderate to severe erosion hazard, and Monserate sandy loams (MmB, MmC2, and MmD2), for which erosion hazard is slight. Slopes range from 15 to 30 percent with the Cieneba rocky sandy loam, and are 15 percent or less in the Monserate sandy loams (Figure 3.15-2).

Downtown Perris Station

Exeter very fine sandy loam (EwB) was the only soil mapping unit present on the Downtown Perris Station site. Characteristics of this soil mapping unit are described as a slight to moderate erosion hazard with very slow to moderate runoff and 0 to 2 percent slopes.

South Perris Station

The three soil mapping units present on the South Perris Station site are all Willows silty clays (Wg, Wm, and Wn). While water erosion hazard is slight, these poorly to very poorly drained soils have high shrink-swell potential (Figure 3.15-2).

Layover Facility

There were two soil mapping units present on the Layover Facility site, both loams, are Exeter very fine sandy loam (EwB) and Madera fine sandy loam (MaA). Both present slight to moderate erosion hazard. EwB exhibits very slow to moderate runoff, and MaA, which exhibits slow to moderate runoff, is an NRCS classified hydric soil (Figure 3.15-2).

<u>Hazards</u>

A geologic hazard is one of several types of adverse geologic conditions capable of causing damage or loss of property and life. These hazards can consist of sudden or slow phenomena, which are discussed in detail below:

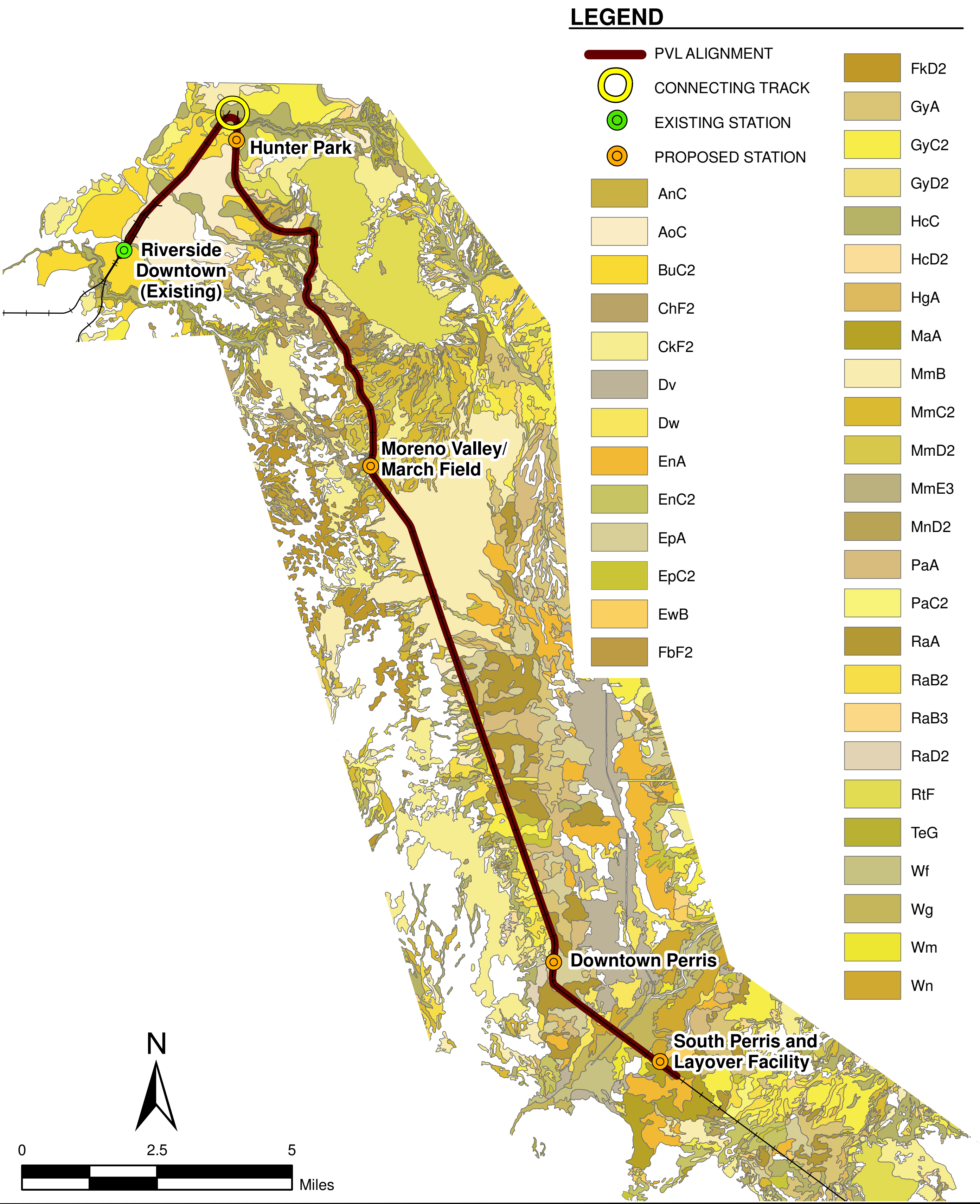
Regional Faulting and Seismicity

The PVL corridor is located in the highly seismic southern California region within the influence of several fault systems that are considered to be active or potentially active. The terms “sufficiently active” and “well-defined” are used by the CGS as criteria for categorizing faults under the Alquist-Priolo Earthquake Fault Act. A “sufficiently active” fault is one that shows evidence of Holocene surface displacement along one or more of its segments and branches, while a “well-defined fault” is a fault whose trace is clearly detectable by a trained geologist as a physical feature at, or just below, the ground surface. The definition “inactive” generally implies that a fault has not been active since the beginning of the Pleistocene Epoch (older than 1.7 million years old). Locations of the officially delineated active and potentially active faults are shown on Figure 3.15-3.

Table 3.15-1
SJBL Alignment Soil Mapping Units
Soil Survey of Western Riverside Area California (Natural Resource Conservation Service (NRCS), 2008)

Map Unit Symbol	Map Unit Name
AnC	Arlington fine sandy loam, 2 to 8 percent slopes
AoC	Arlington fine sandy loam, deep, 2 to 8 percent slopes (H)
BuC2	Buren fine sandy loam, deep, 2 to 8 percent slopes (H)
ChF2	Cieneba sandy loam, 15 to 50 percent slopes, eroded
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes eroded (H,M)
Dv	Domino silt loam, saline-alkali, hydric
Dw	Domino silt loam, strongly saline-alkali, hydric
EnA	Exeter sandy loam, 0 to 2 percent slopes
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded
EpA	Exeter sandy loam, deep, 0 to 2 percent slopes
EpC2	Exeter sandy loam, deep, 2 to 8 percent slopes, eroded (D)
EwB	Exeter very fine sandy loam, 0 to 5 percent slopes (H)
FbF2	Fallbrook fine sandy loam, shallow, 15 to 35 percent slopes, eroded
FkD2	Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded
GyA	Greenfield sandy loam, 2 to 8 percent slopes
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded (H)
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes (C)
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
HgA	Hanford fine sandy loam, 0 to 2 percent slopes
MaA	Madera fine sandy loam, 0 to 2 percent slopes, hydric (L)
MmB	Monserate sandy loam, 0 to 5 percent slopes (M)
MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded (M)
MmD2	Monserate sandy loam, 8 to 15 percent slopes, eroded (M)
MmE3	Monserate sandy loam, 15 to 25 slopes, severely eroded
MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded
PaA	Pachappa fine sandy loam, 0 to 2 percent slopes
PaC2	Pachappa fine sandy loam, 2 to 8 percent slopes, eroded
RaA	Ramona sandy loam, 0 to 2 percent slopes
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded
RaB3	Ramona sandy loam, 0 to 5 percent slopes, severely eroded
RaD2	Ramona sandy loam, 8 to 15 percent slopes, eroded
RtF	Rockland
TeG	Terrace escarpments (C)
Wf	Willows silty clay
Wg	Willows silty clay, saline-alkali (S)
Wm	Willows silty clay, deep, saline-alkali (S)
Wn	Willows silty clay, deep, strongly saline-alkali (S)
Notes: All soils are found throughout the corridor along the SJBL alignment, except where indicated by an asterisk; such soils are found only at the indicated locations; Hunter Park Station options (H), Downtown Perris Station (D), Moreno Valley/March Field Station (M), South Perris Station (S), Layover Facility (L), and the Citrus Connection (C).	

This Page Intentionally Left Blank



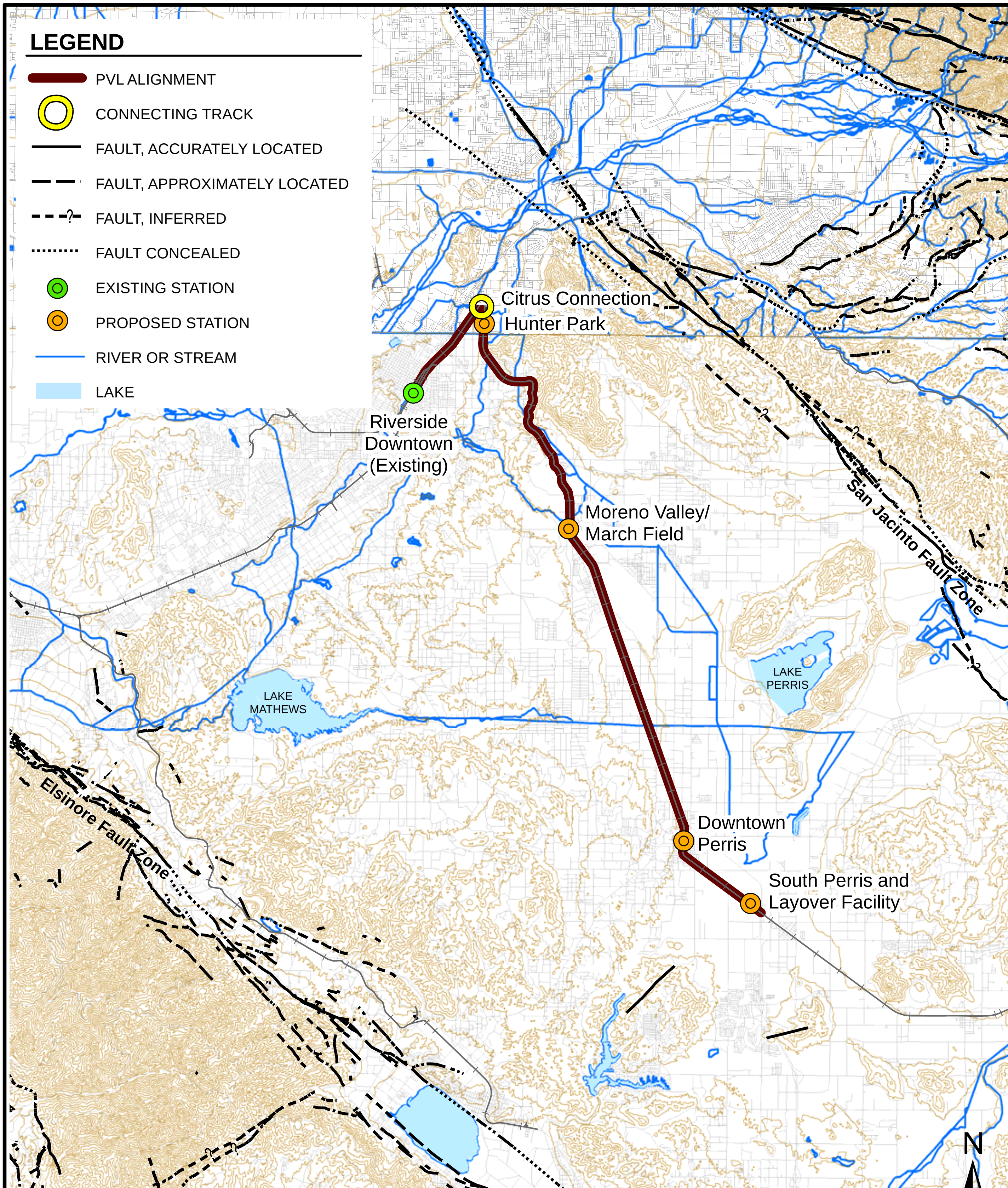
PROJECT NO.	92666
DRAWN:	1/14/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666usda_EA.MXD

PVL CORRIDOR SOILS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.15-2



SOURCE: U.S. Geological Survey, California Geological Survey
U.S. Geological Survey Open-File Report: OFR 2005-1305; version 1.0

RCTC

KLEINFELDER

PROJECT NO.	92666
DRAWN:	1/5/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME:	92666faults.MXD

REGIONAL FAULTS

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.15-3

Two of California's most active faults, the San Andreas and the San Jacinto faults, traverse Riverside County. Both of these faults, as well as the Elsinore fault zone, have the potential to generate future earthquakes within Riverside County and the PVL corridor. The seismic hazards that have the greatest potential to severely affect Riverside County are seismic ground shaking, liquefaction, and surface fault rupture. Secondary hazards such as seismically induced settlement, seismically induced slope instability, and (non-damaging) seiches may also occur as the result of a significant seismic event (Riverside County, 2003). A summary of significant faults is presented in Table 3.15-2.

Table 3.15-2
Summary of Significant Faults

Fault Name	Approximate Fault Length (Miles)	Approximate Distance to Sites (Miles)	Magnitude of Maximum Earthquake*	Slip Rate (in/yr)	Average Recurrence Interval (years)
San Jacinto-San Jacinto Valley Segment	27	11	6.9	0.47	83
Elsinore-Temecula Segment	27	12	6.8	0.20	240
Elsinore-Glen Ivy Segment	22	12	6.8	0.20	340
San Jacinto-Anza Segment	57	17	7.2	0.47	250
San Jacinto-San Bernardino Segment	22	17	6.7	0.47	100
Chino-Central Avenue	17	21	6.7	0.04	885
San Andreas-San Bernardino Segment	66	24	7.5	0.95	433
San Andreas-All Southern Segments	317	24	8.1	0.95-1.34	220
Whittier	24	25	6.8	0.10	641
Elsinore-Julian Segment	47	29	7.1	0.20	340
San Joaquin Hills Thrust **	17	29	6.6	0.02	2500

Notes:
* Moment Magnitude is an estimate of an earthquake's size by utilizing rock rigidity, amount of slip, and area of rupture.
** A blind thrust fault.

These active and potentially active faults are capable of producing seismic shaking along the PVL corridor, and it is anticipated that the PVL corridor would periodically experience ground acceleration as the result of moderate to large magnitude earthquakes. The approximate distances to the nearest faults to the PVL corridor considered to have the greatest impact to the PVL corridor are presented in Table 3.15-3.

Table 3.15-3
Approximate Distance to Nearest Faults (Miles)

PVL Corridor Site (Approximate Station Nos.)	Approx. Distance to San Jacinto Fault Zone (miles)	Approx. Distance to San Andreas Fault Zone (miles)	Approx. Distance to Elsinore Fault Line, Glen Ivy Section (miles)
Citrus Connection	4.1 northeast	11.3 northeast	18.0 southwest
SJBL Alignment – North End	4.3 northeast	11.5 northeast	18.2 southwest
SJBL Alignment – South End	9.9 northeast	22.0 northeast	9.8 southwest
Palmyrita Option	4.3 northeast	12.8 northeast	18.2 southwest
Columbia Option	4.3 northeast	12.8 northeast	18.2 southwest
Marlborough Option	4.7 northeast	13.3 northeast	18.0 southwest
Moreno Valley/March Field Station	7.0 northeast	17.3 northeast	16.5 southwest
Downtown Perris Station	11.6 northeast	21.0 northeast	10.1 southwest
South Perris Station	11.5 northeast	21.0 northeast	10.1 southwest
Layover Facility	11.5 northeast	21.0 northeast	10.1 southwest
Source: Kleinfelder (2009)			

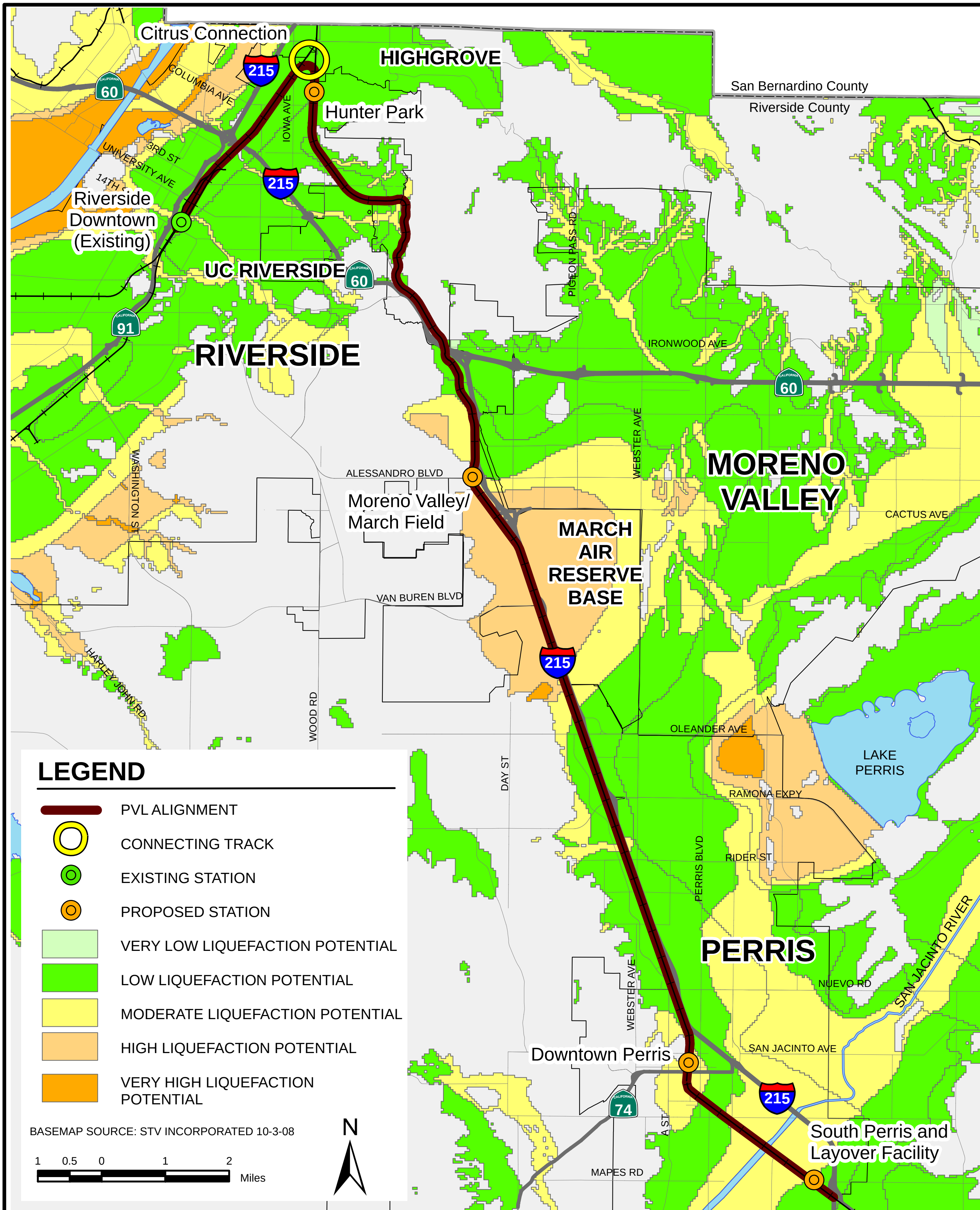
An east-striking potentially active fault splay, a series of minor faults at the extremities of an associated major fault (Ailsa et al., 1999), of the Elsinore fault, the Murrieta Hot Springs fault, is located approximately 14.3 miles south of the South Perris Station site (Riverside County, 2003).

