Los Angeles County
Metropolitan Transportation Authority

Link Union Station

DRAFT - Environmental Impact Report

State Clearinghouse No. 2016051071

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Metro

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADI	area of direct impacts
ADSP	Alameda District Specific Plan
ADT	average daily traffic
AF	acre-feet
AFY	acre-feet per year
AGG	Agricultural Supply
AII	area of indirect impacts
AQMP	Air Quality Management Plan
ASTM	American Society for Testing and Materials
bgs	below ground surface
BMP	best management practice
BSA	biological study area
C&D	construction and demolition
CA	Commercial and Artcraft District
ca.	circa
Cal/EPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Projection
CALGreen	California Green Building Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASSP	Cornfield/Arroyo Seco Specific Plan
CBC	California Building Code
CCNCP	Central City North Community Plan
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	construction general permit
CH4	methane
CHC	Cultural Heritage Commission
CHSRA	California High-Speed Rail Authority
City	City of Los Angeles

CMF	Central Maintenance Facility
CMP	Congestion Management Program
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO2e	carbon monoxide equivalent
County	County of Los Angeles
CP	control point
CPUC	California Public Utilities Commission
CREC	controlled recognized environmental condition
CRHR	California Register of Historical Resources
CRMMP	Cultural Resource Mitigation and Monitoring Plan
CWA	Clean Water Act
D/C	demand-to-capacity
dB	decibel
dBA	A-weighted decibels
DPM	diesel particulate matter
DTSC	Department of Toxic Substance Control
EB	eastbound
EIR	environmental impact report
EIS	environmental impact statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ESOC	Emergency Security Operations Center
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Administration
FIRM	Flood Insurance Rate Map
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GWR	groundwater recharge
HABS	Historic American Buildings Survey
HACLA	Housing Authority of the City of Los Angeles
HASP	Health and Safety Plan
HBI	Historic Bridge Inventory
HCM	Historic-Cultural Monument
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
HRA	health risk assessment

HREC	Historic Recognized Environmental Condition
HREC	historic recognized environmental condition
HSA	hydrologic subarea
HSR	High-Speed Rail
HU	hydrologic unit
ID	identification
IGP	industrial general permit
IND	Industrial
LABOE	Los Angeles Bureau of Engineering
LADOT	City of Los Angeles Department of Transportation
LADWP	City of Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAHCM	Los Angeles Historic-Cultural Monument
LASAN	Los Angeles Sanitation
LAUS	Los Angeles Union Station
LBP	lead-based paint
L_{dn}	day-night average noise level
LEED®	Leadership in Energy and Environmental Design®
L_{eq}	equivalent sound level
$L_{eq}[h]$	hourly equivalent sound level
LID	low impact development
Link US	Link Union Station
L_{max}	maximum sound level
L_{min}	Minimum sound level
LOS	level of service
LOSSAN	Los Angeles-San Diego-San Luis Obispo
LST	localized significance threshold
LUC	land use covenant
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
mgd	million gallons of water per day
MGP	Manufactured Gas Plant
MOU	Memorandum of Understanding
MPO	metropolitan planning organization
MRZ	Mineral Resources Zone
MSL	mean sea level
MT	metric tons
MW	megawatt
MWD	Metropolitan Water District of Southern California
N_2	nitrogen
N_2O	nitrous oxide

NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NES (MI)	Natural Environment Study (Minimal Impacts)
NFPA	National Fire Protection Association
NO	nitric oxide
NO_2	nitrogen dioxide
NO_2-N	nitrite-nitrogen
NO_3	nitrate
NO_3-N	nitrate-nitrogen
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OHP	Office of Historic Preservation
OHR	Office of Historic Resources
OHSA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyls
PM	post mile
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
PMP	Paleontological Mitigation Plan
POC	pollutant of concern
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
project	Link Union Station Project
PRPA	Paleontological Resources Preservation Act
PTC	positive train control
RCP	reinforced concrete pipe
REC	recognized environmental condition
RIO	River Improvement Overlay District
ROG	reactive organic gas
ROW	right-of-way
RSA	research study area
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCORE	Southern California Optimized Rail Expansion
SCRIP	Southern California Regional Interconnector Project
SCRRA	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategy
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SOx	sulphur oxide
SSC	species of special concern
SurveyLA	City of Los Angeles Historic Resources Survey
SWIRP	Solid Waste Integrated Resources Plan
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCR	Tribal Cultural Resource
TMDL	total maximum daily load
TMP	Traffic Management Plan
TPH	total petroleum hydrocarbons
U.S.	United States
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
UWMP	Urban Water Management Plan
V/C	volume to capacity
VCE	vertical circulation elements
VdB	velocity decibel
VEC	vapor encroachment condition
VMT	vehicle miles traveled
VOC	volatile organic compound
WB	westbound
WDID	Waste Discharger Identification
WEAP	Worker Environmental Awareness Program
WQAR	Water Quality Assessment Plan
WSAB	West Santa Ana Branch

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ES.0 Executive Summary

ES.1 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) is proposing the Link Union Station (Link US or project) project (proposed project) to transform Los Angeles Union Station (LAUS) from a "stub-end tracks station" into a "run-through tracks station" with a new passenger concourse that would improve the efficiency of the station and accommodate future growth and transportation demands in the region.

This environmental impact report (EIR) has been prepared in compliance with the California Environmental Quality Act (CEQA) Public Resources Code (PRC) Section 21000 et seq. and the CEQA Guidelines (Section 15000 et seq.), as promulgated by the California Resources Agency and the Governor's Office of Planning and Research. The purpose of this environmental document is to disclose the potential environmental impacts associated with the proposed project.

ES.2 Project Location and Study Area

LAUS is located at 800 Alameda Street in the City of Los Angeles (City), California. LAUS is bounded by US-101 to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. Figure ES-1 depicts the regional location and general vicinity of LAUS.

Figure ES-2 depicts the project study area, which encompasses the extent of environmental study associated with potential direct, indirect, and cumulative impacts from implementation of the project. The project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment). The existing conditions within each segment are summarized north to south below.

- Segment 1: Throat Segment – This segment, known as the LAUS throat, includes the area north of the platforms, from Main Street at the north to Cesar Chavez Avenue at the south. In the throat segment, all arriving and departing trains traverse five lead tracks into and out of the rail yard, except for one location near the Vignes Street Bridge where the tracks reduce to four lead tracks. Currently, special track work consisting of multiple turnouts and double-slip switches are used in the throat to direct trains into and out of the appropriate assigned terminal platform tracks.
- Segment 2: Concourse Segment – This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the Garden Tracks (stub-end tracks where private train cars are currently stored, just north of the platforms and adjacent to the existing Gold Line aerial guideway), the East Portal building, the baggage handling building with aboveground parking areas and access roads, the ticketing/waiting halls, and the pedestrian passageway with connecting ramps and stairways below the rail yard.

- Segment 3: Run-Through Segment – This segment is south of LAUS and extends east/west from Alameda Street to the west bank of the Los Angeles River and north/south from Keller Yard to Control Point Olympic. This segment includes US-101, the Commercial Street/Ducommun Street corridor, Metro Red and Purple Lines Maintenance Yard (Division 20 Rail Yard), BNSF West Bank Yard, Keller Yard, the main line tracks on the west bank of the Los Angeles River, from Keller Yard to Control Point Olympic, and the "Amtrak Lead Track" connecting the main line tracks with Amtrak's Los Angeles Maintenance Facility. Businesses within the run-through segment are primarily industrial and manufacturing related.

The project study area has a dense street network ranging from major highways to local city streets. The roadways within the project study area include the El Monte Busway, US-101, Bolero Lane, Leroy Street, Bloom Street, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, Main Street, Aliso Street, Avila Street, Bauchet Street, and Center Street.

ES.3 Project Overview

The proposed project components are summarized north to south below and depicted on Figure ES-3.

- Throat and Elevated Rail Yard – The proposed project includes subgrade and structural improvements in Segment 1 of the project study area (throat segment) to increase the elevation of the tracks leading to the rail yard. The proposed project includes the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail service providers (Metrolink/Amtrak) and accommodate the planned High-Speed Rail (HSR) system within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The rail yard would be elevated approximately 15 feet. New passenger platforms with individualized canopies would be constructed on the elevated rail yard, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (VCEs) (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of Control Point Chavez, the proposed project also includes safety improvements at the Main Street public-at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- Above-Grade Passenger Concourse with New Expanded Passageway – The proposed project includes an above-grade passenger concourse with new expanded passageway in Segment 2 of the project study area (concourse segment). The above-grade passenger concourse with new expanded passageway would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The new passenger concourse would create an opportunity for an outdoor, community-oriented space and enhance Americans with Disabilities

Act (ADA) accessibility at LAUS. The elevated portion of the above-grade passenger concourse would be located above the rail yard, approximately 90 feet above the existing grade with new plazas east and west of the elevated rail yard (East and West Plazas). The new expanded passageway would be located below the rail yard to provide additional passenger travel-path convenience and options. Amtrak ticketing and baggage check-in services would occur at two locations at the east and west ends of LAUS, and new carousels would be constructed within the new expanded passageway. The above-grade passenger concourse includes a canopy over the West Plaza that would be up to 70 feet in height, with individual canopies that would extend up to 25 feet over each platform. New vertical circulation elements would also be constructed throughout the concourse to enhance passenger movements throughout LAUS while meeting ADA and National Fire Protection Association (NFPA) platform egress code requirements.

- Run-Through Tracks – The proposed project includes up to 10 new run-through tracks (including a new loop track) south of LAUS in Segment 3 of the project study area (run-through segment). The run-through tracks would facilitate connections for regional/intercity rail trains and HSR trains from LAUS to the main line tracks on the west bank of the Los Angeles River. A "common" viaduct/deck over US-101 and embankment south of US-101, from Vignes Street to Center Street, would be constructed wide enough to support regional/intercity rail run-through service, and future run-through service for the planned HSR system.

The proposed project would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control (PTC), and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad right-of-way (ROW); additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

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Figure ES-1. Project Location and Regional Vicinity

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Figure ES-2. Project Study Area