Liquefaction and Seismically Induced Settlement Potential

Liquefaction and seismically induced settlement potential refer to another type of geologic hazard, in which loose sand and silt that is saturated with water and behaves like a liquid when shaken by an earthquake.

Seismically induced soil liquefaction generally occurs in loose, saturated, cohesionless soil when pore pressures within the soil increase during ground shaking. The increase in pore pressure transforms the soil from a solid to a semi-liquid state. The primary factors affecting the liquefaction potential of a soil deposit are: 1) intensity and duration of earthquake shaking, 2) soil type and relative density, 3) overburden pressures, and 4) depth to groundwater.

Soils most susceptible to liquefaction are clean, loose, uniformly graded, fine-grained sands, and non-plastic silts that are saturated. Silty sands have also been shown to be susceptible to liquefaction. According to the Riverside County General Plan, the potential for liquefaction has been mapped as shown on Figure 3.15-4. Areas particularly susceptible include the vicinity of the MARB and proposed March Field/Moreno Valley Station.



PROJECT NO.	92666	LIQUEFACTION POTENTIAL	FIGURE
DRAWN:	1/5/10		3.15-4
DRAWN BY:	JP		
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666LIQ.MXD			

Landslides, Rockslides and Debris Flow

Landslides, rockslides, and debris flow constitute another category of geologic hazard. Landslide refers to the lateral displacement of earth materials on a slope or hillside; while rockslide refers to a geological phenomenon which includes a wide range of ground movement, such as rock falls, deep failure of slopes and shallow debris flows. Landslides commonly occur in connection with other major natural disasters such as earthquakes, volcanoes, wildfires, and floods. Steep, bare slopes; clay-rich rock; deposits of stream or river sediment; and heavy rains can also cause landslides (Kleinfelder, 2008).

The annual precipitation in western Riverside County is low, about 15 inches per year, which is one component generally associated with low risk of debris flow disaster. The PVL corridor, because of the low annual precipitation, limited presence of clay soils, and relatively level topography, is at a low risk overall for landslides (RCIP, 2003).

Subsidence

Ground subsidence results from fluid (e.g. groundwater, petroleum) withdrawal in weakly consolidated materials. The loss of fluid causes consolidation of the empty pore spaces, which means that any voids in the soil previously filled with fluid are compressed by the mass of the overlying materials, effectively decreasing the soil volume and resulting in land subsidence.

The PVL corridor is susceptible to subsidence; according to the County of Riverside General Plan, special circumstances for mitigation are only given to areas of documented subsidence (Riverside County Land, 2003).

Expansive Soils

Certain soils, known as “expansive soils,” are subject to changes in volume and settlement in response to wetting and drying, often resulting in severe damage to structures. Expansive soils have a significant amount of clay particles which can exude water (shrink) or absorb and hold water (swell). The resultant changes in soil volumes exert stress on buildings and other loads placed on these soils. The distribution of expansive soils may be widely dispersed, and they may be present on hillsides as well as in low-lying alluvial basins (RCIP, 2003).

Based on published soil survey soil descriptions, one soil series, Willow silty clay (Wf, Wg, Wm, and Wn), is characterized as having a high shrink-swell potential. The Willow soil series is present on the SJBL alignment in an area within one-mile of the San Jacinto River crossing, in either direction (NRCS, 1971, NCSS, 2008, and NRCS, 2008) (Figure 3.15-2).

Corrosive Soils

Corrosivity of soils is related to several key parameters: soil resistivity, presence of chlorides and sulfates, oxygen content, and pH. Typically, the most corrosive soils are those with the lowest pH and highest concentration of chlorides and sulfates. High sulfate soils are corrosive to concrete and may prevent complete curing reducing its strength considerably. Low pH and/or low resistivity soils could corrode buried or partially buried metal structures.

3.15.3 Environmental Consequences/Impacts

Potential impacts of the proposed PVL, related to geologic, seismic, and soils hazards are as follows:

Fault Rupture

According to the 2007 Interim Revision to the Alquist-Priolo Earthquake Fault Zoning Map (CGS, 2007), western Riverside County is a seismically active region. The project boundaries themselves are not within the Alquist-Priolo Zone. The northern portion of the PVL corridor is located approximately 6 miles southwest of the San Jacinto fault zone, while the southern portion of the corridor is located approximately 15 miles northeast of the Elsinore fault zone. Because no known faults intersect the existing rail corridor, implementation of the PVL commuter rail service would not expose people or structures to adverse effects related to surface fault rupture. Therefore, there would be no impacts from a known earthquake fault.

Seismic Shaking

The PVL corridor is located within the seismically active southern California region. Project elements including track, bridges, and stations would be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods per the CBC, the National Engineering Handbook, current AREMA guidance documents, and existing SCRRA standards. Therefore, there would be no impacts from seismic shaking.

Landslides

The Safety Element of the Riverside County General Plan indicates that the northern portion of the PVL corridor adjacent to the Box Springs Mountain Reserve is highly susceptible to seismically induced landslides (Riverside County, 2003). Limited track work relating to construction is proposed for this area; therefore, there would be less than significant impacts during the construction of the PVL. Moreover, while the steep terrain around Box Springs may be subject to rock fall, igneous tonolite and granodiorite bedrock generally is not susceptible to landslides. Therefore, the PVL corridor is considered to have a low landslide potential (Kleinfelder, 2009). Engineering and design would comply with CBC, Riverside County Building and Safety Department Code, the National Engineering Handbook, AREMA guidance documents, and SCRRA standards. Because of engineering recommendations before and during construction, there would be no impacts during the operations and maintenance of this within the PVL corridor.

Liquefaction and Seismically Induced Settlement Potential

Although portions of the rail corridor are in areas subject to potential for liquefaction~~ification~~, there is generally a low potential for liquefaction along the PVL corridor (Figure 3.15-4). Engineering and design would account for liquefaction potentially affecting structural elements such as bridges, stations, and the Layover Facility.

Subsidence

Although the entire PVL corridor is susceptible to subsidence, the proposed Layover Facility and stations are most susceptible. Subsidence-related impacts could affect buildings at these locations, though subsidence would not affect the health and safety of the general public or railroad workers during operation and maintenance of the PVL. Engineering design will address any potential subsidence along the project corridor.

Expansive Soils and Corrosive Soils

Expansive soils (Willow series) are present along the SJBL alignment in the area around both San Jacinto River bridges and South Perris Station (Figure 3.15-2). Changes in soil volumes due to shrink-swell potential could result in adverse impacts to buildings at these locations, but would not affect the health and safety of the general public or railroad workers during operation and maintenance of the PVL. Engineering design will address any potential expansive soil areas; therefore, no impact is anticipated from expansive soils.

Soils with a moderate to high corrosion potential are present around the Hunter Park station options and South Perris Station (Figure 3.15-2). These soils have the potential to corrode concrete and steel. Soil corrosion shall be incorporated into final engineering design, based on site-specific testing around the selected Hunter Park station option and South Perris Station. Corrosive soils would not affect the health and safety of the general public or railroad workers during operation and maintenance of the PVL.

Potential for Soil Erosion

Because the PVL commuter rail service would be implemented within an existing railroad corridor and adjacent properties, earth moving activities would be limited to the construction of the proposed stations and associated parking lots, communication equipment shelters and towers, and Layover Facility. Site preparation and excavation activities associated with construction of the new facilities may result in soil erosion or the loss of topsoil because of local precipitation and runoff.

3.15.4 Mitigation Measures

Engineering design will address site specific conditions and therefore no mitigation measures are identified related to geology and soils.

This Page Intentionally Left Blank

3.16 WATER QUALITY

Water quality is the physical, chemical, and biological characteristics of water. Changes to water quality can result from flowing through developed areas, soil, or rock material. The effects can be identified in both surface water and/or groundwater depending on local surface topography as well as subsurface soil types. The general surface and groundwater conditions were evaluated and identified with Water Quality Control Plans for each area within the State of California. This section describes the existing water quality, the beneficial uses of the region's surface and groundwater, local water-quality conditions and problems, and compares them to the proposed project to evaluate whether the project would have impact on existing conditions within the project area.

3.16.1 Regulatory Setting

Federal Policies and Regulations

Water Pollution Control Act

The federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) was amended in 1972 to prohibit discharge of any pollutant into waters of the United States unless the discharge is authorized by a NPDES permit. Originally, the NPDES permit focused on reducing pollutants from discharges from industrial process wastewater and municipal sewage treatment plants. In 1987, the CWA was amended to require the USEPA to regulate stormwater discharges through the use of the NPDES stormwater permits. In California, the USEPA has delegated authority of NPDES permits to the SWRCB. The SWRCB and nine RWQCBs carry out regulations, protection, and administration of water quality. Each RWQCB is required to develop and update a Water Quality Control Plan, also known as a Basin Plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. The project area is located within Region 8, the Santa Ana RWQCB.

State Policies and Regulations

Water Quality Control Plan

Beneficial Uses

Beneficial Uses are defined, within the Basin Plan, as the uses of water necessary for the survival or well-being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of man.

Section 303 of the CWA defines the term water quality standards as both the uses of the surface water and the water quality criteria which are applied to protect those uses. A water quality standard defines the water quality goals of a water body by setting criteria to protect uses, and by protecting water quality through anti-degradation provisions. Under the Porter-Cologne Water Quality Act (California Water Code, Division 7, Chapter 2, Section 13050), these concepts are defined separately as beneficial uses and water quality objectives. Beneficial uses and water quality objectives are required to be established for all water in the state, both surface and groundwater. The following beneficial uses, as defined statewide, are designated within the Santa Ana Region and are shown in Table 3.16-1 and Table 3.16-2.

- Municipal and Domestic Supply (MUN) – for community, military, or individual water supply systems including, but not limited to drinking water supply,
- Agricultural Supply (AGR) – for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing,
- Industrial Process Supply (PROC) – for industrial activities that depend on primarily on water supply,
- Industrial Service Supply (IND) – for industrial activities that do not depend primarily on water quality, including by not limited to mining, cooling water supply, hydraulic conveyance, gravel mining, fire protection, or oil well re-pressurization.
- Groundwater Recharge (GWR) – for natural and artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of salt water intrusion into freshwater aquifers.
- Water Contact Recreation (REC-1) – for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses may include, but not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, whitewater activities, fishing and use of natural hot springs.
- Non-contact Recreation (REC-2) – for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.
- Warm Freshwater Habitat (WARM) – supports warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife including invertebrates.
- Wildlife Habitat (WILD) – supports wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
- Spawning, Reproduction, and/or Early Development (SPWN) – supports high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish (e.g., those fish that transition between saltwater and freshwater conditions).

Table 3.16-1
Surface Water Beneficial Uses within the Project Area

Basin	Hydrologic Unit	Beneficial Use							
		MUN	AGR	GWR	REC-1	REC-2	WARM	WILD	SPWN
Upper Santa River Basin									
Santa Ana River									
Reach 4 - Mission Blvd. in Riverside to San Jacinto Fault in San Bern.	801.27	*			X	X	X	X	X
San Jacinto River Basin									
San Jacinto River									
Reach 3 - Canyon Lake to Nuevo Road	802.11	*	I	I	I	I	I	I	

Notes:
I Intermittent Beneficial Use
* Excerpted from MUN

Table 3.16-2
Groundwater Beneficial Uses within the Project Area

Basin	Hydrologic Unit	Beneficial Use			
		MUN	AGR	IND	PROC
Middle Santa River Basin					
Riverside - E	801.27	X	X	X	X
Riverside - F	801.27	X	X	X	X
San Jacinto River Basin					
Perris North	802.11	X	X	X	X
Perris South	802.11	X	X	X	X

Water Quality Objectives

Water quality objectives are necessary to protect designated uses. The water quality objectives must protect the most sensitive of the beneficial uses which have been designated for a water body. The designation of water quality objectives must satisfy all of the applicable requirements of the California Water Code, Division 7 (Porter-Cologne Act) and the CWA. The CWA Section 303 requires the state adopt water quality objectives for surface waters.

Through water quality objectives, the RWQCB provides for the reasonable protection of all beneficial uses which are designated for protection, taking into account existing water quality, environmental and economic considerations. These objectives set limits on the chemical constituents of water that should not be exceeded.

Anti-degradation Policy

Santa Ana RWQCB water quality objectives conform to USEPA regulations covering anti-degradation (40 CFR 131.12) and State Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. Applications for the anti-degradation provisions to the standard process requires supporting documentation and appropriate findings whenever a standard (water quality objective or beneficial use) is made less restrictive to accommodate the discharge of pollutants or other activities of man.

Resolution No. 68-16 establishes a general principle of non-degradation, with flexibility to allow some changes in water quality which is in the best interests of the state. Changes in water quality are allowed only where it is in the public interest and beneficial uses are not unreasonably affected. The terms and conditions of Resolution No. 68-16 serve as the general narrative water quality objective in all state water quality control plans.

The main objective of the anti-degradation policy is "Wherever the existing water quality of water is better than the quality of water established herein as objectives, such existing quality shall be maintained unless otherwise provided by the provisions of the SWRCB Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", including any revisions thereto, or the Federal Anti-degradation Policy, 40 CFR 131.12 (for surface waters).

Construction General Permit

For projects that anticipate disturbing one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity, the CGP (SWRCB, 2009). Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The CGP requires the development and implementation of a site specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list BMPs the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the CGP describes the elements that must be contained in a SWPPP. It should be noted that the state has revised the CGP (2009-0009-DWQ). The new permit will be in place on July 1, 2010, prior to project construction starting, therefore the project will need to comply with the most current permit requirements.

Local Policies and Regulations

Riverside County Municipal Stormwater NPDES Permit

In 2000, the RCFCWCD agreed to the role of "Principal Permitee" for NPDES permit no. CAS 618033, (RWQCB Order No. R8-2002-0011). Co-Permitees for this permit include the county of Riverside, and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto. The current NPDES permit applies to the entirety of Riverside County, and is primarily concerned with urban stormwater runoff. The NPDES permits for urban stormwater, or municipal separate storm sewer systems (MS4), require controls to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP).

Section 13225 of the California Water Code identifies the RWQCB as the enforcement authority for NPDES permits, including the Construction Activity Storm Water Permit. However, in many areas, the construction sites discharge directly into MS4s owned and operated by the Co-Permitees. Therefore it is the responsibility of each Co-Permitee to manage urban runoff within their respective jurisdictions. The urban runoff may contain elevated levels of pathogens, sediment, trash, fertilizers, pesticides, and petroleum products. The MS4 system can carry these pollutants into receiving areas which may then impact the beneficial uses of the receiving waters.

In order to effectively manage stormwater to the MEP, the Co-Permitees have completed Drainage Area Management Plans (DAMP). Each DAMP outlines the major programs and policies for controlling pollutants and is anticipated to be dynamic documents. Currently, there are five DAMP's that cover the project area. Within these documents are identified the BMPs for existing facilities and new development. Examples of some of the BMPs identified include; straw wattles/fiber rolls, silt fence, and street cleaning.

3.16.2 Affected Environment

The majority of the PVL is an existing rail corridor and, therefore, potential new sources of pollution are limited to construction and operation of the Citrus Connection, station parking lots, and the Layover Facility.

3.16.3 Environmental Consequences/Impacts

This project, as with all new projects, is required to meet state, county and local water quality regulations for stormwater protection with no impacts to beneficial uses or water quality objectives.

Citrus Connection

The Citrus Connection is located within the city of Riverside and would be approximately 2,000 feet of newly constructed railroad track to connect the BNSF to the SJBL. There are no stations, or stopping areas, identified within this section of new track. Since this is a curved section of track, wheel lubricators would be utilized to reduce wheel wear and reduce wheel noise going around the curve. Because the trains would be moving through the area at an estimated 20 to 30 mph, it is not expected that even incidental amounts of gear oil or lubrication would weep onto the tracks. Overall, the operations and maintenance of the Citrus Connection would be the same as SJBL alignment. Therefore, no significant impacts to water quality are anticipated.

SJBL Alignment

The SJBL is an existing 20-mile long rail corridor in which approximately nine miles of new track would be constructed. Along this corridor are drainage structures (culverts) to allow stormwater flow to pass beneath the railroad tracks. The drainage that flows through these culverts flows into the local stormwater drainage systems. These systems eventually lead to either the Santa Ana River or the San Jacinto River depending on the location along the alignment. Along the portion of the alignment where new track is being constructed, the existing culverts are being extended so that the drainage could continue beneath the railroad tracks. Since the culvert extensions are expected to continue to convey the local stormwater flow, there is not expected to be an impact to water quality, or a change in flow patterns, from these culverts.