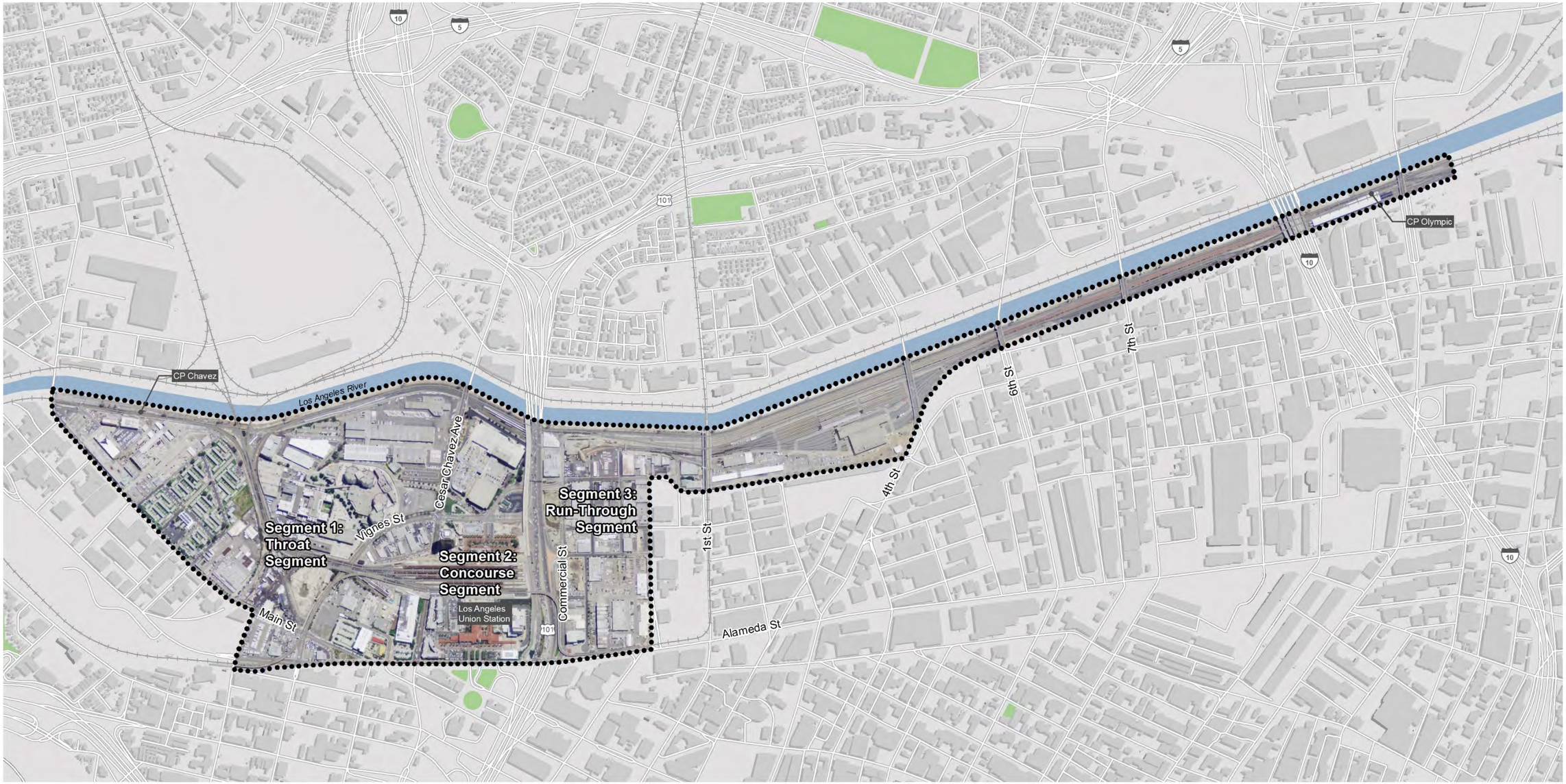

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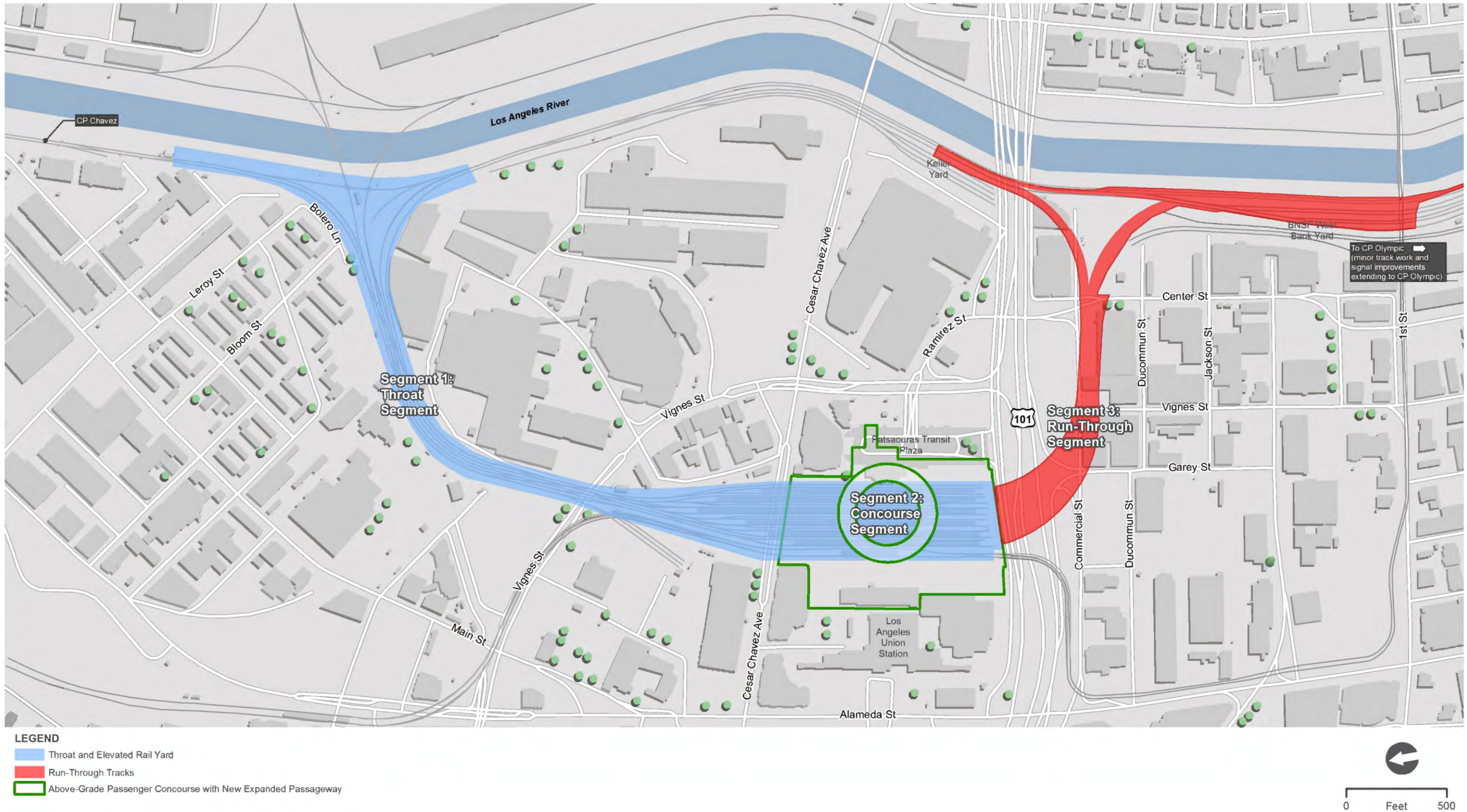
Figure ES-3. Major Project Components



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ES.4 Project Objectives

Metro identified the following objectives for implementing the proposed project:

- Reduce train movement constraints resulting from stub-end operation by providing run-through service consistent with the *California State Rail Plan* (Caltrans 2018) and Southern California Optimized Rail Expansion (SCORE) Program
- Provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities
- Design track and platform infrastructure at LAUS necessary to accommodate the planned HSR system consistent with California Proposition 1A (High-Speed Rail Act), passed in 2008
- Maintain rail/transit service and minimize disruption to commuters during construction to the maximum extent feasible
- Avoid and minimize impacts on sensitive environmental resources to the maximum extent feasible, including, but not limited to, historical resources
- Contribute to a regional reduction of greenhouse gas (GHG) emissions and vehicle miles traveled (VMT)

ES.5 Anticipated Agency Involvement

The following agencies are anticipated to be involved during project development and construction:

- Federal Railroad Administration (FRA)
- California High-Speed Rail Authority (CHSRA)
- Southern California Regional Rail Authority (SCRRA)
- California Department of Transportation (Caltrans)
- Federal Transit Administration (FTA)
- City of Los Angeles
- State Historic Preservation Officer (SHPO)
- City of Los Angeles
- Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency
- Amtrak
- California Environmental Protection Agency (Cal/EPA)
- California Division of Occupational Safety and Health
- Native American Heritage Commission (NAHC)

- California Public Utilities Commission (CPUC)
- California Department of Toxic Substances Control (DTSC)
- Regional Water Quality Control Board (RWQCB), Region 4
- Southern California Association of Governments (SCAG)
- South Coast Air Quality Management District (SCAQMD)

ES.6 CEQA Responsible and Trustee Agencies

The information in this EIR may also be used by other agencies involved with the project that have a responsibility under CEQA, including, but not limited to, the following:

- Caltrans
- CHSRA
- SCRRA
- City of Los Angeles

The California Department of Fish and Wildlife (CDFW) is a CEQA trustee agency (Section 15386[a] of the CEQA Guidelines) and must be notified if the project involves fish and wildlife of the state's rare and endangered native plants, wildlife areas, and ecological reserves.

ES.7 Anticipated Permits, Discretionary Actions, and Agency Approvals

The CEQA Guidelines require that an EIR identify the regulatory approvals anticipated for a project. This includes a list of responsible agencies other than the lead agency, which have discretionary approval authority over the project. The following agencies, at minimum, are expected to use this EIR for project-related discretionary actions and permitting processes:

- Metro – Metro is responsible for adopting findings of fact, a mitigation monitoring and reporting program, and a statement of overriding considerations, along with certifying the EIR. Metro, as the project owner, would also be responsible for administering construction of the project.
- Caltrans – Caltrans is responsible for issuing an encroachment permit for proposed infrastructure within Caltrans ROW.
- City of Los Angeles – The City of Los Angeles is responsible for processing any general plan amendment that may be required for project-related roadway modifications and/or street vacations to reclassify roadways as appropriate within the *Mobility Plan 2035* (City of Los Angeles 2015). The City of Los Angeles may also require the contractor to seek approvals or exceptions to nighttime

noise restrictions during construction. Approvals for civil/public works improvements and/or traffic signal timing modifications may also be required.

- CHSRA – CHSRA is responsible for implementation of the planned HSR system through the project limits. The Link US EIR accommodates the planned HSR system and proposed infrastructure and is anticipated to be reflected as an existing condition in the environmental documents prepared for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

Cooperative third-party agreements would be established between Metro and a variety of public and private entities to implement various project-related infrastructure improvements.

ES.8 Summary of Impacts and Mitigation Measures

Table ES-1 summarizes project-related environmental impacts, mitigation measures, and level of significance after implementation of proposed mitigation if applicable. Detailed analyses of these topics are provided in Section 3.2 through Section 3.13 of this EIR.

ES.9 Significant and Unavoidable Environmental Impacts

Section 15216.2(b) of the CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Sections 3.2 through 3.13 of this EIR provide a detailed analysis of all significant environmental impacts related to the project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to a level less than significant. Section 4.0, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined impacts of the project and related projects considered in cumulative analysis. If a specific impact in either of these sections cannot be fully reduced to a less than significant level, it is considered a significant and unavoidable impact.

Implementation of the proposed project would result in significant and unavoidable impacts in the following issue areas: transportation, air quality, noise, and cultural resources. The following impacts would be significant and unavoidable even after the implementation of mitigation:

Construction (Short-Term)

- Air quality (construction emissions would exceed the SCAQMD's daily criteria pollutant and localized significance thresholds)
- Noise (construction daytime and nighttime noise levels would exceed thresholds at William Mead Homes and Mozaic Apartments)

Operations (Long-Term)

- Traffic (increased delays at one intersection [Intersection #2: Garey Street and Commercial Street] in the 2031 and 2040 with project conditions would exceed the City of Los Angeles Department of Transportation [LADOT] guidelines)
- Cultural resources (substantial adverse change in the significance of the following historical resources: LAUS and Vignes Street Undercrossing and Friedman Bag Company – Textile Division Building)

If the Metro Board approves the project with significant and unavoidable impacts, Metro is required under CEQA to prepare a statement of overriding considerations.

ES.10 Project Alternatives

Section 15126.6(a) of the CEQA Guidelines requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." A summary of the alternatives evaluated in this EIR is provided below:

- No Project/No Build Alternative – The no project/no build alternative assumes that the project would not be implemented. LAUS would not be transformed from a stub-end tracks station into a run-through tracks station and the 28-foot-wide pedestrian passageway would continue to serve as the primary east to west connection for passengers at LAUS. Due to the constraints of the current stub-end configuration, train movements through LAUS are assumed to be similar to existing conditions. Operational capacity at LAUS would not be enhanced to meet the demands of the broader rail system, thereby further constraining Metro's ability to accommodate forecasted travel demands at LAUS.
- Build Alternative – The primary differences between the proposed project and the build alternative are related to the lead tracks north of LAUS and the new passenger concourse. The build alternative includes reconstruction of the throat with two new lead tracks that would occur outside of the existing railroad ROW, thereby facilitating a dedicated track alignment with a total of seven lead tracks. Reconfiguration of Bolero Lane and Leroy Street would be required. The build alternative includes an at-grade passenger concourse. All other infrastructure elements are similar to the proposed project.
- Reduced Historic Impact Alternative – The purpose of the reduced historic impact alternative is to avoid or substantially reduce the significant impacts on historical resources, archaeological resources, and paleontological resources. The reduced historic impact alternative includes preservation of the existing pedestrian passageway, reuse of the existing historic butterfly shed canopy structures, preservation of the Cesar Chavez Avenue and Vignes Street Undercrossings, and no modifications to the North Main Street Bridge.