Additionally, the increase of twelve trains per day would cause minor quantities of oil and lubricants to weep onto the track. It is not anticipated that these quantities are great enough to cause an increase in polluted runoff. Less than significant impacts to water quality are anticipated.

Stations

Stations would include paved parking lots. The stormwater flow from the parking areas would be directed into the local MS4 and would need to comply with the state, county and city stormwater discharge regulations. Less than significant impacts to water quality are anticipated.

Layover Facility

It is expected that up to four trains would be stored at this facility overnight. Drips pans would be installed where engines are spotted, in order to catch any fuel oil, lubrication, or hydraulic fluid drips from engines laid up in the yard. There would be a train inspection pit located under one of the tracks. The pit allows train mechanics to inspect the undercarriage of the train and perform any minor maintenance that may be necessary. The drainage from the drip pans and the inspection pit is directly connected to an oil/water separator system for treatment prior to discharge into the local MS4. The oil/water separator system would be periodically serviced to remove any accumulated waste. Less than significant impacts to water quality are anticipated.

Construction Impacts

For any construction-related activities at the Citrus Connection, station sites, and Layover Facility, RCTC would establish BMPs to control erosion and sedimentation related to construction, and provide for appropriate restoration after construction. The BMPs would be incorporated into construction documents.

3.16.4 Mitigation Measures

The project is required to meet federal, state, county and local stormwater regulations for stormwater protection. Because no impacts are identified, there are no mitigation measures required to lessen any potential impacts to local water quality.

3.17 FLOODPLAINS

The purpose of this section is to evaluate the potential flood risk and impacts of the proposed PVL project, both related to engineered PVL ROW drainage features (i.e., culverts and inlets) and also the natural drainage patterns associated with the San Jacinto River and surrounding area. This section includes a discussion of floodplains in the immediate area of the PVL project and capacity for 100-year events. The information in this section, unless otherwise specified, is based on the *Perris Valley Draft Hydrology Report Volume I* (J.L. Patterson & Associates, Inc., 2009) and the *Perris Valley Draft Hydrology Report Volume II San Jacinto River Analysis* (AECOM, 2009).

3.17.1 Regulatory Setting

Federal Emergency Management Agency

FEMA is an agency of the United States Department of Homeland Security created in 1979 with the primary purpose to coordinate response to disasters that overwhelm the resources of local and state authorities (FEMA, 2009). President Carter's 1979 Executive Order merged various functions of disaster assistance and civil defense (previously handled by multiple agencies) under the direction of a single agency. FEMA was created to coordinate the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror.

National Flood Insurance Program

Flood effects may be localized or very large, affecting neighborhoods and even entire river basins throughout multiple states. The 1968 NFIP is intended to reduce the loss of life, damage to property and rising disaster relief costs in these high-risk areas. The NFIP is managed by FEMA's Federal Insurance and Mitigation Administration and the Mitigation Directorate. The components of the NFIP are floodplain management and flood insurance and hazard mapping, described as follows:

- **Floodplain Management –** The NFIP works to enforce no-build zones in known floodplains and relocate or elevate some at-risk structures. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances. FEMA insists on assurances that local upstream flood repair measures and development within floodplains would not exacerbate flooding in adjacent areas. It guides future development away from flood prone areas and transfers the costs of flood losses from taxpayers to floodplain property owners.

- **Flood Insurance Rate Map –** A Flood Insurance Rate Map (FIRM) map is the official map of a community on which FEMA has identified floodplain boundaries for 100-year and 500-year floodplains, BFEs, floodways, SFHA designations, and flood risk zone divisions. Floodplains are defined as the boundary of the flood that has a particular chance of being equaled or exceeded in a given year. A 100-year floodplain has a one percent chance of being equaled or exceeded in any given year, whereas a 500-year floodplain has a 0.2 percent chance. The BFE is identified on the FIRM map indicating the water surface elevation, or depth, of the base flood and is usually measured in feet. Floodways also appear on FIRMs to show a channel or stream and any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without significantly increasing the water surface elevation by more than a specified amount (generally limited to one foot).

- **Flood Hazard Mapping –** Flood hazard maps create broad-based awareness of the flood hazards and provide the data needed for floodplain management programs and to actuarially rate new construction for flood insurance. SFHAs are areas subject to inundation by a 100-year flood. The SFHAs are identified on the FIRM using flood risk zone designations that indicate the magnitude of the flood hazard and reflect the severity or type of flooding in the area. Moderate- to low-risk areas include zones that are either outside the 100-year flood, areas that have a one percent annual chance where the average flood depth is less than one foot, or where the contributing drainage area is less than one square mile. Zone designations for these areas are defined as Zone B, C, and X and purchasing of flood insurance is not required in these zones. High-risk areas include Zones A, AE, AH, AO, AR, and A99 and for coastal areas Zones V and VE. It is mandatory that flood insurance be purchased within these zones. Flood zone designations are used by local floodplain management programs and the NFIP as the basis for insurance requirements nationwide.

Riverside County Flood Control and Water Conservation District

The RCFCWCD was created in 1945 to protect people, property, and watersheds from damage or destruction from flood and storm waters. The RCFCWCD is designated by FEMA to administer the NFIP program in the western parts of the County where the PVL project is located. The administrator coordinates, implements, and enforces the local floodplain ordinance by granting or denying development permits in accord with its provisions. Any development or encroachments made to the SFHA must be reviewed by the administrator to determine whether proposed building sites would be reasonably safe from flooding and base flood elevations are not raised which would negatively impact adjacent areas. This may include the submittal of studies, calculations, plans and other information required to meet FEMA requirements.

The SJBL crosses five areas subject to RCFCWCD Master Drainage Plans (MDPs); they include the city of Riverside (Box Springs Area), city of Riverside (UCR Area), city of Moreno Valley West End, Perris Valley Area, and Romoland. A MDP addresses the current and future drainage needs for a community. Facilities that are included in a MDP are channels, storm drains, basins, dams, wetlands, levees or any other conveyance capable of relieving flooding problems within the plan area.

RCFCWCD established an independent funding source for flood control projects, which included damming and channel construction, waterway regulation, and public education. When funding becomes available, the RCFCWCD intends to implement flood control measures on the San Jacinto River, which may include channelization between the Ramona Expressway (upstream of the SJBL) and the mouth of Railroad Canyon (downstream of the SJBL). The flood control project may reduce the 100-year flood event peak discharge flow to approximately 6,000 cubic feet per second at the Ramona Expressway, prior to reaching the SJBL (MSHCP, 2003).

The County approved Resolution No. 2005-220 (2005), setting forth policies and procedures to control developments within the San Jacinto River floodway and requiring permits or applicable approvals from the RCFCWCD, USACE, USFWS, CDFG, and the SARWQCB.

No-Rise Determination

The NFIP and participating communities insist that development within floodplains would not exacerbate flooding in adjacent areas. A ‘regulatory floodway’ and the adjacent land areas must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Therefore, the participating communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. Title 44 of the CFR, Section 60.3(d)(3), states:

> *“A community shall prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge" (CFR, 2001).*

Prior to issuing any development permits involving activities in a regulatory floodway, the community must obtain a certification stating the proposed development would not impact the pre-project base flood elevations, regulatory floodway elevations, or regulatory floodway widths. An engineering analysis must be conducted before a permit can be issued. The community's permit file must have a record of the results of this analysis, which can be in the form of a No-Rise Certification, obtained on behalf of RCTC as part of the design process.

General Code of Operating Rules

The General Code of Operating Rules (GCOR) was developed to document standardized operating practices for railroads. GCOR is currently used by the BNSF railroad, and every Class I railroad west of the Mississippi River, most of the Class II railroads, and numerous shortline railroads (U.S. Department of Transportation, 1999). GCOR is essentially a non-regulatory set of rules and guidelines that are in place to enhance railroad safety.

One guideline (6.21.2) addresses flooding along railroads. This guideline states that if rails have been overtopped by flooding, operations must be suspended until the railroad tracks have been inspected and verified as safe (GCOR, 2005).

3.17.2 Affected Environment

The SJBL runs along the western edge of Box Springs Mountain and through Box Springs Canyon. The general drainage flows from east to west out of the Box Springs Mountains. In Box Springs Canyon, the general flow follows the canyon, parallel to the SJBL. The SJBL runs through Perris Valley, where drainage flows out of the hills from west to east across the SJBL, then southwest toward the San Jacinto River. The San Jacinto River flows out from the San Jacinto Mountains, crosses under the alignment at the south end of the Perris Valley and continues to flow down Railroad Canyon, into Canyon Lake, and on to Lake Elsinore.

The Army Corps of Engineers built levees in the city of San Jacinto in the early 1960s. In the 30-mile reach of the river between the city of San Jacinto and Lake Elsinore, only minor channelization exists.

The San Jacinto River watershed upstream of the existing railroad bridges on the SJBL (MP 20.70 and 20.80) covers approximately 518 square miles (AECOM, 2009). Flow rates in the project area are significantly influenced by upstream detention provided by Mystic Lake and the wide flat topography that makes up the Perris Valley. The Perris Valley is extremely flat causing flood waters to move slowly and spread out over a broad area. The expanse of flooding in Perris Valley is further affected by the sudden constriction presented at the entrance to the upper end of Railroad Canyon located southwest of the city of Perris. The restriction of flow and flat topography of the valley causes a ponding situation and flood waters backup for a distance of over seven miles upstream.

Runoff in the upper valley flows to Mystic Lake, a natural sump formed by local subsidence. During large storms when water from the upper San Jacinto River overflows into the depression a lake forms. The lake is relatively shallow and has a large surface area. When full, Mystic Lake has been observed to maintain a substantial amount of volume with little or no transport back to the San Jacinto River. During torrential rainfall events or periods of extended rain, the storage capacity of the lake is exceeded resulting in outflow to the San Jacinto River.

The San Jacinto River flows south through the floodplain and intersects the SJBL at two bridges; the San Jacinto River Bridge and the San Jacinto River Overflow Channel Bridge. In 2005, the SCRRA commissioned a study to assess the existing conditions of the bridges along the alignment. In the report, *Perris Valley Line Existing Conditions Report*, replacement of the two bridges (MP 20.70 and MP 20.80) of the San Jacinto River is recommended (J.L. Patterson & Associates, Inc., 2008). Excerpts from the report describe the existing conditions of the bridges:

> *Currently, the San Jacinto River Bridge (MP 20.70) is a 140-foot long (While the Existing Conditions Report indicated the Bridge 20.7 was 142 feet in length, subsequent field survey performed for the PE confirmed the length to be 140 feet.), ten-panel timber open-deck pile trestle. The overall condition of this bridge was rated as poor. The bents consist of six-timber piles supporting a timber cap. The chords consist of stringers supporting hardwood timber ties. The overall condition of the chords and deck ties was rated as fair. The clear distance from the soffit of the bridge to the ground line, at the center of the channel, is 8.5 feet, with sloping berms at the end panels.*
>
> *San Jacinto Overflow Channel Bridge (MP 20.80) is a 56-foot long, 4-panel timber open deck trestle crossing an overflow channel for the San Jacinto River. This bridge appears to be of newer construction than the river bridge and the overall condition was rated as fair. The bents consist of six timber piles, supporting a timber cap, and the chords consist of timber stringers, supporting hardwood timber ties. The overall condition of the chords and deck ties was rated as fair. The clear distance from the soffit of the bridge to the ground line is approximately four feet, with sloping berms at the end panels.*

Flood Zone Designations

Ten FIRM panels were evaluated to identify flood designations and floodways including and proximate to the SJBL: 06065C0065G, 06065C0727G, 06065C0731G, 06065C0733G, 06065C0745G, 06065C1410G, 06065C1430G, 06065C1440G, 06065C1445G, and 06065C2060G. The four FIRM panels showing 100-year SFHAs are shown on Figure 3.17-1 and Figure 3.17-2 and are discussed below.

- FIRM Panel 06065C0065G: The area of Springbrook Wash has a 100-year flood Zone A designation. A small portion of the alignment between Spring Street and Citrus Street is within this high flood risk area.

- FIRM Panel 06065C0727G: A portion of the SJBL alignment at Blaine Street, within the UCR area, has a 100-year flood Zone A designation. The floodplain boundary ends at the alignment and is identified east along Blaine Street and curves north at Valencia Hill Drive. Zone A has a high potential for flood risk.

- FIRM Panel 06065C0731G: The University Wash located in Islander Park of the UCR area has a 100-year flood Zone AE designation. The floodplain boundary starts near Linden Street and is identified south to Big Springs Road, and is bounded by the alignment along the eastern boundary. Zone AE is a high risk area with known base flood elevations that range from 1182 to 1154 feet in this area.

- FIRM Panel 06065C1440G: The area adjacent to the west side of the alignment at Metz Road has a 100-year flood Zone A designation. This flood area is located in Metz Park within the city of Perris. Additionally, this panel includes the San Jacinto River and associated floodway. The floodplain boundary for the San Jacinto River includes both 100-year and 500-year flood areas, which include the railroad bridges (MP 20.70 and 20.80). The 500-year flood, which has a 0.2 percent chance of occurring any given year has a flood zone designation of Zone X, which is considered to be a moderate to low risk area. This Zone X is identified adjacent to Metz Park where the alignment intersects Ellis Avenue in Perris. The flood zone designation that crosses the remainder of the alignment to the PVL project termination point at I-215, approximately two miles upstream of the alignment has a 100-year flood Zone A designation. This FIRM Panel indicates that the 100-year BFE for the San Jacinto River at the location of the two bridges is 1,422, about five feet above the existing top of rail (1,417 top of rail elevation) (AECOM, 2009). Both bridges (MP 20.70 and 20.80) are mapped within the 6,600-foot wide floodway. Extending from the floodway is a 12,000-foot-wide floodplain boundary for the 100-year event in Zone AE. (Data provided in the Flood Insurance Study No. 06065CV001A, effective August 8, 2008, indicate that the 100-year peak discharge for the San Jacinto River at I-215 is 44,000 cfs. However, this peak discharge varies based on upstream and downstream locations; the hydraulic model shows an increase in discharge to 44,250 cfs upstream of I-215 and a decrease in discharge to 42,750 cfs downstream of the project, at the entrance to Railroad Canyon [AECOM, 2009]).

Drainage Characteristics

There were 34 culverts analyzed as part of the *Perris Valley Line Draft Hydrology Report Volume I* (J.L. Patterson & Associates, Inc., 2009), twelve culverts were found to be of inadequate capacity to handle flow during 100-year storm events. Modeling reported in a subsequent study, *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis* (AECOM, 2009) predicted that stormwater would overtop (e.g., overflow) railroad bridges and rail in the vicinity of Case Road at a flow rate of 6,000 cubic feet per second (cfs). FEMA indicates that the ten-year flood in this location is 7,000 cfs (by comparison, I-215, in the area upstream of the railroad bridges, begins to overtop at a flow rate of about 9,500 cfs). At the 100-year flow rate, the depth of flow over the existing rail in this location would be 4.9 feet deep.

3.17.3 Environmental Consequences/Impacts

The San Jacinto River Bridge and the San Jacinto Overflow Channel Bridge would be constructed based on SCRAA design standard plans ES 4500-03 for MP 20.70 and ES 4600-02 for MP 20.80. The San Jacinto River Bridge (MP 20.7) is currently 140-feet long, and the replacement would be 156 feet in length. The existing timber trestle bridge has 14-foot spans, the new bridge would be prestressed concrete box girders with 28-foot spans. The total depth of the superstructure (top of rail to low chord [lowest part of bridges]) would increase from the current 2.67 feet to 4.75 feet. By keeping the top of rail consistent, the vertical clearance is reduced from approximately 9.5 feet to 6.8 feet. The San Jacinto Overflow Channel Bridge (MP 20.80) is currently 54 feet long, and the replacement bridge would be 70 feet long. The existing timber trestle bridge has 14-foot spans; the new bridge would use pre-stressed concrete slabs with the same 14-foot spans. As a result, the total depth of the superstructure would increase to 3.16 feet, which would reduce the vertical clearance from 3.6 feet to 3.0 feet for the replacement bridge. Additionally, the increase in the replacement bridge spans for both bridges would offset lost conveyance associated with the lower chord of the bridges. In addition to the bridge replacements, culverts would be replaced as part of the PVL project; these new culverts would maintain existing capacity, and would result in no impacts to floodplains.

Based on a review of the above identified FIRM panels, the southern portion of the SJBL is within a regulatory floodway with SFHA designation; the proposed South Perris Station and Layover Facility would be within the 100-year floodplain boundary. The PVL project, however, would not include elevating the top of rail, station platform and features (ticket kiosks and vending machines), station parking lot, or most of the Layover Facility to be above the BFE. The only element that would be constructed above the BFE is the office building at the Layover Facility, which would be elevated six feet above the BFE.

Based on the hydraulic analysis presented in the *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis* report, it is expected that the bridges, rail alignment, station platform, station parking lot, and Layover Facility could be submerged as much as five feet during the 100-year flood (AECOM, 2009). During a 100-year flood (42,750 cfs) the depth over the top of PVL rail in the vicinity of the bridges would be 5.20 feet, 11,975 feet wide and flowing at a velocity less than one fps, compared to a flow rate of 6,000 cfs under existing conditions. However, the flood potential risk within the county of Riverside, specifically in regards to the PVL corridor, has been minimal as a result of low average annual rainfall (2.15 inches to 7.35 inches in Riverside County from 2005 to 2009) (Weather Currents, 2009).