A detailed discussion of the alternatives to the proposed project is provided in Section 5.0, Alternatives, of this EIR.

ES.11 CEQA Environmentally Superior Alternative

The no project/no build alternative would avoid the construction and operational impacts identified for the proposed project. However, the no project/no build alternative does not meet the project objectives. Additionally, CEQA Guidelines, Section 15126.6(e) requires that, if the environmentally superior alternative is the "no project alternative," the EIR shall also identify an environmental superior alternative among the other alternatives.

Compared with the proposed project, the reduced historic impact alternative would reduce impacts on cultural resources (historical resources, archaeological resources, and paleontological resources). Therefore, the reduced historic impact alternative is considered the environmentally superior alternative. This alternative would meet all of the project objectives, with exception of providing an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities.

ES.12 Areas of Controversy

Section 15123(b)(2) of the CEQA Guidelines require that an EIR identify areas of controversy known to the lead agency, including issues raised by agencies and the public.

During the public comment period for the Notice of Preparation (NOP), various comment letters were received regarding the project. The comments submitted on the NOP during the public review and comment period are included in Appendix A of this EIR. In general, areas of potential controversy known to Metro include cultural resources and construction impacts (traffic, air quality, noise and vibration, and water quality). These issues were considered in the preparation of this EIR, where appropriate, and are addressed in the environmental impact analysis presented in Sections 3.2 through 3.13 of this EIR. Areas of known controversy are briefly summarized below.

- *Cultural Resources* – Multiple cultural resources are located within the project study area. These resources include, but are not limited to, LAUS, United States (U.S.) Post Office-Los Angeles Terminal Annex, William Mead Homes, Mission Tower, Macy Street School, Thomas Barabee Warehouse & Store, Friedman Bag Company—Textile Division Building, and five bridges that cross the Los Angeles River. A tribal cultural resource and archeological site, Archaeological Site P-001575, has also been identified within the project study area.
- *Construction Impacts* – Concerns related to construction of the project were identified as they would relate to the following issue areas:
    - *Traffic* – Roadways and intersections may be subject to temporary detours and lane blockages. There is the potential for impacts on the state highway system, including US-101.

- *Noise* – Noise may exceed applicable noise standards and would impact sensitive receptors.
- *Air Quality* – Construction of the project may have potential air quality and health risk impacts on nearby sensitive receptors.
- *Water Quality* – Construction of the project may result in storm water runoff and result in potential impacts on impaired water bodies.
- *Hazardous Materials* – There is the potential to encounter contaminated soils or other media contaminated with hazardous materials during construction.

ES.13 Issues to be Resolved by the Decision-Making Body

Section 15123(b)(3) of the CEQA Guidelines requires a discussion of issues to be resolved, including a choice of alternatives and whether or how to mitigate significant impacts. The Metro Board will decide if the significant impacts associated with land use and planning, transportation and traffic, aesthetics, air quality, noise, biological resources, hydrology and water quality, geology and soils, hazards and hazardous materials, utilities/service systems and energy conservation, cultural resources, and public services have been fully mitigated to below a level of significance. Additionally, the Board will determine whether overriding considerations should be adopted for significant and unavoidable impacts associated with transportation and traffic, air quality, noise, and cultural resources. The Board will also decide whether any of the project alternatives substantially reduces significant impacts while still meeting the key project objectives and whether one of the alternatives could be approved.

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.2, Land Use and Planning			
Threshold 3.2-A: Physically Divide an Established Community. The proposed project would not physically divide an established community.	*Construction* No Impact *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* No Impact *Operations* Less than Significant *Indirect* No Impact
Threshold 3.2-B: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. *Operations* Potential conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River.	*Construction* Less than Significant *Operations* Significant *Indirect* No Impact	*Operations* **LU-1 Implement Transportation Demand Management Measures to Enhance Neighborhood Connectivity:** Metro shall implement a transportation demand management program to enhance neighborhood connectivity while also minimizing the demand for trips by single-occupant vehicles in the project study area. Metro, in coordination with the City of Los Angeles, shall provide future connections from LAUS to the Los Angeles River that could include, but not limited to, one or more of the following infrastructure improvements in the project study area: • Dedicated bicycle/pedestrian bridge over US-101 from LAUS to the Los Angeles River • New bicycle lanes along Commercial Street between Garey Street and Alameda Street	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Active transportation infrastructure shall be coordinated with the City of Los Angeles and designed and constructed to maximize non-motorized connectivity in the project study area.	
Section 3.3, Transportation and Traffic			
Threshold 3.3-A: Impact Local Traffic Plans, Policies, or Ordinances. *Construction* In the 2031 plus project construction condition, significant delays would occur at the following three intersections per LADOT guidelines: • Intersection #2: Garey Street and Commercial Street • Intersection #10: Alameda Street and Los Angeles Street WB • Intersection #15: Vignes Street and Main Street *Operations* In the 2031 and 2040 with project condition, significant impacts would occur at two intersections due to project-related increase in traffic delays that would exceed LADOT guidelines:	*Construction* Significant *Operations* Significant *Indirect* No Impact	*Construction* **TR-1** **Prepare a Construction TMP:** During the final engineering phase and at least 30 days prior to construction, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro, LADOT, and Caltrans, where applicable. The street closure schedules in the construction TMP shall be coordinated between the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. During planned closures, traffic shall be re-routed to adjacent streets via clearly marked detours and notice shall be provided in advance to applicable parties (nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as	*Construction* Less than Significant *Operations* Significant and Unavoidable *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
• Intersection #2: Garey Street and Commercial Street • Intersection #4: Center Street and Commercial Street		construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours so as to avoid heavily congested areas during peak hours, where feasible. The following provisions shall be included in the TMP: • Traffic flow shall be maintained, particularly during peak hours, to the degree feasible. • Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, and residences at all times, as feasible. • Metro or the contractor shall post advance notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction. • Metro shall notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions. • Metro shall coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to mitigate detoured traffic volumes. • Closed-circuit television cameras shall be installed at some of the impacted intersections (as approved by LADOT) to monitor traffic in real-time by the	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Automated Traffic Surveillance and Control department of LADOT during construction. This will allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements. *Operations* **TR-2** **Install Traffic Signal:** Metro shall install a new traffic signal at the intersection of Center Street and Commercial Street. **LU-1** **Implement Transportation Demand Management Measures to Enhance Neighborhood Connectivity**	
Threshold 3.3-D: Create or Increase Hazards from Project Design Features. *Construction* Construction activities would result in temporary construction-related roadway hazards in the traffic study area. Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations throughout the traffic study area. The US-101 main line and on- and off-ramps at Commercial Street would be also be subject to temporary lane width reductions. Additionally, short-radius	*Construction* Significant *Operations* Less than Significant *Indirect* No Impact	*Construction* **TR-1** **Prepare a Construction TMP**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
curves and/or short sight distances may occur during construction.			
Threshold 3.3-E: Result in inadequate emergency access. *Construction* The proposed project would interfere with emergency response times and access. Significant delays anticipated at three intersections during construction would affect traffic along Commercial, Alameda, and Vignes Streets. Construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could interfere with emergency response and access.	*Construction* Significant *Operations* Less than Significant *Indirect* No Impact	*Construction* **TR-1** **Prepare a Construction TMP**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.3-F: Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. *Construction* The proposed project could cause decreased performance for rail operators at LAUS, modifications to LADOT's Dash Route D bus schedule,	*Construction* Significant *Operations* Significant *Indirect* No Impact	*Construction* **TR-1** **Prepare a Construction TMP** **TR-3** **Prepare Rail Operations Agreements and Temporary Construction Service Plan:** During final engineering design and prior to construction, Metro shall establish rail operating agreements and/or memorandums with each current rail operator, including but not limited to Metrolink and Amtrak, to outline mutually agreed upon on-time performance objectives to be achieved throughout construction, and how construction sequencing and railroad operational	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
and hazardous conditions along existing pedestrian/bicycle routes. *Operations* The proposed project would conflict with the City's Mobility Plan 2035 Policy 2.12.		protocols will be incorporated into applicable construction documents (plans and specifications), and implemented to maintain the mutually agreed upon on-time performance during construction. Prior to construction, Metro and the construction contractor shall prepare detailed construction phasing plans for each phase of construction that identify appropriate means and methods to maintain mutually agreed upon on-time performance objectives while minimizing impacts on pedestrians and passengers at LAUS. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to establish temporary construction detours for passengers that correspond to detailed construction phasing plans to minimize impacts on passenger transfer times. Detailed construction phasing plans shall be deemed acceptable by the current rail operators prior to commencement of construction activities that could reduce on-time performance. Throughout the duration of construction, Metrolink shall participate in weekly construction coordination meetings to evaluate the efficiency of the measures in place to achieve the mutually agreed upon on-time performance, and shall coordinate with Metro and construction contractor to implement changes to means and methods during construction to ensure the performance objectives are maintained at an	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		acceptable level throughout construction of the project. *Operations* **LU-1** **Implement Transportation Demand Management Measures to Enhance Neighborhood Connectivity**	
Section 3.4, Aesthetics			
Threshold 3.4-C: Substantially degrade the existing visual character or quality of the site or its surroundings. *Operations* The proposed project would present new linear infrastructure elements that would be a dominant feature substantially larger than any of the current surroundings within the William Mead Homes residential community.	*Construction* Less than Significant *Operations* Significant *Indirect* No Impact	*Operations* **AES-1** **Aesthetic Treatments:** Retaining walls in Segments 1 and 2 and the sound wall in Segment 1 shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes and Mozaic Apartments. Based on feedback received during project development from residents of the William Mead Homes property, Metro shall coordinate with HACLA regarding aesthetic enhancements to the retaining wall/sound wall at that location. Materials, color, murals, landscaping, and/or other aesthetic treatments shall be integrated into the design of the retaining wall/sound wall to minimize the dominance and scale of the retaining wall/sound wall.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.4-D: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.	*Construction* Significant *Operations* Significant	*Construction* **AES-2** **Minimize Nighttime Work and Screen Direct Lighting:** Nighttime construction activities near residential areas shall be avoided to the extent feasible. If nighttime work is required, the	*Construction* Less than Significant *Operations* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Construction Residences of Mozaic Apartments and William Mead Homes would be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction. *Operations* On each of the seven elevated platforms, new lighting would be incorporated into the design for safety purposes, which may result in added light for some of the units in the Mozaic Apartments, if not properly designed and installed. The new platform canopies also have the potential to result in additional daytime glare.	*Indirect* No Impact	construction contractor shall install temporary lighting in a manner that directs light toward the construction area and shall install temporary shields as necessary so that light does not spill over into residential areas. *Operations* **AES-3** **Screen Direct Lighting and Glare:** During final design, all new or replacement lighting shall comply with maximum allowable CALGreen glare ratings (California Building Standards Code 2013 – Title 24, Part 11) and shall be designed to be directed away from residential units. Screening elements, including landscaping, shall also be incorporated into the design, where feasible. Low-reflective glass and materials shall also be utilized as part of the above-grade passenger concourse and the new canopies design to reduce daytime glare impacts.	*Indirect* No Impact