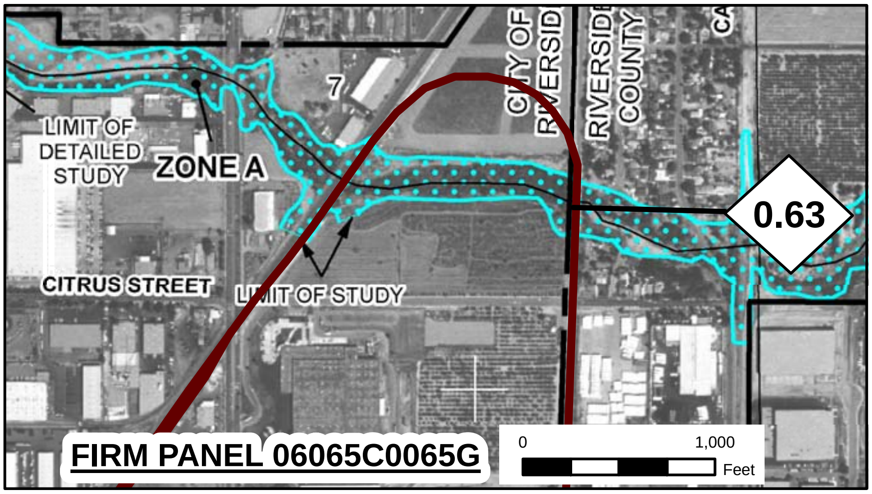
Project design plans for the replacement of the San Jacinto River Bridge and San Jacinto Overflow Channel Bridge, and the construction of the South Perris Station and Layover Facility, would be in compliance with the NFIP's No-Rise requirements. It is anticipated that a No-Rise

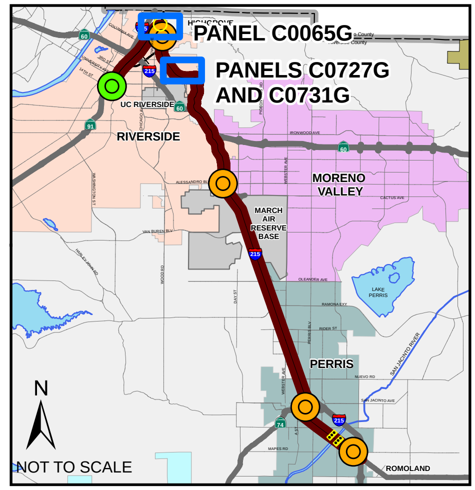
Certification would be obtained for the project through the RCFCWCD. According to the 30 percent engineering plans and the *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis*, the bridge replacement, station, and Layover Facility designs would not result in an impact related to the base flood elevations, regulatory floodway elevations, and floodway widths. The PVL would require permits or applicable approvals from the RCFCWCD, USACE, USFWS, CDFG, and the SARWQCB.

3.17.4 Mitigation Measures

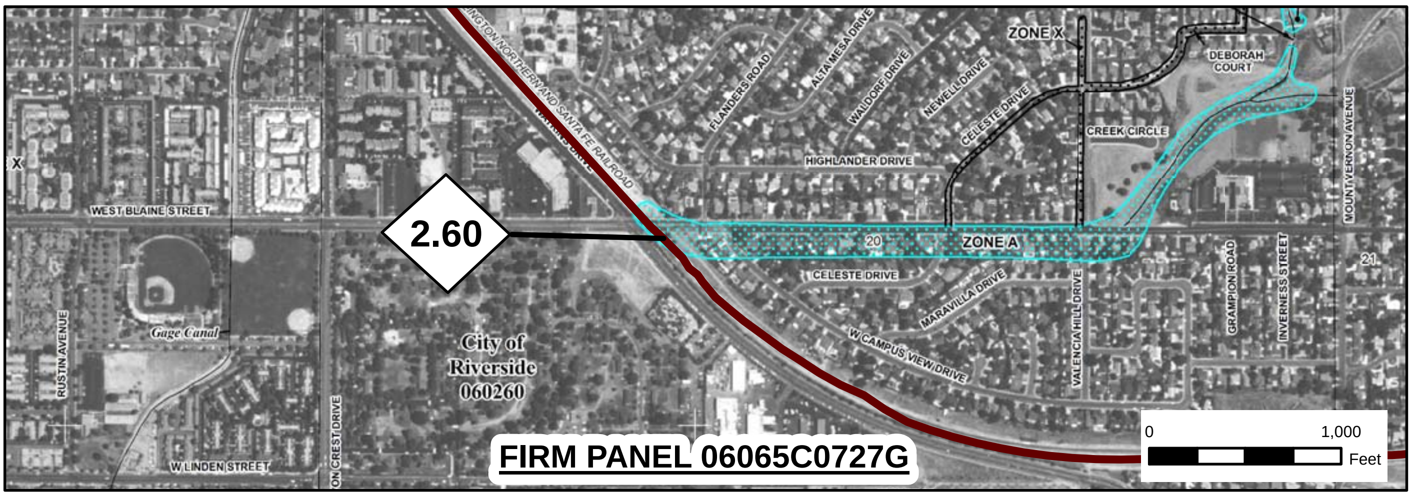
The proposed PVL project will not have a significant impact on floodplains. No mitigation measures are required.

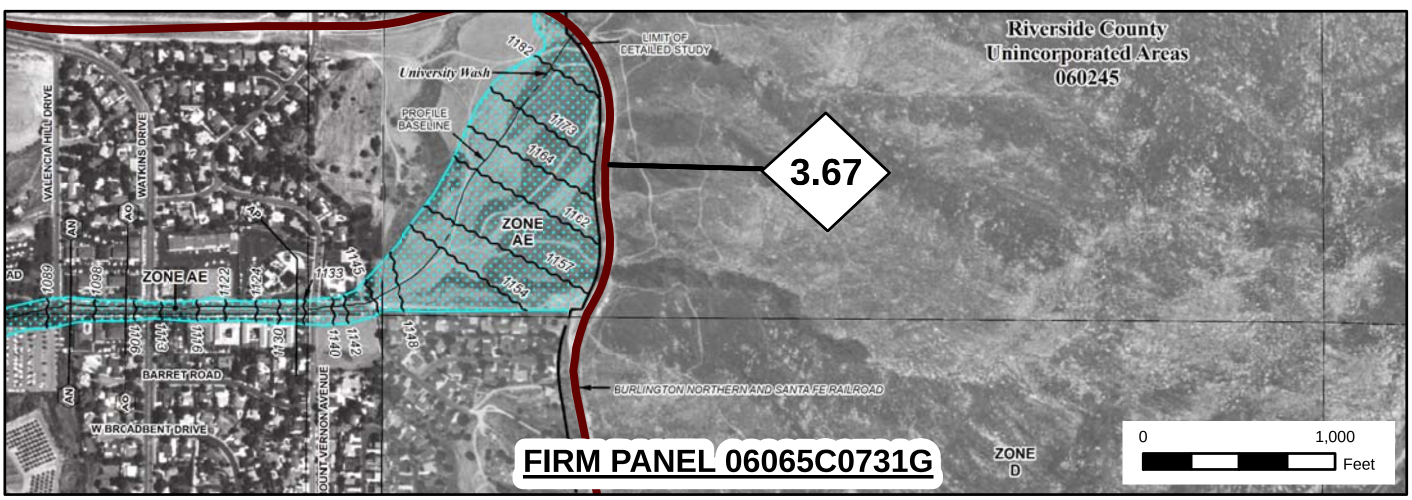
This Page Intentionally Left Blank





KEY MAP





LEGEND

FLOOD ZONE

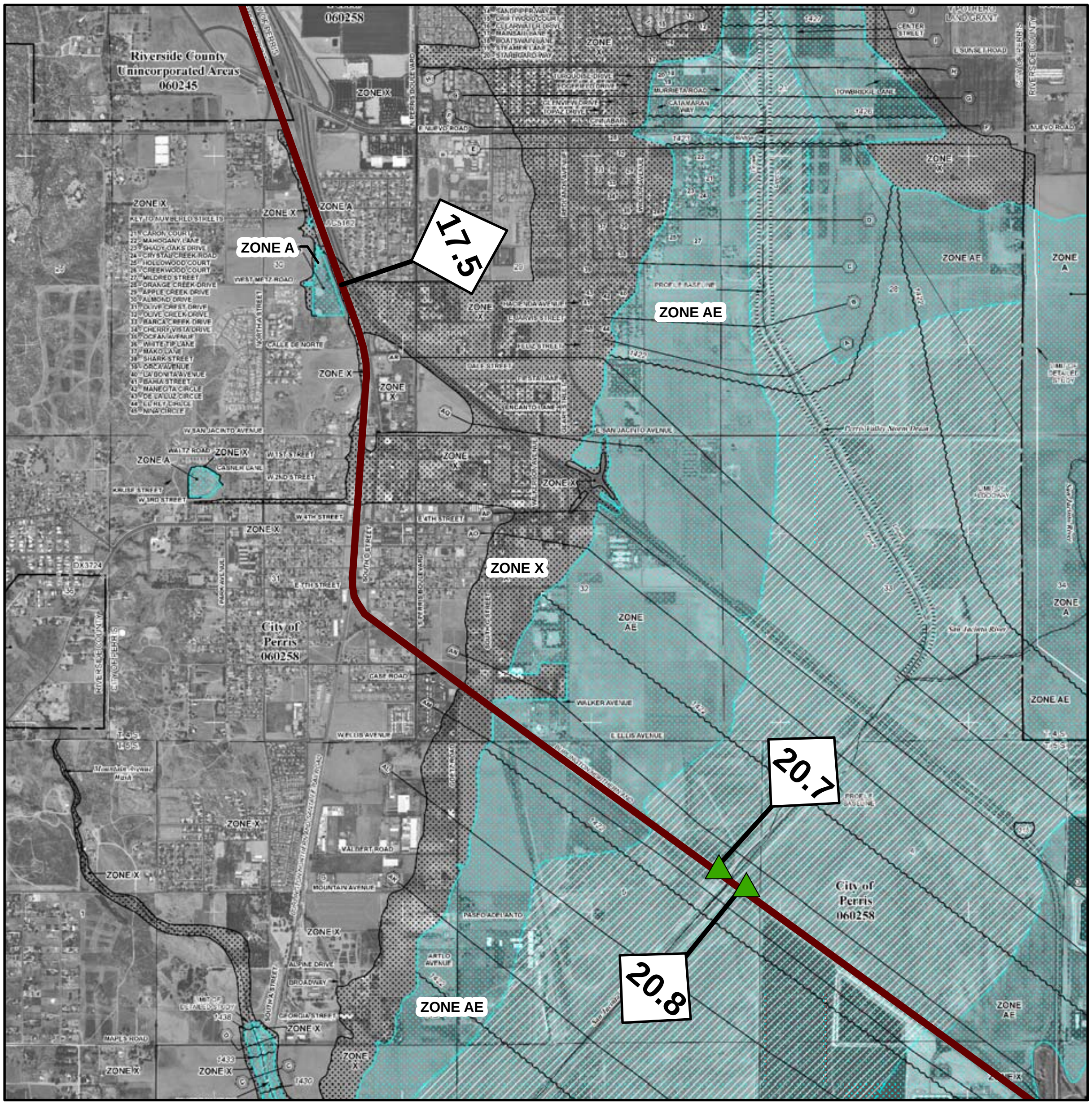
PVL ALIGNMENT

MILE POST

SOURCE: FEMA FLOOD INSURANCE RATE MAPS
EFFECTIVE DATE: AUGUST 8, 2008

N

PROJECT NO.	92666	FEMA ZONES FOR FIRM PANELS C0065G, C0727G, AND C0731G	FIGURE
DRAWN:	1/5/10		
DRAWN BY:	JP		3.17-1
CHECKED BY:	RM	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA	
FILE NAME: 92666firm.MXD			



LEGEND

FLOOD ZONE

FLOODWAY

PVL ALIGNMENT

MILE POST

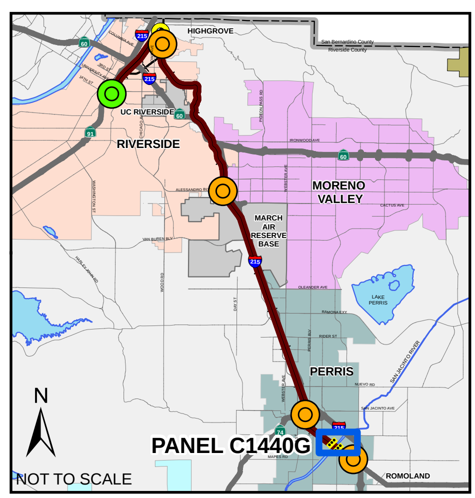
BRIDGE

SOURCE: FEMA FLOOD INSURANCE RATE MAPS
EFFECTIVE DATE: AUGUST 8, 2008

0 3,000 6,000
Feet

N

KEY MAP



Perris Valley Line

RCTC

KLEINFELDER

PROJECT NO.	92666
DRAWN:	1/5/10
DRAWN BY:	JP
CHECKED BY:	RM
FILE NAME: 92666firm1.MXD	

FEMA ZONES FOR FIRM PANEL C1440G

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.17-2

3.18 PALEONTOLOGICAL RESOURCES

This section discusses the paleontological sensitivity of the PVL corridor and its vicinity, evaluates potential project-related impacts to identified paleontological resources, and provides mitigation measures to reduce, avoid, or minimize potential impacts.

Paleontological resources, or fossils, are the fossilized remains, traces, or imprints of organisms preserved in or on the earth's crust and that provide information about the history of life on earth. Paleontology does not include archaeological resources, or those items made or modified by humans. Paleontological remains include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Fossils are considered nonrenewable resources because the organisms they represent no longer exist.

3.18.1 Regulatory Setting

Because fossils are classified as nonrenewable scientific resources, federal regulations include both general and specific provisions for the protection of paleontological resources, as summarized below.

Antiquities Act of 1906

The Antiquities Act of 1906 (16 USC 431-433) prohibits the destruction of "any historic or prehistoric ruin or monument, or any object of antiquity" on federal lands (no federal lands are involved in the PVL project). Although neither the Antiquities Act nor its implementing regulations (43 CFR Part 3) specifically addresses paleontological resources, many federal agencies have interpreted "objects of antiquity" to include fossils.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act (PRPA) was signed into law on March 30, 2009 (Public Law 111-011. P.L. 111-011, Title VI, Subtitle D) and requires federal agencies to manage and protect paleontological resources on federal land. The PRPA affirms the authority of federal land managing agencies to issue permits for the collection and curation of paleontological resources by qualified researchers, and maintain the confidentiality of locality data. As previously stated, the PVL project does not include federal lands.

National Natural Landmarks Program

The National Natural Landmarks (NNL) Program was established in 1962 under the authority of the Historic Sites Act of 1935, and is administered by the National Park Service (NPS). The goals of the NNL Program are:

- To encourage the preservation of sites illustrating the geological and ecological character of the United States;
- To enhance the scientific and educational value of sites thus preserved; and

- To strengthen public appreciation of natural history, and to foster a greater concern for the conservation of the nation's natural heritage.

A National Natural Landmark is an area designated by the Secretary of the Interior as being of national significance to the United States because it is an outstanding example(s) of major biological and geological features found within the boundaries of the United States or its Territories or on the Outer Continental Shelf (36 CFR Part 62.2).

National significance describes an area that is one of the best examples of a biological community or geological feature within a natural region of the United States, including terrestrial communities, landforms, geological features and processes, habitats of native plant and animal species, or fossil evidence of the development of life (36 CFR Part 62.2). All designated NNLs are listed on the National Registry of Natural Landmarks. Examples of paleontological NNLs in California include: Rancho La Brea in Los Angeles, Sharktooth Hill in Kern County, and Rainbow Basin in San Bernardino County.

3.18.2 Affected Environment

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) completed a literature review and records search for the PVL project (Scott, 2008). Previous geologic mapping of the project vicinity indicates that the PVL corridor traverses several sedimentary, igneous, and metamorphic rock units (Morton, 2001, 2003; Morton and Cox, 2001a, 2001b).

Sedimentary rock units mapped at the surface within the project corridor include: unnamed late Cenozoic sedimentary rocks of early Pleistocene to late Pliocene age; very old alluvial fan deposits of early Pleistocene age; old alluvial fan deposits of middle to later Pleistocene age; young alluvial fan deposits of Holocene and late Pleistocene age; young axial channel deposits of Holocene and late Pleistocene age; and active valley deposits of late Holocene age (Scott, 2008).

Of these, the Pleistocene alluvium and unnamed late Cenozoic sedimentary rocks have the potential to yield significant nonrenewable paleontological resources. In addition, Holocene alluvium mapped at the surface within the project corridor likely overlies older Pleistocene alluvium as a thin sedimentary veneer. Buried older alluvium beneath this thin layer of Holocene alluvium would have high paleontological sensitivity (Scott, 2008).

Pleistocene alluvial sediments throughout San Bernardino and Riverside counties and the Inland Empire have yielded significant fossils of extinct animals from the Ice Age. Fossils recovered from these sediments represent mammoths, mastodons, ground sloths, dire wolves, saber-toothed cats, large and small horses, large and small camels, bison, and plant macro- and microfossils (Anderson and others, 2002; Jefferson, 1991; Reynolds and Reynolds, 1991; Scott, 1997, 2008; Springer and others, 1998, 1999, 2007; Woodburne, 1991).

Igneous and metamorphic rock units mapped at the surface within the boundaries of the project corridor include: Cretaceous granitic rocks of the Box Springs Plutonic Complex; generic Cretaceous granitic rocks of the Peninsular Ranges batholith; Cretaceous granitic rocks of the Val Verde Pluton; and intermixed Paleozoic schist and gneiss and Cretaceous granitic rocks. None of these igneous or metamorphic rock types has potential to yield significant paleontological resources (Scott, 2008).

SBCM also conducted a search of the Regional Paleontologic Locality Inventory. The results of this search indicate that no previously recorded paleontological resource localities are present within the boundaries of or within one mile of the PVL corridor (Scott, 2008).

3.18.3 Environmental Consequences/Impacts

The results of the literature and records search conducted by SBCM indicate that portions of the project area are situated on Pleistocene and older sedimentary deposits, which have high potential to contain paleontological resources. Impacts to paleontological resources were analyzed based on the presence of fossil-bearing rock units and sediments, in combination with the identification of project-related activities which have the potential to impact these sensitive deposits.

Citrus Connection

The parcels proposed for construction of the Citrus Connection are located in an area mapped as middle Holocene alluvial fan deposits, which are not likely to yield paleontological resources. No impacts to paleontological resources would occur at the Citrus Connection as a result of construction, operation, or maintenance of the PVL.

SJBL Alignment

Portions of the existing SJBL ROW could contain buried Pleistocene alluvium beneath areas that have been previously disturbed by the original construction of the railroad. Proposed construction activities within the ROW (for example, double-tracking or track and tie replacement) in areas where the depth of previous disturbance is less than the maximum depth of construction may result in impacts to sensitive paleontological resources. However, operation and maintenance of the PVL would not result in impacts to paleontological resources. Mitigation measures are required to reduce potential construction impacts to a less than significant level (Mitigation Measures P-1 and P-2).

Hunter Park Station

Hunter Park Station would be located at one of three proximate sites: Palmyrita Avenue Station option, Columbia Avenue Station option, or the Marlborough Avenue Station option.

The mapped geological formations underlying the Palmyrita Avenue location for the proposed Hunter Park Station include old alluvial fan deposits, which have been known to yield paleontological resources (Morton and Cox, 2001; Scott 2008). Therefore, construction activities at this location have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation Measures P-1 and P-2).

The underlying sediments of the proposed Marlborough Avenue option consist mostly of old alluvial fan deposits and a small area of porphyritic granodiorite of the Box Springs Plutonic Complex. According to the SBCM (Scott, 2008), the granodiorite is a Cretaceous rock outcrop, which has no potential for paleontological resources. The areas mapped as old alluvial fan deposits, have the potential to yield paleontological resources; however, due to extensive grading and disturbance to native sediments, the likelihood of uncovering such resources is minimal. Therefore, the construction, operation, and maintenance of the Marlborough Avenue option for the proposed Hunter Park Station would not significantly impact paleontological resources.

The mapped geological formations underlying the proposed Columbia Avenue option include old alluvial fan deposits and middle Holocene age young alluvial fan deposits. Old alluvial fan deposits have been known to yield paleontological resources, while middle Holocene age young alluvial fan deposits are not considered sensitive for paleontological resources.

Grading and excavation for the construction of the proposed Hunter Park Station and associated facilities at two of the three locations could result in impacts to sensitive paleontological resources in areas where the depth of previous disturbance is less than the maximum depth of construction. However, operation and maintenance of the PVL would not result in impacts to paleontological resources. Mitigation measures are required to reduce potential construction impacts to a less than significant level (Mitigation Measures P-1 and P-2).

Moreno Valley/March Field Station

The proposed Moreno Valley/March Field Station is located in an area containing very old alluvial fan deposits, which have the potential to yield paleontological resources. Grading and excavation for the construction of the proposed Moreno Valley/March Field Station and associated facilities could result in impacts to sensitive paleontological resources in areas where the depth of previous disturbance is less than the maximum depth of construction. However, operation and maintenance of the PVL is not expected to impact paleontological resources. Mitigation measures are required to reduce potential construction impacts to a less than significant level (Mitigation Measures P-1 and P-2).

Downtown Perris Station

The proposed Downtown Perris Station is located in an area containing old and very old alluvial fan deposits, which have the potential to yield paleontological resources. Grading and excavation for the construction of the proposed Downtown Perris Station and associated facilities could result in impacts to sensitive paleontological resources in areas where the depth of previous disturbance is less than the maximum depth of construction. However, operation and maintenance of the PVL is not expected to impact paleontological resources. Mitigation measures are required to reduce potential construction impacts to a less than significant level (Mitigation Measures P-1 and P-2).

South Perris Station

This station and facility are located in areas mapped as old and very old alluvial fans, which have the potential to yield significant paleontological resources (AE, 2009; Scott, 2008). Construction activities at these locations have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level. Mitigation measures are required to reduce potential construction impacts to a less than significant level (Mitigation Measures P-1 and P-2).

Layover Facility

This facility are located in areas mapped as old and very old alluvial fans, which have the potential to yield significant paleontological resources (AE, 2009; Scott, 2008). Construction activities at these locations have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation Measures P-1 and P-2). Mitigation measures are required to reduce potential construction impacts to a less than significant level.

3.18.4 Mitigation Measures

Mitigation measures identified following would avoid impacts to paleontological resources:

- **P-1**: Ground-disturbing activities shall be monitored by a qualified paleontologist at the ~~the following locations: portions of the SJBL alignments,~~ Moreno Valley/March Field Station, Downtown Perris Station, South Perris Station, and Layover Facility, as well as two of the three potential locations for the Hunter Park Station (Columbia Avenue Station option and the Palmyrita Avenue Station option) where excavation is anticipated to be deeper than four feet. The monitor shall have the ~~power~~ authority to temporarily halt or divert construction equipment to allow for ~~the~~ removal of specimens. The monitor shall be equipped to salvage any fossils unearthed during project construction, and shall be prepared to collect sediment samples that are likely to contain the remains of small fossil invertebrates and vertebrates.

  To ~~fully~~ mitigate adverse impacts to any paleontological resources encountered during construction, ~~all~~ recovered specimens shall be identified, prepared for permanent preservation, and curated at the San Bernardino County Natural History Museum with permanent retrievable paleontological storage. ~~Finally, a~~A report of findings ~~which~~ that includes an itemized inventory of specimens shall ~~be prepared and submitted to RCTC along with confirmation of the~~accompany the recovered specimens for curation and storage.

- **P-2**: In the event ~~that unanticipated~~ paleontological resources are encountered during ~~the proposed PVL project~~ construction, ~~all~~ ground-disturbing activity shall cease in the immediate area. ~~until the services of a~~A qualified paleontologist ~~are~~ shall be retained ~~. The paleontologist shall~~to examine the ~~findings~~materials encountered, assess ~~their~~ significance, and ~~offer recommendations for the procedures deemed appropriate to either~~recommend a course of action to further investigate and/or mitigate adverse impacts to those resources that have been encountered.

This Page Intentionally Left Blank

3.19 INDIRECT AND CUMULATIVE EFFECTS

As an existing rail corridor, the SJBL has long been part of the natural and built landscape of Riverside County. Land use patterns, wetlands, waterways, and other natural areas, including wildlife habitat, have already been altered in response to its presence. Development patterns have been established that reflect the active rail presence, where residential development is limited and industrial development and rail spurs are present alongside the alignment.

The introduction of the PVL would essentially represent a change only in the type of rail operations within this same general corridor, with localized physical changes at specific areas. While new facilities such as the Citrus Connection, stations, and Layover Facility would be constructed, they would lie within or adjacent to the existing rail corridor and be integrated within the existing landscape defined by rail operations. Only limited land acquisition would be required, and there would be few changes in land use as a result of the PVL. The PVL has been anticipated by county, city, and specific area planning efforts, and supportive and complementary uses have been planned around the corridor and the station locations. PVL is expected to have limited indirect or cumulative effects. The assessment of indirect and cumulative effects focuses on select environmental indicators, as discussed in detail below.

As noted in Chapter 1.0, the PVL is contemplated as a new mode of transportation to serve the existing population of Riverside County, and accommodate the projected future population anticipated by regional and city plans. It would not cause new development, but could allow for more transit-oriented development, as already contemplated in the plans for Riverside County.

3.19.1 Regulatory Setting

The analysis of indirect and cumulative effects of the proposed project incorporates the regulations of the Council on Environmental Quality (CEQ) as contained in 40 CFR 1500-1508. The CEQ defines three classes of effects (used synonymously with “impacts”). Effects include:

(a) Direct effects, which are caused by the action and occur at the same time and place;

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems; and

(c) Cumulative effects, as the effects on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Direct effects are considered within the Sections 3.1, Land Use and Zoning through 3.19, Indirect and Cumulative Effects. The scope of the indirect and cumulative effects assessment is limited to geographic boundaries that include the I-215/SJBL alignment, adjacent rail-freight uses along existing rail spurs, the Citrus Connection, new stations, and Layover Facility.

Areas were studied for indirect and cumulative effects to include the effects of projects that could overlap with or contribute to effects associated with the PVL. Topics comprising this evaluation are limited to the range of such subjects that would reasonably be anticipated to result in indirect or cumulative effects within the study area. These include Land Use and Zoning, Air Quality, Traffic and Parking, Environmental Justice and Socioeconomics, Safety and Security, and ADA Compliance. Certain effects may be local in nature, while others may be more regional in their potential effects. Both potentially adverse and beneficial effects are considered.

After consideration of the potential to result in indirect or cumulative effects, several resource areas were not advanced as part of the indirect and cumulative effects assessment. These resource areas are excluded due to the localized area of potential impact and the existing regulatory controls that protect the resource include;

- Agricultural Resources – The PVL would not result in increased demand for the conversion of agricultural lands, as they are protected by state and local plans.

- Noise and Vibration – Noise and vibration resulting from PVL would be localized impacts that can be fully mitigated.

- Aesthetics – The existing rail alignment has been a part of the visual environs for more than a century, and the architecture and landscaping for the stations would be within the context of commuter rail operations, near no potentially sensitive receptors. Passing commuter trains would not result in a visual impact, nor would the PVL induce activity that would indirectly or cumulatively affect aesthetic conditions.

- Cultural Resources – Construction and maintenance activities for the PVL project would be conducted with BMPs that have been approved by the regulating agencies. The cumulative impact of the project with project specific mitigation measures implemented would not result in either an indirect or a cumulative effect.

- Hazards and Hazardous Materials – SCRRA/Metrolink does not haul hazardous wastes on its system and the proposed PVL extension would not transport such materials. The project would have BMPs for the management of hazardous wastes and materials resulting from the maintenance and repair of the railroad. Taken in combination with existing freight operations along the SJBL, the PVL would not result in indirect or cumulative effects from hazardous materials.

- Utilities and Service Systems – The PVL would not induce the need for new or extended utility services and therefore would not result in demands for development of new sources of utility provisions.

- Section 4(f) and Parklands – The proposed project would not affect parklands or 4(f) resources. The proposed project would not generate activities that would indirectly or cumulatively reduce enjoyment or access to such resources.

- Biological Resources – The PVL would be in conformity with the MSHCP, and there would be no direct effects to biological resources. By not altering the planned implementation of the MSHCP, indirect or cumulative effects would not occur.

- Geology and Soils – Geotechnical investigation (Kleinfelder, 2008) indicates that the project area is not located within the Alquist-Priolo Earthquake Fault Zone. The Geotechnical report indicates that the development of the PVL is feasible, with the application of standard geotechnical considerations including excavation and replacement of weak/expansive soils. These excavation and grading activities would be limited to the corridor and would not create indirect/cumulative effects when conducted in accordance with the Grading and Building Permits, Drainage and Erosions Control Plans, and a Construction SWPPP.

- Water Quality – Based on the design approaches incorporated into the replacement of the several culverts along the SJBL alignment, and the permit BMPs and requirements that are established for the construction of the replacement facilities, water quality standards and objectives would be unaffected as part of the PVL. Effects would be localized and conditions would be unchanged after construction, no indirect or cumulative effects would occur with or because of the project.

- Floodplains – Although a portion of the PVL alignment lies within a 100-year floodplain, no direct effects would result. The PVL would not contribute to flooding that may occur as part of a 100-year event. The culvert changes along the corridor would not result in changes to downstream flows. PVL would not induce new development or other landscape changes that would be anticipated to increase flood potential in the area.

- Paleontological Resources – The project area is not designated as an important area of for paleontological resources, primarily due to the fact the corridor has been disturbed over the past century. The construction of the stations would not result in impacts to paleontological resources with project-specific mitigation measures implemented; impacts would be localized and would not be indirect or cumulative in nature.

3.19.2 Affected Environment

For the preparation of this indirect and cumulative effects assessment, county and city planning agencies were interviewed for the purpose of identifying potential impacts that may be foreseen related to the PVL and the county/city planning context. A log of the planning agencies that were contacted is included in Appendix E. All agencies indicated that the PVL was anticipated and accommodated within their planning efforts, including specific area plans.

Planned development and roadway projects that would be completed by 2012 within the study area were evaluated for their potential to contribute to indirect and cumulative effects to air quality and other environmental conditions. Several development projects are planned along the corridor that include the Meridian Business Park near the MARB, which is covered by the March JPA, and proposed roadway projects along the I-215/SJBL alignment. The p~~P~~rojects ~~are~~ shown on Figure 3.19-1 and listed below were also analyzed within the technical reports for air quality, noise and vibration, and traffic:

- *Riverside Grade Separations*, projects of the city of Riverside, includes three railroad grade-separations of the BNSF at 3rd Street, Columbia Avenue, and Iowa Avenue. These projects are scheduled to be completed between 2010 and 2013. The grade separation of Columbia Avenue and the BNSF railroad tracks would raise Columbia Avenue over the BNSF railroad between La Cadena Drive and Iowa Avenue. Similarly, the Iowa Avenue grade separation project would raise Iowa Avenue over the BNSF tracks between Palmyrita Avenue and Spring Street.

- *Hunter Park Distribution Center* is a 520,000-square foot distribution center on the north side of Columbia Avenue and east of the ROW.
- *Perris Station Apartments* is a mixed use development that includes; 84 units of senior housing, 155,526 square feet of retail and office space, 77 parking spaces and 16,000 square feet of courtyard and open space.
- *The I-215 Freeway Widening Project* would be completed in three segments. These segments include I-215/SR-60 and Nuevo Road; between Nuevo Road and Scott Road, south of Perris; and between Scott Road and Murrieta Hot Springs Road.
- *The UCR Long Range Development Plan* contemplates planning and enhancements to the UCR campus. The most recent update of UCR's development plan projects the addition of 7,105,691 square feet of classrooms, labs, dormitories and office spaces to be completed by 2016. ~~Because the UCR Long Range Plan does not identify specific pieces to be complete by 2012, t~~The entire program is assumed to be in place for the PVL's opening year.
- *Centerpointe Industrial and Business Park* project is located northeast of Cactus Avenue and Graham Street. This will be a 162-acre business park.
- *Meridian Business Park* (formerly known as *March Business Center*) project is located southwest of I-215 and Alessandro Boulevard on a 1,290-acre site. The project land uses consist primarily of industrial park, warehousing, research and development, and associated business support uses. It is planned to be constructed in three phases, two of which would be completed by 2012. The Moreno Valley/March Field Station is located within this business park.
- *Gateway Center* is an industrial/business park project on a 25-acre site on Day Street south of Alessandro Boulevard.
- *Cactus/Commerce Commercial Center* is a 16,000-square-foot commercial/retail development on Cactus Avenue between Day and Elsworth Streets.
- *March Lifecare Campus* is a development project including a mix of healthcare and ancillary uses, including hospitals, general and specialty medical offices, medical retail, research and education, a wellness center, senior center, independent/assisted-living facilities, skilled nursing facilities, and related support facilities. The project will be developed in five planning areas, of which the first two are expected to be developed by 2011, and include a 50-bed hospital, 660 units of institutional residential, 190,000 square feet of medical office, 200,000 square feet of research and education, and 210,000 square feet of retail land uses. The remaining planning areas will be developed over the next 20 to 25 years.
- *The Venue at Perris* development project is located on the northeast corner of I-215 and Redlands Avenue. This will include a movie theater, home improvement superstore, discount superstore, and other retail space.

- *Perris Marketplace* project is a 520,000 square-foot retail center located on the west side of Perris Boulevard, north of Nuevo Road. This project includes a discount superstore with a gas station, a home improvement store, restaurants, and specialty retail space.

- *Towne Center* project is a 470,000 square-foot retail center located in the southeastern portion of the City of Perris, on the southeast corner of I-215 and Ethanac Road. It would be anchored by a 220,000 square-foot big-box store, and would also include specialty retail space, restaurants, and a hotel. The development is expected to be opened in 2009.

- *Perris Crossing* (formerly known as *Ethanac Road Retail Center*) development is a 625,000 square-foot retail center located on the north side of Ethanac Road, west of Case Road. The retail center would include approximately 600,000 square feet of retail and restaurant uses, a service station, and 24,000 square feet of office uses.

3.19.3 Environmental Consequences/Impacts

Indirect and cumulative effects for the PVL and the projects identified above are evaluated for Land Use and Zoning, Air Quality, Traffic and Parking, Environmental Justice and Socioeconomics, Safety and Security, ADA Compliance, and Construction Impacts.

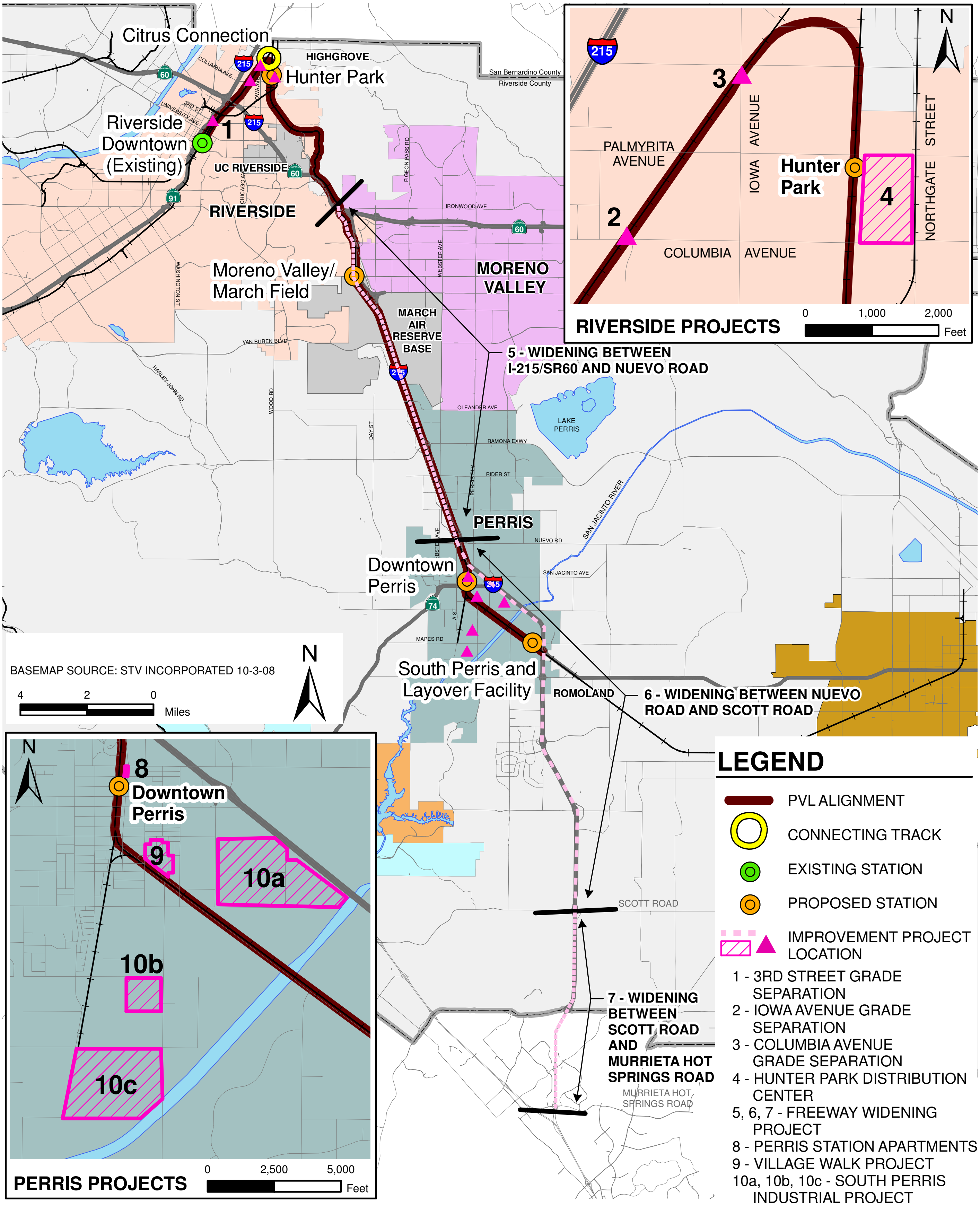
Land Use and Zoning

Riverside County has adopted the RCIP General Plan to coordinate various aspects of the long-range planning process. As a part of this effort three plans have been created, including the MSHCP, the CETAP, and an updated Riverside County General Plan. The General Plan is designed to direct future land use decisions throughout Riverside County. It would combine the MSHCP and the CETAP recommendations along with land use, safety, noise, housing, and air quality guidelines. The plan advocates the extension of the Riverside rail service corridor along the San Jacinto Branch Line.