Section 3.5, Air Quality and Global Climate Change			
Threshold 3.5-A: Conflict with or obstruct implementation of the applicable air quality plan. The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	*Construction* No Impact *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* No Impact *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.5-B: Violate any air quality standard or contribute substantially to an existing or projected air quality violation. **Threshold 3.5-C: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors).** *Construction* Construction emissions associated with the proposed project would exceed the SCAQMD's daily criteria pollutant and localized significance thresholds. *Operations* During operations, the net increase in daily emissions would exceed the SCAQMD thresholds for NO_x.	*Construction* Significant *Operations* Significant *Indirect* Beneficial Impact	*Construction* **AQ-1** **Fugitive Dust Control:** In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403: • Minimize land disturbed by clearing, grading, and earth moving, or excavation operations to prevent excessive amounts of dust • Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done • Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes • Securely cover trucks when hauling materials on or off site • Stabilize the surface of dirt piles if not removed immediately	*Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Beneficial Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads • Minimize unnecessary vehicular and machinery activities • Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway • Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities The following measures shall also be implemented to reduce construction emissions: • Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy • Ensure that all construction equipment is properly tuned and maintained • Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible • Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable • These control techniques shall be included in project specifications and shall be implemented by the construction contractor. AQ-2 **Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment:** In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel. *Operations* **AQ-3** **Adaptive Air Quality Mitigation Plan:** Prior to implementation of regional/intercity rail run-through service, an Adaptive Air Quality Mitigation Plan shall be prepared by Metro, in coordination with the SCRRA, as the operator of the commuter rail service in Southern California and the program manager and grant recipient of the SCORE Program, Amtrak, and the LOSSAN Rail Corridor Agency. The Plan shall identify the methodology and requirements for annual emission inventories to be prepared by Metro, based on actual/current train movements and corresponding pollutant concentrations through the Year 2040. ***Mitigation Plan Requirements:*** Upon implementation of regional/intercity run-through service, and on an annual basis, Metro shall compile and summarize the current Metrolink, Pacific Surfliner, and Amtrak long-distance train schedules to determine the actual level of daily and peak-period train movements (including	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		non-revenue train movements) that operate through LAUS. On an annual basis, Metro shall retain the services of an air quality specialist to conduct an annual emissions inventory to determine if actual train movements through LAUS are forecasted to increase criteria pollutant emissions to a level that would exceed the SCAQMD significance thresholds or diesel pollutant concentrations to a level that would exceed the SCAQMD's 10 in a million threshold at any residential land use in the project study area. An annual report shall be prepared by Metro that summarizes the quantitative results of pollutant emissions and diesel pollutant concentrations in the project study area. If pollutant emissions and diesel pollutant concentrations are projected to exceed the SCAQMD thresholds, the regional and intercity rail operators in coordination with Metro and California State Transportation Agency, shall either implement rail fleet emerging technologies consistent with *2018 California State Rail Plan* Goal 6: *Practice Environmental Stewardship*, Policy 4: *Transform to a Clean and Energy Efficient Transportation System* (Caltrans 2018a, pg. 10 and 110), or reduce the train movements through LAUS to lower the criteria pollutant emissions below the SCAQMD significance thresholds and the diesel pollutant concentrations below the SCAQMD thresholds in the project study area.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		After implementation of emerging technologies, Metro shall continue to prepare an emissions inventory in coordination with SCRRA, Amtrak, and the LOSSAN Rail Corridor Agency annually to report the quantitative results of criteria pollutant emissions and diesel pollutant concentrations in the project study area. The annual report shall include an analysis of the actual (current) and proposed changes in train schedules relative to criteria pollutant emissions and diesel pollutant concentration levels in the project study area. The report shall be prepared annually by December 31 of each year, beginning the calendar year after implementation of regional/intercity rail run-through service through 2040 and shall include results of the emissions inventory and effectiveness of the measures implemented. ***Rail Fleet Emerging Technologies:*** To achieve a reduction of criteria pollutant emissions below the SCAQMD thresholds and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds, the regional and intercity rail operators may replace, retrofit, or supplement some or all of their existing fleet with zero or low-emission features. The types of emerging technologies that can be implemented, include, but are not limited to the following: • Electric multiple unit systems • Diesel multiple units • Battery-hybrid multiple units	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Renewable diesel and other alternative fuels Metro shall coordinate with regional rail/intercity rail operators to incorporate these emerging technologies into existing and/or future funding and/or operating agreements to reduce locomotive exhaust emissions in the project study area.	
Threshold 3.5-D: Expose sensitive receptors to substantial pollutant concentrations. *Construction* The peak cancer risks during construction exceed the SCAQMD's threshold of 10 in 1 million. *Operations* During operations, when compared with conditions without the project, the project-related increase in cancer risk would exceed SCAQMD's threshold of 10 in 1 million.	*Construction* Significant *Operations* Significant *Indirect* Beneficial Impact	*Construction* **AQ-1** **Fugitive Dust Control** **AQ-2** **Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment** *Operations* **AQ-3** **Adaptive Air Quality Mitigation Plan**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Beneficial Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.5-E: Create objectionable odors affecting a substantial number of people. The proposed project would not create objectionable odors affecting a substantial number of people.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.5-F: Generate greenhouse gas emissions, either directly or indirectly, that may have an adverse effect on the environment. The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have an adverse effect on the environment. Although not required to mitigate a significant impact, proposed air quality mitigation would further reduce greenhouse gas emissions.	*Construction and Operations* Beneficial Impact *Indirect* No Impact	**AQ-2 Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards** **AQ-3 Adaptive Air Quality Mitigation Plan**	*Construction and Operations* Beneficial Impact *Indirect* No Impact
Threshold 3.5-G: Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	*Construction and Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction and Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.6, Noise and Vibration			