The overall growth of Riverside County and individual communities is driven by market forces, employment, the cost of housing, and availability of land. The location, types and amounts of development are directed and shaped by local jurisdictions through their land use powers. The PVL is contemplated in the land use elements of the Perris and Riverside General Plans, as well as the County's General Plan. The introduction of commuter rail service may have an influence on the types and timing of development, allowing local jurisdictions to develop more transit-oriented development as part of specific area plans. The PVL is expected to accommodate existing transportation demand that exists within the I-215/SJBL alignment. The proposed commuter rail service would not generate any new development or cumulative impacts. The UCR Long Range Development Plan, Perris Downtown Improvements, March Lifecare Village, various planned business parks and retail centers, and transit and traffic improvements would not be affected by the PVL.

No indirect, growth-inducing, or cumulative effects on land use and zoning would be expected as a result of the introduction of PVL service.

This Page Intentionally Left Blank



PROJECT NO. 92666	2012 PROJECTS NEAR PVL CORRIDOR		FIGURE
DRAWN: 1/14/10			
DRAWN BY: JP			3.19-1
CHECKED BY: LF	SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA		
FILE NAME: 92666impr2.MXD			

Air Quality

While other transit and traffic projects planned for the region, noted above, may on their own or together affect air quality, any potential effects associated with these projects would not be induced or exacerbated by the PVL. PVL would reduce some trip-making that now occurs via automobile, resulting in a corresponding drop in Vehicle Miles Traveled (VMT) and a concomitant improvement in air quality.

The analysis of MSAT emissions indicates negligible direct emissions, and the cumulative contribution of the operations of SCRRA/Metrolink engines along the PVL would also not result in cumulative emissions impact.

The proposed rail service would result in a significant decrease in CO and GHG emissions, offsetting to a very limited degree the additional VMT and GHG directly and indirectly produced within the region. Air quality impacts from construction activities are not significant. In context with respect to cumulative air quality impacts from construction activities along the corridor including adjacent unrelated development projects are also not significant due to the time and distance in those projects and the expected construction of the PVL.

Although the total air quality improvement is small compared to the generation of pollutants throughout the region, the introduction of commuter rail service provides an ongoing opportunity for vehicle trip reduction and air quality improvement. PVL would result in no indirect or cumulative effects to air quality.

Traffic and Parking

Other transportation projects, as noted above, are expected to be complete by 2012, with the effect of accommodating anticipated development and addressing select traffic flow problems that currently exist. The traffic analyses conducted for the SEA included these projects and concluded that no unmitig~~at~~able significant adverse impacts to traffic and parking would result from the PVL. The introduction of the PVL would neither improve nor deteriorate the effectiveness of these other transportation projects.

The project could create an indirect and cumulative benefit through small improvements to regional traffic flow; the diversion of vehicle trips to PVL ridership would result in a measurable reduction in VMT. This improved traffic flow may not be represented as a net improvement to LOS along the regional arteries.

PVL may result in beneficial indirect and cumulative effects, including improved mobility and access for residents, workers and visitors, support of economic and community development in the region.

Environmental Justice and Socioeconomics

No impacts associated with environmental justice and socioeconomics would occur. The benefits of improved mobility would be a positive impact for communities along the entire corridor and would extend mobility to Orange and Los Angeles Counties. A small, indirect benefit to improved socioeconomic conditions through construction expenditures and increased localized spending by PVL commuters may occur.

Safety and Security

Safety and security would be directly improved by the PVL, and indirect and cumulative benefits would occur through area safety improvements for pedestrians and vehicles. Improved safety in the indirect and cumulative effects study area would also arise through Riverside's grade separation projects and the I-215 widening projects. Other safety improvements would likely be identified and corrected through the development approvals for the several development projects within the indirect and cumulative effects study area.

ADA Compliance

The PVL would be ADA compliant and it would further develop an existing network of ADA accessible transit ways in the region. A cumulative beneficial impact would occur, as Riverside County is linked by the ADA-compliant commuter service to Orange and Los Angeles Counties.

Construction Impacts

There is some potential for construction of the PVL to overlap construction of the I-215 widening projects and other development projects detailed above. If concurrent cumulative construction occurs, there may be the potential for construction-related impacts. Each project is bound to comply with SCAQMD construction air quality requirements; would be generally contained and localized in nature; and would also need to provide for appropriate maintenance and protection of traffic, under the direction and authority of the approving city. Construction-related impacts are, by nature, localized and limited in duration and are not expected to result in indirect or cumulative construction-related impacts.

Construction of the commuter rail elements would include mitigation measures required to assure that activities do not exceed SCAQMD quarterly impact thresholds. Measures to control fugitive dust would be used to avoid violation of the SCAQMD PM_{10} criterion, and the proposed sequencing of construction activities would avoid violation of the NO_x criterion. By compliance with these mitigation measures, the proposed project would avoid exceeding SCAQMD criteria and reduce the potential for cumulative construction period impacts. It is assumed that traffic management plans would also be implemented, so that the overall potential for cumulative traffic impacts would be reduced. No indirect or cumulative effects associated with construction activities would occur.

3.19.4 Mitigation Measures

With prescribed mitigation in place to control for the effects of direct traffic impacts, and with applicable construction BMPs and mitigation in effect, the PVL would result in no indirect or cumulative effects. No further mitigation would be required.

4.0 AGENCY COORDINATION

This document is being prepared as a project update to the Draft EA prepared and distributed in 2004. FTA has directed the preparation of this SEA to replace the previously prepared document because of the length of time that has elapsed since initial distribution. Therefore, agency coordination was reinitiated to solicit participation in this SEA process. Scoping letters were mailed out by RCTC to the following agencies on June 9, 2009.

4.1 FEDERAL AGENCIES

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency

4.2 STATE AGENCIES

- California Department of Fish and Game
- Native American Heritage Commission
- California State Office of Historic Preservation ~~Officer~~
- Regional Water Quality Control Board – Region 8
- California Department of Transportation – District 8
- University of California, Riverside

4.3 REGIONAL/LOCAL AGENCIES

- City of Moreno Valley
- City of Riverside
- City of Perris
- County of Riverside
- March Air Reserve Base
- March JPA
- Riverside Transit Authority
- Riverside Unified School District
- South Coast Air Quality Management District
- Western Riverside County Regional Conservation Authority

4.4 OTHER

- BNSF Railway Company
- Southern California Regional Rail Authority
- Union Pacific Railroad

This Page Intentionally Left Blank

5.0 PUBLIC OUTREACH

This section summarizes the public involvement and coordination efforts during the preparation of the Draft EA and this SEA. Public outreach and opportunities to comment on the PVL project date back to 2002 and include agency coordination, public scoping, and the public comment processes. These public outreach opportunities provided for bilingual access and interpreters were also provided as requested.

5.1 AGENCY COORDINATION

The proposed PVL project was presented to various agencies at the federal, state, regional/local levels since initial inception. Presentations, policy and technical committee meetings, and information gathering sessions were conducted to identify corridor transportation concerns, potential solutions, and anticipated environmental impacts. Information about the proposed project and various alternatives were presented. These scoping/outreach opportunities allowed agencies to identify issues and concerns to be incorporated in the environmental documentation process. Prior to the circulation of the Draft EA in 2004 contact was made and meetings occurred with the following agencies:

- U.S. Army Corps of Engineers, November 2002;
- U.S. Fish and Wildlife Services, May 2002;
- Federal Railroad Administration, June 2008, September 2008, December 2008, March 2009, June 2009, ongoing;
- California Public Utilities Commission, October 2008, July 2009, ongoing;
- California Department of Fish and Game, May 2002.

5.2 PUBLIC SCOPING

Public scoping opportunities occurred previously to gather public input on the project. Participants were asked to identify environmental issues within the study corridor, comment on the proposed project, and alternatives. These meetings included presentations, an informal question and answer session, and group discussions.

Overall, six public scoping meetings were held at different times and locations during the preparation of the Draft EA. The first group of meetings was held in February 2002, with meetings occurring in Moreno Valley, Riverside, and Perris. The dates for the first group of public scoping meetings happened February 13, 19, and 20, 2002. A second group of three meetings was held at each of the three above mentioned locations in May 2003. These public scoping meetings happened May 7, 12, and 19, 2003.

5.3 PUBLIC COMMENT PROCESS

There have been numerous opportunities presented by RCTC to review and comment on the project environmental documents. Public comment was received on the Draft EA (2004) and on the separate CEQA Initial Study/Mitigated Negative Declaration (IS/MND) (2009) prepared for the project. In addition to the environmental document review RCTC held several public information meetings and public hearings to solicit public participation for both NEPA and CEQA documents.

5.3.1 Initial NEPA Process

Previously, RCTC held four public hearings during the circulation of the Draft EA in 2004. The format for these meetings began with an informational session followed by a formal public hearing opportunity. Interested parties were asked to submit verbal or written comments. Verbal comments were transcribed and written comments could be submitted via letter, fax, or email until the end of the comment period. Comments received on the Draft EA are provided in a table that identifies issues by topic area and directs the reader to the appropriate section in this SEA and is provided in Appendix A. The public hearings were held on and at the following locations:

- University of California, Riverside on August 4, 2004 from 11:30 AM to 1:30 PM;
- Hyatt Elementary School on August 4, 2004 from 6:30 PM to 8:30 PM;
- Moreno Valley Center Hall on August 5, 2004 from 6:30 PM to 8:30 PM; and
- City of Perris Senior Citizen Center on August 7, 2004 from 10:00 AM to 12:00 PM.

5.3.2 CEQA Process

In 2009 RCTC conducted a similar environmental process to address the requirements of CEQA. An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the project. The CEQA document was made available for public review and comment from January 16 through February 26, 2009. One public information meeting and two public hearings were held during the public review comment period. The public information meeting and public hearings were held on and at the following locations:

- Public Information Meeting: Moreno Valley Towngate Community Center on February 4, 2009 from 6:00 PM to 8:00 PM;
- Public Hearing: Riverside County Administrative Center – Board Room on February 11, 2009 at 9:30 AM; and
- Public Hearing: Riverside County Administrative Center – Board Room on February 26, 2009 at 6:00 PM. This additional hearing was requested by the UCR neighbors.

After careful consideration of public comments received, RCTC decided to discontinue the IS/MND process and instead prepare an Environmental Impact Report (EIR). The EIR process was initiated with the publication of the Notice of Preparation (NOP) on July 14, 2009. Two weeks after the NOP was posted by the State Clearinghouse on July 28, 2009, RCTC conducted a public scoping meeting at the Moreno Valley Towngate Community Center. The Draft EIR was made available for public review and comments from April 5, 2010 through May 24, 2010. Comments received during the comment period were addressed and included in the

Final EIR, which was certified on July 25, 2011. In addition, three public hearings were held during the CEQA process:

- Public Hearing: Riverside County Administrative Center – Board Room on April 14, 2010 at 9:30 AM;
- Public Hearing: City of Perris – City Council Chambers on April 22, 2010 at 6:00 PM; and
- Public Hearing: UCR Extension – Room C on May 17, 2010 at 6:00 PM

5.3.3 Current NEPA Process

Another comment period occurred on the Draft SEA from December 1, 2010 to January 6, 2011, and specific comments received during the comment period were addressed and are included in the Final SEA (see Volume 1). This Final SEA is being made for made for public review per 23 CFR 771.119(h). It is anticipated that the PVL would not result in a significant impact to the environment with implementation of mitigation measures, and a Finding of No Significant Impacts (FONSI) will be prepared to conclude the process and formally document the decision. The final determination will be made after the public review period for the Final SEA has ended. ~~A new 30-day public comment period would be initiated with this SEA. The comments received on the document would be addressed in the final SEA document.~~

This Page Intentionally Left Blank

6.0 REPORT PREPARATION

6.1 LEAD AGENCY

FTA is the lead agency under NEPA for the preparation of the PVL Project SEA and Section 4(f) evaluation.

Federal Transit Administration Region 9
201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
(415) 744-3133

FTA Agent:
Leslie T. Rogers
Federal Transit Administration Region 9
201 Mission Street, Suite 1650
San Francisco, California 94105

6.2 REPORT PREPARERS

Kleinfelder
5015 Shoreham Place
San Diego, California 92122

Project Staff:
Robert Motschall, Ph.D. (Project Manager)
Mark Peabody, P.E.
Chuck Cleeves
Lauren Ferrell, E.I.T.
Elyssa Figari
Jeremy Janusziewicz
Blair Baker
Janet Patay
Melissa McKindley
Kathleen McCracken

STV Incorporated
9130 Anaheim Place, Suite 210
Rancho Cucamonga, California 91730

Project Staff:
Richard Quirk (Project Manager)
Molly MacQueen
Sarah Butler
Cade Hobbick
Steven Scalici, P.E.
Nil Simsek
Kenon Tutein
Douglas Swann

This Page Intentionally Left Blank

7.0 REFERENCES

AECOM, 2009. Perris Valley Line Draft Hydrology Report, Volume II San Jacinto River Analysis. Prepared for STV Incorporated and Riverside County Transportation Commission.

Albert A. Webb Associates, 2007. Towne Center Traffic Impact Study.

Anderson, R.S., M.J. Power, S.J. Smith, K.B. Springer, and E. Scott, 2002. Paleoecology of a Middle Wisconsin Deposit from Southern California. Quaternary Research 58(3): 310-317.

Applied EarthWorks, Inc. (AE), 2008. Archaeological Resources Report for the Perris Valley Rail Line Project, Riverside County, California. Prepared for the Riverside County Transportation Commission.

Applied Planning Inc., 2009. March Lifecare Campus Specific Plan Draft Program Environmental Impact Report.

AE, 2009. Archaeological Buried Site Testing Report for CA-RIV-805 for the Perris Valley Rail Line Project, Riverside County, California.

AE, 2009. Archaeological Testing Plan for CA-RIV-805 for the Perris Valley Rail Line Project, Riverside County, California. Prepared for the Riverside County Transportation Commission and the Federal Transit Administration.

ATS Consulting, 2005. Perris Valley Line Noise and Vibration Technical Report.

Boyle Engineering, 2000. Union Pacific Riverside Branchline Improvement Study. Prepared for Riverside County Transportation Commission.

Boyle Engineering and Barton-Aschman Associates, Inc., 1995. San Jacinto Branchline Commuter Rail Study. Prepared for Riverside County Transportation Commission.

California Air Resources Board (CARB), 2009. 1999-08-12 California Air Toxics Program Background. http://www.arb.ca.gov/toxics/background.htm

California Air Resources Board (CARB), 2009. California Ambient Air Quality Standards. http://www.arb.ca.gov/homepage.htm

California Building Code (CBC), 2007. California Code of Regulations, Title 24, Part 2, Volume 2.

California Department of Fish and Game (CDFG), 2009. Wildlife, Fish & Plan Information & Programs. http://www.dfg.ca.gov/about/wildlife.html

California Department of Transportation, 1997. Transportation Project-Level Carbon Monoxide Protocol (UCD-ITS-RR-97-21).

California Department of Transportation, 2007. California Scenic Highway Mapping System: Riverside County. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

California Department of Transportation, 2001. Final Environmental Impact Statement (FEIS): I-215 Improvements.

California Geological Survey (CGS), 2003. Probabilistic Seismic Hazards Assessment - Peak Ground Acceleration. http://www.consrv.ca.gov/cgs/rghm/psha/pga.htm

California Public Utilities Commission (CPUC), 2007. Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems. Amended May 3, 2007. http://docs.cpuc.ca.gov/published/GENERAL_ORDER/67952.htm.

California Public Utilities Commission (CPUC), 2009. Rail Transit Systems. http://www.cpuc.ca.gov/puc/transportation/transit.htm.

City of Moreno Valley, 2006. City of Moreno Valley General Plan, Adopted July 11, 2006. http://www.moreno-valley.ca.us/city_hall/general_plan.html

City of Perris, 2007. Village Walk District: Perris Downtown Draft Specific Plan Amendment, Adopted, January 2007. http://www.cityofperris.org/city-hall/specific-plans.html

City of Perris, 2005. Comprehensive General Plan 2030, Adopted June 14, 2005. http://www.cityofperris.org/city-hall/general-plan.html

City of Perris, 1992. Riverglen Specific Plan, Adopted April 1, 1992. http://www.cityofperris.org/city-hall/specific-plans.html

City of Perris, 1993. Downtown Specific Plan, Adopted March 6, 1993. http://www.cityofperris.org/city-hall/specific-plans.html

City of Perris, 1990. Green Valley Specific Plan, Adopted March 5, 1990. http://www.cityofperris.org/city-hall/specific-plans.html

City of Riverside, 2007. Riverside General Plan 2025, Adopted November 2007. http://www.riversideca.gov/planning/2008%2D0909/general-plan.asp

City of Riverside, 2007. Sycamore Highlands Specific Plan (formerly Lusk Highlander Specific Plan), Adopted November 27, 2007. http://www.riversideca.gov/planning/cityplans-csp-sychigh-sp.asp

City of Riverside, 2002. Hunter Business Park Specific Plan, Revised August 2002. http://www.riversideca.gov/planning/cityplans-csp-hunterbp.asp

City of Riverside, 1993. Specific Plan/EIR: Sycamore Canyon Business Park (formerly Box Springs Industrial Park), Adopted May 4, 1993. http://www.riversideca.gov/planning/cityplans

Code of Federal Regulations (CFR), Title 23, Section 771.135: Section 4(f), August 28, 1987.

Code of Federal Regulations (CFR), Title 36, part 800: Protection of Historic Properties, Amended August 5, 2004.

Code of Federal Regulations (CFR), Title 40, part 51, subpart A: Air Emissions Reporting Requirements, Updated December 17, 2008.

Code of Federal Regulations (CFR), Title 43, part 3: Preservation of American Antiquities, December 23, 1954.

Code of Federal Regulations (CFR) Title 44, part 60, section 3, paragraph (d)(3), October 1, 2001.

Code of Federal Regulations (CFR), Title 49, part 659: Rail Fixed Guideway Systems; State Safety Oversight, Updated June 22, 2005.

Davis, Daniel and Julie Davis, 2006. Hazardous Material Reference Book: Cross-Index.

Department of Toxic Substances Control (DTSC), 2009. California Hazardous Waste Classification. http://ccelearn.csus.edu/wasteclass/intro/intro_01.html

Executive Order 13112, Invasive Species, February 3, 1999.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994.

Federal Emergency Management Agency (FEMA), 2008. Map Service Center: Riverside County Maps and DFIRM data. http://www.fema.gov/

Federal Emergency Management Agency (FEMA), 2009. Disaster Information: Flood. http://www.fema.gov/hazard/flood/index.shtm

Federal Emergency Management Agency (FEMA), 2009. The National Flood Insurance Program. http://www.fema.gov/about/programs/nfip/index.shtm

Federal Railroad Administration (FRA), 2009. Track Safety Standards Compliance Manual. http://www.fra.dot.gov/us/content/460

Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Office of Planning and Environment, May 2006.

General Code of Operating Rules, Fifth Edition. 6.0 Movement of Trains and Engines: section 21, part 2, April 3, 2005.

International Code of Building Officials (ICBO), 1997. Handbook to the 1997 Uniform Building Codes

Institute of Transportation Engineers (ITE), 2007. Trip Generation, 7th Edition.

Jefferson, G.T., 1991. A Catalogue of Late Quaternary Vertebrates from California: Part Two, Mammals. Natural History Museum of Los Angeles County Technical Reports, No. 7.

J.L. Patterson & Associates, Inc., 2008. Perris Valley Line San Jacinto Branch Segment Between Highgrove, CA and South Perris, CA Draft Existing Conditions Report. Prepared for STV Incorporated and Riverside County Transportation Commission.

J.L. Patterson & Associates, Inc., 2009. Perris Valley Line Draft Hydrology Report, Volume I. Prepared for STV Incorporated and Riverside County Transportation Commission.

Kleinfelder, 2008. Hazardous Materials Corridor Study Technical Report. Prepared for STV Incorporated and Riverside County Transportation Commission.

Kleinfelder, 2008. Geotechnical Field Exploration and HazMat Investigation Work Plan (Revised from October 31, 2008). Prepared for STV Incorporated and Riverside County Transportation Commission.

Kleinfelder, 2009. Draft Initial Study/Mitigated Negative Declaration. Prepared for Riverside County Transportation Commission.

Kleinfelder, 2009. Preliminary Geotechnical Investigation Report: Perris Valley Line Corridor Project Station 200+00 to Station 1296+00. Prepared for STV Incorporated and Riverside County Transportation Commission.

LSA Associates, Inc., 2005. Ethanac Road Retail Center Traffic Study.

LSA Associates, Inc., 2006. Perris Marketplace Traffic Study.

March Air Reserve Base (MARB), 2009. March Air Reserve Base: Units. http://www.march.afrc.af.mil/units/

March Global Port, 2009. March Global Port: Connecting Riverside County to the World. http://www.marchglobalport.com/

March Joint Powers Authority (JPA), 2003. Meridian Specific Plan (formerly March Business Center), Adopted February 2003. http://www.marchjpa.com/planning.html

March Joint Powers Authority (JPA), 1997. General Plan of the March Joint Powers Authority, Adopted March 1997. http://www.marchjpa.com/planning.html

Meridian Specific Plan Amendment (SP-5) – Final Subsequent Environmental Impact Report, July 2010, March Joint Powers Authority.

Morton, D.M., 2001. Geologic Map of the Steele Peak 7.5' Quadrangle, Riverside County, California, version 1.0. United States Geological Survey Open-File Report 01-449. Digital preparation by R.M. Alvarez and V.M. Diep.

Morton, D.M., 2003. Preliminary Geologic Map of the Perris 7.5' Quadrangle, Riverside County, California, version 1.0. United States Geological Survey Open-File Report 03-270. Digital preparation by K.R. Bovard and R.M. Alvarez.

Morton, D.M. and B.F. Cox, 2001a. Geologic Map of the Riverside East 7.5' Quadrangle, Riverside County, California, version 1.0. United States Geological Survey Open-File Report 01-452. Digital preparation by M. Dawson and T. O'Brien.

Morton, D.M. and B.F. Cox, 2001b. Geologic Map of the Riverside West 7.5' Quadrangle, Riverside County, California, version 1.0. United States Geological Survey Open-File Report 01-451. Digital preparation by R.M. Alvarez and V.M. Diep.

Myra L. Franks & Associates, Inc., 2003. San Jacinto Branch Line, Riverside County, California, Determination of Eligibility and Effects Report. Prepared for STV Incorporated, Riverside County Transportation Commission, and the Federal Transit Administration.

National Cooperative Soil Survey Organization (NCSS), 2008. National Soil Survey Handbook, Updated July, 2008.

Natural Resources Conservation Service (NRCS), 1983. National Engineering Handbook.

Natural Resources Conservation Service (NRCS), 1971. Soil Survey Western Riverside Area, California.

Pipeline and Hazardous Materials Safety Administration (PIMMA), 2007. National Pipeline Mapping System. http://www.npms.phmsa.dot.gov

Reynolds, S.F.B. and R.L. Reynolds, 1991. The Pleistocene Beneath Our Feet: Near-Surface Pleistocene Fossils in Inland Southern California Basins, in Inland Southern California: the Last 70 Million Years, M.O. Woodburne, S.F.B. Reynolds, and D.P. Whistler, eds. Redlands, San Bernardino County Museum Special Publication 38 (3&4), p. 41-43.

Riverside County, 2003. Riverside County General Plan: Riverside County Integrated Project (RCIP), Adopted October 7, 2003.

Riverside County Habitat Conservation Agency, 2009. Habitat Conservation Plan (HCP) for the Stephens' Kangaroo Rat (SKR) in Western Riverside County, California. http://www.skrplan.org/skr.html

Riverside County Land Information System (RCLIS), 2008. County of Riverside Transportation and Land Management Agency Geographic Information Services. http://www3.tlma.co.riverside.ca.us/pa/rclis/index.html

Riverside County Transportation & Land Management Agency (TLMA), 2008. Riverside County General Plan 2008: Area Plan Volume 1 and Area Plan Volume 2. http://www.rctlma.org/genplan/general_plan_2008/general_plan_2008.aspx

Riverside County Transportation & Land Management Agency (TLMA), 2003. Riverside County General Plan: Area Plans Volume 1 and Area Plans Volume 2. http://www.rctlma.org/genplan/content/gp.aspx

Riverside County Transportation Commission (RCTC), 2006. Development Plan and Negative Declaration for the construction of Phase I of the proposed Perris Multimodal Facility.

Riverside County Transportation Commission (RCTC), 2009. I-215 Improving Mobility. http://www.i215project.info/

Riverside County Transportation Commission (RCTC), 2009. State Route 91/State Route 71 Interchange Improvement Project: http://www.sr91-sr71project.info/schedule.asp

Riverside County Transportation Commission (RCTC), 2009. State Route 91 Project. http://www.sr91project.info/facts.php

Riverside County Waste Management Department (RCWMD), 2006. http://www.rivcowm.org.

Riverside County Flood Control & Water Conservation District (RCFCWCD), 2009. District Overview. http://www.floodcontrol.co.riverside.ca.us/

Santa Ana Regional Water Quality Control Board (SARWQCB), 2009. California Environmental Protection Agency: Santa Ana Region. http://www.swrcb.ca.gov/rwqcb8/

Scott, Eric, 1997. A Review of Equus conversidens in Southern California, with a Report on a Second, Previously-Unrecognized Species of Pleistocene Small Horse from the Mojave Desert. Journal of Vertebrate Paleontology 17(3): 75-A.

Scott, Eric, 2008. Unpublished Paleontology Literature and Records Review, Perris Valley Commuter Rail Line Project, Riverside County, California. Letter from the Division of Geological Sciences of the San Bernardino County Museum to Applied Earthworks, dated July 21, 2008.

Springer, K.B., E. Scott, L.K. Murray, and W.G. Spaulding, 1998. Partial Skeleton of a Large Individual of Mammut americanum from the Domenigoni Valley, Riverside County, California. Journal of Vertebrate Paleontology 18(3): 78-A.

Springer, K.B., E. Scott, J.C. Sagebiel, and K.M. Scott, 1999. A Late Pleistocene Lake Edge Vertebrate Assemblage from the Diamond Valley, Riverside County, California. Journal of Vertebrate Paleontology 19(3): 77-A.

Springer, K.B., E. Scott, J.C. Sagebiel, and L.K. Murray, 2007. The Diamond Valley Lake Local Fauna: Late Pleistocene Vertebrates from Inland Southern California. Journal of Vertebrate Paleontology 27(3): 151A.

South Coast Air Quality Management District (SCAQMD), 2007. CEQA Air Quality Handbook (revised 1993). http://www.aqmd.gov/ceqa/oldhdbk.html

Southern California Association of Governments (SCAG), 2006. Regional Transportation Improvement Program (RTIP). http://www.scag.ca.gov/rtip/

Southern California Association of Governments (SCAG), 2008. Regional Transportation Plan (RTP). http://www.scag.ca.gov/rtp2008/

State of California. 2006. Department of Conservation: Farmland Mapping and Monitoring Program (FMMP). http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx

State of California, 2003. Governor's Office of Planning and Research (OPR): State of California General Plan Guidelines, Adopted October 2003. www.opr.ca.gov/planning/publications/General_Plan_Guidelines_2003.pdf.

State of California, 1989. Governor's Office of Planning and Research (OPR): Preemption of Local Land Use Authority in California, Part 2, Adopted December 1989. http://ceres.ca.gov/planning/preemption/Stephens' Kangaroo Rat Habitat Conservation Plan, 1996. Riverside County Habitat Conservation Agency

State Water Resources Control Board (SWRCB), 2003. National Pollutant Discharge Elimination System. http://www.waterboards.ca.gov/water_issues/programs/npdes/

State Water Resources Control Board (SWRCB), 2009. Construction Stormwater Permit. http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml

STV Incorporated, 2004. San Jacinto Branchline/I-215 Corridor Study/Alternatives Analysis. Prepared for Riverside County Transportation Commission.

STV Incorporated, ~~2010~~2011. Perris Valley Line Commuter Rail Air Quality Technical Report. Prepared for Riverside County Transportation Commission.

STV Incorporated, ~~2010~~2011. Perris Valley Line Commuter Rail Noise and Vibration Technical Report. Prepared for Riverside County Transportation Commission.

STV Incorporated, ~~2010~~2011. Perris Valley Line Commuter Rail Traffic Technical Report. Prepared for Riverside County Transportation Commission.

Transportation Research Board, 2000. Highway Capacity Manual.

Urban Crossroads, 2008. Cactus Avenue and Commerce Center Drive Commercial Center Traffic Impact Study.

U.S. Army Corps of Engineers (USACE), 2009. Wetlands and Waterways Regulation and Permitting. http://www.usace.army.mil/CECW/Pages/ww_reg_permit.aspx

U.S. Census Bureau, 2000. Census 2000 Fact Sheet: American Fact Finder. http://factfinder.census.gov/

U.S. Code (USC), Title 7, Section 4201: Farmland Protection Policy, Updated January 8, 2008.

U.S. Code (USC), Title 16, Sections 431-433: Antiquities Act of 1906, June 8, 1906.

U.S. Code (USC), Title 16, Sections 470: National Historic Preservation Act of 1966, October 15, 1966.

U.S. Code (USC), Title 16, Sections 661-667E: Fish and Wildlife Coordination Act, March 10, 1934

U.S. Code (USC), Title 16, Sections 703-712: Migratory Bird Treaty Act of 1918, July 13, 1918.

U.S. Code (USC), Title 16, Sections 1531-1544: Endangered Species Act, December 28, 1973.

U.S. Code (USC), Title 33: Navigation and Navigable Waters, Revised July 1, 2005.

U.S. Code (USC), Title 49, Section 303: Department of Transportation Act of 1966, October 15, 1966.

U.S. Code (USC), Title 49, Section 5309: Transportation, July 9, 1964.

U.S. Department of Agriculture, 2007. Census of Agriculture, Riverside County Profile. National Agricultural Statistics Service. www.agcensus.usda.gov.

U.S. Department of Justice, 2005. Civil Rights Division Disability Rights Section: A Guide to Disability Rights Laws.

U.S. Department of Transportation, 1982. Handbook of Urban Rail Noise and Vibration Control (UMTA-MA-06-0099-82-1).

U.S. Department of Transportation, 1983. State of the Art Review: Prediction and Control of Groundborne Noise and Vibration from Rail Transit Trains (UMTA-MA-06-0049-83-4).

U.S. Environmental Protection Agency (USEPA), 2009. History of the Clean Water Act. http://www.epa.gov/lawsregs/laws/cwahistory.html

U.S. Environmental Protection Agency (USEPA), 2009. Wastes - Non-Hazardous Waste, http://www.epa.gov/waste/nonhaz/index.htm

U.S. Environmental Protection Agency (USEPA), 1975. Hazard Materials Transportation Act.

U.S. Fish and Wildlife Service (USFWS), 2009. Endangered Species Program. http://www.fws.gov/endangered/

U.S. Geological Survey (USGS), M.P. Kennedy, and D.M. Morton, 2003, Preliminary Geologic map of the Murrieta 7.5' quadrangle, Riverside County, California, U.S. Geological Survey (USGS), Open-File Report OF-03-189, scale 1:24000.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), 2003. Riverside County Habitat Conservation Agency, Adopted June 17, 2003.

Western Riverside County Natural Hazard Disclosure (Fire) Map, 2000. California Department of Forestry and Fire Protection (CDFFP), January 2000. http://www.fire.ca.gov/ab6/ab6lst.html

Wilbur Smith and Associates, 2008. Final Report, Perris Valley Line Freight Study presented by San Jacinto Branch Line Ad Hoc Committee, May 14, 2008, http://www.rctc.org/downloads/11.SW.PVL%20Freight%20Study.pdf.

Wiser, Ben, P. Blaikie, T. Cannon, and I. Davis, 2004. At Risk: Natural hazards, People's Vulnerability and Disasters.

Woodburne, M.O., 1991. The Cajon Valley, in Inland Southern California: the Last 70 Million Years, M.O. Woodburne, S.F.B. Reynolds, and D.P. Whistler, eds. Redlands, San Bernardino County Museum Special Publication 38(3&4), p. 41-43.

This Page Intentionally Left Blank

8.0 INDEX

Acquisition, ES-11, ES-12, ES-18, ES-19, 1-2, 1-3, 1-14, 1-68, 1-69, 1-70, 1.8-1, 1.8-2, 1.8-3, 1.8-4, 1.8-5, 2-12, 2-13, 2-14, 2-18, 2-21, 3.10-1, 3.10-2, 3.10-10, 3.10-11, 3.14-3, 3.19-1

Airport, 1-81, 3.1-3, 3.1-5, 3.2-3, 3.2-9, 3.8-2, 3.8-3, 3.8-9, 3.8-12, 3.8-13, 3.8-14, 3.8-15, 3.13-1

Alternatives Analysis (AA), ES-1, ES-17, ES-18, ES-19, 1-1, 1-9, 2-2, 2-21, 3.11-6

Americans with Disabilities Act (ADA), ES-7, 1-19, 1-20, 1-51, 3.12-2, 3.12-3, 3.13-1, 3.13-2, 3.13-3, 3.13-7, 3.13-8, 3.19-2, 3.19-5, 3.19-10

Box Springs, ES-14, ES-15, ES-18, 1-20, 1-68, 3.1-2, 3.1-3, 3.1-6, 3.3-22, 3.4-26, 3.5-24, 3.6-3, 3.6-9, 3.6-10, 3.6-12, 3.6-13, 3.6-14, 3.6-17, 3.7-5, 3.7-9, 3.8-3, 3.8-15, 3.10-3, 3.10-8, 3.10-9, 3.10-10, 3.10-11, 3.12-4, 3.14-4, 3.14-5, 3.14-11, 3.14-12, 3.14-21, 3.14-35, 3.14-36, 3.15-1, 3.15-20, 3.17-2, 3.17-3, 3.18-2, 3.18-3, 7-2

Bridge, ES-7, ES-14, 1-15, 1-19, 1-51, 1-65, 3.1-1, 3.1-8, 3.3-16, 3.4-32, 3.4-49, 3.5-18, 3.6-11, 3.12-1, 3.12-2, 3.12-5, 3.13-2, 3.14-12, 3.14-22, 3.14-23, 3.14-28, 3.14-35, 3.15-2, 3.15-20, 3.15-21, 3.17-4, 3.17-5, 3.17-6, 3.17-7

California Department of Fish and Game (CDFG), ES-13, ES-14, ES-15, 1-81, 3.1-1, 3.1-5, 3.14-3, 3.14-23, 3.14-28, 3.14-29, 3.14-34, 3.14-36, 3.17-3, 3.17-7, 7-1

California Public Utilities Commission (CPUC), 1-5, 1-6, 1-8, 1-51, 1-52, 1-81, 3.4-6, 3.4-14, 3.4-24, 3.9-2, 3.12-2, 3.12-5, 3.12-6, 3.13-2, 3.13-7, 7-2

City of Perris, ES-1, ES-3, 1-1, 1-2, 1-13, 1-14, 1-15, 1-22, 1-69, 1-81, 3.1-1, 3.1-4, 3.1-5, 3.1-7, 3.1-10, 3.2-3, 3.2-9, 3.2-10, 3.3-11, 3.3-22, 3.4-8, 3.5-2, 3.-5-13, 3.5-16, 3.15-18, 3.5-24, 3.6-2, 3.6-10, 3.6-11, 3.7-3, 3.8-3, 3.8-4, 3.8-14, 3.9-4, 3.9-5, 3.10-3, 3.11-15, 3.12-2, 3.12-3, 3.12-4, 3.12-5, 3.12-6, 3.14.4, 3.14-21, 3.14-23, 3.14-24, 3.15-1, 3.15-6, 3.17-4, 3.17-5, 3.19-5, 4-1, 5-2, 5-3, 7-2

City of Riverside, ES-1, ES-3, 1-2, 1-3, 1-4, 1-6, 1-7, 1-8, 1-13, 1-14, 1-22, 1-52, 1-53, 1-81, 3.1-1, 3.1-2, 3.1-3, 3.1-5, 3.1-6, 3.1-7, 3.1-9, 3.2-3, 3.2-4, 3.2-9, 3.3-11, 3.4-7, 3.4-8, 3.5-2, 3.5-16, 3.6-2, 3.6-9, 3.6-12, 3.7-3, 3.7-4, 3.8-3, 3.8-4, 3.9-3, 3.9-4, 3.9-5, 3.10-3, 3.11-5, 3.12-2, 3.12-3, 3.12-4, 3.12-5, 3.12-6, 3.14-5, 3.14-12, 3.15-1, 3.15-6, 3.16-5, 3.17-2, 3.19-3, 4-1, 7-2

Communication Tower, ES-7, 1-15, 1-19, 1-52, 3.6-14, 3.9-5, 3.9-6

Construction, ES-1, ES-7, ES-10, ES-11, ES-12, ES-13, ES-14, ES-15, ES-16, 1-2, 1-4, 1-5, 1-6, 1-12, 1-14, 1-15, 1-19, 1-21, 1-52, 1-65, 1-66, 1-70, 2-12, 2-13, 2-14, 3-1, 3.1-7, 3.1-11, 3.2-3, 3.2-4, 3.3-1, 3.3-5, 3.3-7, 3.3-16, 3.3-17, 3.3-18, 3.3-34, 3.3-35, 3.3-36, 3.3-37, 3.4-1, 3.4-6, 3.4-7, 3.4-8, 3.4-24, 3.4-26, 3.4-31, 3.4-32, 3.4-33, 3.4-39, 3.4-49, 3.4-50, 3.5-38, 3.5-39, 3.6-2, 3.6-10, 3.6-11, 3.6-13, 3.6-14, 3.6-18, 3.7-1, 3.7-4, 3.7-5, 3.7-6, 3.7-7, 3.7-8, 3.7-9, 3.7-10, 3.8-1, 3.8-5, 3.8-6, 3.8-9, 3.8-10, 3.8-11, 3.8-12, 3.8-13, 3.8-14, 3.8-15, 3.8-16, 3.9-3, 3.9-4, 3.9-5, 3.9-6, 3.9-13, 3.10-2, 3.10-7, 3.10-12, 3.10-13, 3.10-14, 3.11-10, 3.11-11, 3.11-12, 3.12-1, 3.12-2, 3.12-4, 3.12-7, 3.12-8, 3.13-1, 3.13-8, 3.13-9, 3.14-3, 3.14-23, 3.14-28, 3.14-34, 3.14-35, 3.14-36, 3.15-1, 3.15-2, 3.15-5, 3.15-6, 3.15-20, 3.15-21, 3.16-4, 3.16-5, 3.16-6, 3.17-2, 3.17-3, 3.17-4, 3.17-6, 3.18-3, 3.18-4, 3.18-5, 3.19-3, 3.19-5, 3.19-9, 3.19-10, 7-5, 7-6,

County of Riverside, 1-52, 1-70, 3.1-1, 3.1-2, 3.1-4, 3.5-2, 3.7-3, 3.9-3, 3.9-6, 3.10-3, 3.12-2, 3.12-6, 3.15-6, 3.15-19, 3.16-4, 3.17-6, 4-1, 7-5

Culvert, ES-7, ES-13, ES-14, ES-15, 1-15, 1-19, 1-51, 1-65, 1-66, 3.1-6, 3.1-8, 3.3-16, 3.4-32, 3.9-5, 3.9-13, 3.14-21, 3.14-22, 3.14-28, 3.14-33, 3.14-35, 3.14-36, 3.16-5, 3.16-6, 3.17-1, 3.17-5, 3.17-6, 3.19-3

Derailment, 3.8-11, 3.12-1, 3.12-4, 3.12-5

Farmland Protection Policy Act (FPPA), 3.2-1, 3.2-2, 3.2-10

Federal Railroad Administration (FRA), ES-18, 2-13, 2-17, 2-21, 3.4-5, 3.4-24, 3.8-11, 3.9-1, 3.10-1, 3.12-1, 3.12-4, 3.12-5, 3.13-2, 7-3

Federal Transit Administration (FTA), ES-1, ES-2, ES-8, ES-10, ES-17, 1-1, 1-9, 1-12, 1-14, 2-1, 3.1-2, 3.3-3, 3.13-16, 3.3-20, 3.3-24, 3.3-32, 3.4-1, 3.4-2, 3.4-5, 3.4-9, 3.4-13, 3.4-22, 3.4-23, 3.4-24, 3.4-25, 3.4-25, 3.4-26, 3.4-28, 3.4-29, 3.4-30, 3.4-31, 3.4-32, 3.4-33, 3.4-34, 3.4-39, 3.4-43, 3.4-45, 3.4-46, 3.4-47, 3.4-48, 3.7-1, 3.7-6, 3.7-8, 3.7-9, 3.7-10, 3.9-1, 3.9-2, 3.10-1, 3.10-2, 3.10-7, 3.11-14, 3.11-5, 3.12-2, 3.12-4, 3.14-2, 4-1, 6-1, 7-3

Freight, ES-17, 1-2, 1-3, 1-7, 1-9, 1-13, 1-20, 1-65, 1-67, 1-68, 2-11, 2-12, 2.17, 3.1-4, 3.1-5, 3.3-16, 3.3-36, 3.4-14, 3.4-23, 3.4-2, 3.4-26, 3.4-44, 3.4-45, 3.4-46, 3.8-2, 3.8-11, 3.8-12, 3.12-3, 3.12-5, 3.12-6, 3.12-7, 3.19-1, 3.19-2, 7-7

Grade Crossing, ES-7, ES-8, ES-10, 1-3, 1-5, 1-6, 1-15, 1-19, 1-51, 1-52, 1-65, 1-81, 2-13, 3.1-8, 3.3-20, 3.4-1, 3.4-6, 3.4-14, 3.4-22, 3.4-23, 3.4-24, 3.4-25, 3.4-31, 3.4-34, 3.4-49, 3.5-2, 3.5-23, 3.5-24, 3.5-38, 3.5-39, 3.8-15, 3.8-17, 3.9-2, 3.9-5, 3.10-11, 3.12-2, 3.12-3, 3.12-4, 3.12-5, 3.12-6, 3.12-8, 3.13-2, 3.13-7

Greenhouse Gas (GHG), 3.3-6, 3.3-9, 3.3-16, 3.3-18, 3.3-19, 3.3-19, 3.3-33, 3.3-34, 3.19-9

Landscape Walls, ES-7, 1-15, 1-19, 1-53, 3.3-16, 3.6-3, 3.6-12

Locally Preferred Alternative (LPA), ES-1, ES-18, 1-1, 2-21, 3.11-9

Los Angeles Union Station (LA Union Station), 1-2, 1-66, 1-67, 3.3-25, 3.3-26, 3.4-24, 3.8-9

Maintenance, 1-4, 1-6, 1-8, 1-21, 1-51, 1-52, 1-67, 2-14, 3.3-2, 3.3-12, 3.3-23, 3.3-24, 3.3-32, 3.4-5, 3.4-14, 3.4-25, 3.6-14, 3.7-2, 3.7-6, 3.7-7, 3.7-8, 3.7-9, 3.8-6, 3.8-9, 3.8-10, 3.8-11, 3.8-15, 3.9-6, 3.9-13, 3.12-1, 3.12-4, 3.12-5, 3.12-6, 3.12-7, 3.12-8, 3.13-2, 3.14-3, 3.14-5, 3.15-2, 3.15-20, 3.15-21, 3.16-2, 3.16-4, 3.-16-5, 3.16-6, 3.18-3, 3.18-4, 3.19-2, 3.19-10

March Joint Powers Authority (JPA), 1-21, 1-22, 1-69, 1-81, 3.1-1, 3.1-3, 3.1-4, 3.1-7, 3.1-9, 3.2-9, 3.3-36, 3.6-11, 3.6-12, 3.8-12, 3.9-4, 3.14-5, 3.19-3, 4-1, 7-4

Multiple Species Habitat Conservation Plan (MSHCP) ES-13, ES-14, 1-12, 1-81, 3.1-5, 3.1-10, 3.1-11, 3.10-3, 3.10-7, 3.10-9, 3.10-11, 3.10-13, 3.10-14, 3.14-2, 3.14-3, 3.14-4, 3.14-12, 3.14-13, 3.14-24, 3.14-27, 3.14-34, 3.14-35, 3.17-2, 3.19-2, 3.19-5, 7-7

National Pollutant Discharge Elimination System (NPDES), 3.8-6, 3.9-1, 3.14-3, 3.15-5, 3.16-1, 3.16-4, 3.16-5

National Register of Historic Places (NRHP), ES-10, 3.6-3, 3.7-1, 3.7-2, 3.7-3, 3.7-4, 3.7-5, 3.7-6, 3.7-7, 3.7-9, 3.7-10, 3.10-7, 3.10-8, 3.10-12

Noise Barrier, ES-7, ES-8, 1-53, 1-65, 3.3-16, 3.4-24, 3.4-28, 3.4-29, 3.4-30, 3.4-31, 3.4-32, 3.4-33, 3.4-34, 3.4-35, 3.6-3, 3.6-12, 3.7-4, 3.11-10, 3.11-12, 3.14-21

Operation, ES-3, ES-17, 1-3, 1-4, 1-5, 1-6, 1-7, 1-12, 1-21. 1-51, 1-65, 1-66, 1-67, 1-68, 2-11, 2-12, 2-13, 2-14, 2-17, 2-21, 3.1-7, 3.1-11, 3.2-2, 3.3-1, 3.3-3, 3.3-5, 3.3-6, 3.3-16, 3.3-18, 3.3-19, 3.3-20, 3.3-21, 3.3-22, 3.3-23, 3.3-25, 3.3-26, 3.3-27, 3.3-31, 3.3-32, 3.3-34, 3.3-35, 3.4-1, 3.4-5, 3.4-6, 3.4-7, 3.4-22, 3.4-23, 3.4-24, 3.4-25, 3.4-26, 3.4-31, 3.4-43, 3.4-45, 3.4-46, 3.4-48, 3.4-49, 3.4-50, 3.5-1, 3.5-15, 3.5-20, 3.5-24, 3.5-43, 3.5-44, 3.6-10, 3.7-5, 3.7-6, 3.7-7, 3.7-8, 3.7-9, 3.8-2, 3.8-3, 3.8-4, 3.8-6, 3.8-9, 3.8-10, 3.8-11, 3.8-13, 3.8-14, 3.8-15, 3.9-1, 3.9-4, 3.9-6, 3.9-13, 3.10-10, 3.10-11, 3.10-12, 3.10-13, 3.10.14, 3.11-11, 3.12-1, 3.12-2, 3.12-4, 3.12-5, 3.12-6, 3.12-7, 3.12-8, 3.13-2, 3.14-3, 3.14.24, 3.15-20, 3.15-21, 3.16-5, 3.17-3, 3.18-3, 3.18-4, 3.19-1, 3.19-2, 3.19-9,

Park, ES-7, ES-11, ES-15, ES-16, ES-18, ES-19, 1-2, 1-4, 1-5, 1-6, 1-8, 1-20, 1-21, 1-52, 1-66, 1-67, 1-68, 1-69, 1-70, 2-18, 2-21, 3.1-3, 3.1-4, 3.1-6, 3.1-7, 3.1-9, 3.2-3, 3.2-4, 3.2-9, 3.2-10, 3.3.-21, 3.3-22, 3.3-36, 3.3-37, 3.4-13, 3.4-16, 3.4-21, 3.4-39, 3.4-45, 3.5-3, 3.5-13, 3.5-15, 3.5-16, 3.5-19, 3.5-21, 3.5-22, 3.5-23, 3.5-23, 3.5-25, 3.5-26, 3.5-27, 3.5.28, 3.5-29, 3.5-30, 3.5-31, 3.5-37, 3.6-3, 3.6-9, 3.6-10, 3.6-11, 3.6-12, 3.6-14, 3.6-17, 3.7-7, 3.8-2, 3.8-5, 3.8-9, 3.8-10, 3.8-16, 3.9-5, 3.9-6, 3.10-1, 3.10-3, 3.10-7, 3.10-9, 3.10-10, 3.10-11, 3.10-13, 3.11-3, 3.12-2, 3.13-3, 3.13-7, 3.14-4, 3.14-5, 3.14-11

Parking, 1-3, 1-6, 1-7, 1-8, 1-20, 1-21, 1-22, 1-51, 3.1-7, 3.3-16, 3.3-20, 3.3-21, 3.3-22, 3.3-31, 3.3-32, 3.3-36, 3.4-23, 3.4-25, 3.4-33, 3.4-49, 3.5-14, 3.5-37, 3.6-2, 3.6-3 3.6-10, 3.6-12, 3.8-3, 3.8-12, 3.9-5, 3.9-13, 3.10-11, 3.10-12, 3.10-13, 3.11-12, 3.13-2, 3.13-7, 3.13-8, 3.15-21, 3.16-5, 3.16-6, 3.17-6, 3.19-2, 3.19-5, 3.19-9

Positive Train Control (PTC), 3.12-1, 3.12-5

Regional Transportation Improvement Program (RTIP), 1-11, 3.3-2, 3.3-26, 3.3-36, 7-6

Riverside County Integrated Project (RCIP), 1-12, 3.1-1, 3.1-2, 3.14-2, 3.14-24, 3.15-19, 3.19-5

Riverside County Transportation Land Management Agency (TLMA), 3.1-2, 3.1-4

Riverside Transit Agency (RTA), 1-14, 1-81

Safety, ES-12, ES-18, 1-6, 1-7, 1-48, 1-51, 1-52, 1-53, 1-65, 1-67, 1-68, 2-13, 2-17, 2-21, 3.3-1, 3.3-4, 3.4-5, 3.4-6, 3.4-8, 3.5-24, 3.6-10, 3.7-6, 3.8-1, 3.8-2, 3.8-3, 3.8-4, 3.8-5, 3.8-10, 3.8-11, 3.8-12, 3.8-14, 3.9-1, 3.9-2, 3.11-10, 3.12-1, 3.12-2, 3.12-3, 3.12-4, 3.12-5, 3.12-6, 3.12-7, 3.12-8, 3.13-1, 3.13-3, 3.13-2, 3.13-7, 3.15-2, 3.15-5, 3.15-6, 3.15-7, 3.15-20, 3.15-21, 3.17-3, 3.19-2, 3.19-5, 3.19-10School, 1-15, 1-19, 1-52, 3.1-6, 3.1-7, 3.3-21, 3.3-22, 3.4-16, 3.4-21, 3.4-22, 3.4-25, 3.4-30, 3.4-31, 3.4-35, 3.4-45, 3.4-48, 3.4-50, 3.6-3, 3.6-12, 3.6-13, 3.8-3, 3.8-4, 3.8-12, 4-1, 5-2

Southern California Regional Rail Authority (SCRRA), 1, 2, 1-1, 1-2, 1-3, 1-10, 1-13, 1-15, 1-19, 1-20, 1-51, 1-52, 1-66, 1-67, 3.1-9, 3.1-10, 3.3-19, 3.3-22, 3.3-24, 3.3-25, 3.3-34, 3.4-14, 3.4-25, 3.4-46, 3.4-48, 3.8-11, 3.11-11, 3.12-4, 3.12-5, 3.12-6, 3.12-7, 3.12-8, 3.12-9, 3.13-2, 3.13-3, 3.13-7, 3.15-20, 3.17-4, 3.19-2, 3.19-9

Stormwater Pollution Prevention Plan (SWPPP), 3.8-9, 3.14-34, 3.16-4, 3.19-3

University of California Riverside (UCR), 1-3, 1-53, 3.1-6, 3.4-21, 3.4-22, 3.4-25, 3.4-30, 3.4-48, 3.4-49, 3.4-50, 3.6-12, 3.7-3, 3.7-4, 3.11-12, 3.14-37, 3.17-2, 3.17-5, 3.19-4, 3.19-5, 5-2, 5-3

United States Army Corps of Engineers (USACE) 1-81, 3.1-5, 3.14-3, 3.14-23, 3.14-27, 3.14-28, 3.14-29, 3.14-36, 3.17-3, 3.17-7, 7-6

United States Fish and Wildlife Service (USFWS), 3.1-5, 3.10-7, 3.13-8, 3.14-1, 3.14-2, 3.14-3, 3.14-33, 3.14-34, 3.17-3, 3.17-7, 7-7

Western Riverside County Regional Conservation Authority (RCA), 1-80, 3.1-10, 3.1-11, 3.10, 4-1

This Page Intentionally Left Blank