Threshold 3.6-A: A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. **Threshold 3.6-C: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.** *Operations* In the 2031 and 2040 conditions, the proposed project would result in severe noise impacts on William Mead Homes.	*Operations* Significant *Indirect* Less than Significant	*Operations* **NV-1** **Construct Sound Wall**: Prior to reaching the forecasted maximum daily regional/intercity train movements through LAUS in 2031 (770 trains), Metro shall construct a sound wall up to 22 feet in height to reduce operational noise impacts at William Mead Homes. The sound wall shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have an approximate sound transmission class rating of 50 and a surface density of at least 4 pounds per square foot. Metro may construct the sound wall earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.	*Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.6-B: Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. *Construction* Because construction would occur within 300 feet of an impact pile driver and 140 feet of the vibratory roller from sensitive land uses, a severe impact would occur related to William Mead	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **NV-2** **Employ Noise- and Vibration Reducing Measures during Construction:** The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Noise and vibration reduction measures that would be implemented include, but are not limited to, the following: • Design considerations and project layout:	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Homes and Mozaic Apartments from an annoyance perspective.		o Construct temporary noise walls, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers o Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available o Site equipment on the construction site as far away from noise-sensitive sites as possible o Construct walled enclosures around especially noisy activities or clusters of noisy equipment (i.e., shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures) • Sequence of operations: o Restrict pile driving to daytime periods o Combine noisy operations to occur in the same time period ▪ The total noise level produced would not be significantly greater than the level produced if the operations were performed separately	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		o Avoid nighttime activities to the maximum extent feasible ▪ Sensitivity to noise increases during the nighttime hours in residential neighborhoods • Alternative construction methods: o Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible ▪ Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use o Use specially-quieted equipment, such as quieted and enclosed air compressors and properly-working mufflers on all engines o Select quieter demolition methods, where possible (e.g., sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers) In an effort to keep construction noise levels below FTA's construction noise or vibration criteria, Metro shall monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		construction noise and vibration monitoring shall be conducted at the first row of residences at William Mead Homes and Mozaic Apartments, within 300 feet of construction activities, approximately). Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance further away. If FTA's construction noise or vibration criteria are exceeded, the contractor shall be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (examples above).	
		NV-3 **Prepare a Community Notification Plan for Project Construction:** To proactively address community concerns related to construction noise and vibration, prior to construction, Metro and/or the construction contractor shall prepare and maintain a community notification plan. Components of the plan shall include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Updates to the plan shall be prepared as necessary to indicate changes to the construction schedule or other processes. Metro shall identify a project liaison to be available to respond to questions from the community or other interested groups.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.6-D: A substantial temporary or periodic increase in ambient noise levels existing without the project. *Construction* Construction-related noise would exceed FTA's construction noise guidelines at sensitive receptors nearest to the project, including the William Mead Homes and Mozaic Apartments. *Operations* In the 2031 and 2040 conditions, the proposed project would result in severe noise impacts on William Mead Homes.	*Construction* Significant *Operations* Significant *Indirect* Less than Significant	*Construction* **NV-2** **Employ Noise- and Vibration Reducing Measures during Construction** **NV-3** **Prepare a Community Notification Plan for Project Construction** *Operations* **NV-1** **Construct Sound Wall**	*Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Less than Significant
Section 3.7, Biological Resources			
Threshold 3.7-A: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	*Construction* Significant *Operations* Less than Significant *Indirect* Significant	*Construction* **BIO-1** **Bats:** Preconstruction surveys for roosting special-status bats (including western mastiff bats and western yellow bats) and other native bat species shall be conducted by a Metro-approved qualified bat biologist within 2 weeks prior to construction. Surveys shall be conducted where suitable habitat and/or bridge structures that will be removed or that will have modifications to the substructure are present. All locations with suitable roosting habitat (including potential maternity roosts) shall be surveyed	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Construction and Indirect Potential Impacts on: • Two California Species of Special Concern (western mastiff bat and western yellow bat) o Potential impacts on western mastiff bats as a result of construction activities in the vicinity of bridges o Potential impacts on western yellow bats as a result of removal of naturally occurring or planted (ornamental) trees, including palm trees • Maternity bat roost sites • Nesting birds protected under federal Migratory Bird Treaty Act		using an appropriate combination of structure inspection, exit counts, acoustic surveys, or other suitable methods. Surveys shall be conducted during the appropriate season and time of day/night to ensure detection of day- and night-roosting bats (i.e., preferably one daytime and one nighttime survey shall be conducted at each location with suitable roosting habitat during the maternity season, May 1 through August 31). If no roosts are detected, trees that provide suitable roosting habitat may be removed under the guidance of the qualified bat biologist. If a roost is detected, passive exclusion shall include monitoring the roost for 3 days to determine if the roost is active. If the roost is determined to support a reproductive female with young, the roost shall be avoided until it is no longer active. If the roost remains active during the 3 monitoring days and observations confirm it is not a maternity colony, a temporary bat exclusion device shall be installed under the supervision of a Metro-approved qualified bat biologist. At the discretion of the biologist, based on his or her expertise, an alternative roosting structure(s) may be constructed and installed prior to the installation of exclusion devices. Exclusion shall be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or torpid (overwintering) individuals during the winter. If it cannot be determined whether an active roost site supports a maternity	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		colony, the roost site shall not be disturbed, and construction within 300 feet shall be postponed or halted until the roost is vacated and the young are volant (able to fly). Exclusion efforts shall be monitored on a weekly basis and continued for the duration of project construction activities and removed when no longer necessary. The following avoidance and minimization measures shall be implemented during construction: • All work conducted on bridges shall occur during the day. If this is not feasible, lighting and noise shall be directed away from night roosting and foraging areas. • Combustion equipment (such as generators, pumps, and vehicles) shall not be parked or operated under a bridge. Construction personnel shall not be present directly under a roosting colony. Construction activities shall not severely restrict airspace access to the roosts. • Removal of mature trees that provide suitable bat roosting habitat shall be conducted outside of the maternity season (May 1 through August 31); that is, removal shall be conducted between September 1 and April 30. Because bats may be present in a torpid state during the winter, suitable roosting habitat shall be removed before the onset of cold weather	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		(approximately November 1) or as determined by a qualified bat biologist). • When removing palm trees, the dead fronds shall be removed first before felling the palm to allow any bats to escape. **BIO–2** **MBTA Species:** Vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a Metro-approved qualified bird biologist shall conduct preconstruction surveys to locate active nests within 7 days prior to vegetation removal in each area with suitable nesting habitat. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be reduced based on species-specific and site-specific conditions as determined by the qualified biologist. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active. Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		suitable nest sites at the bridges that will be removed or that will have modifications to the substructure before the nesting season (February 1 through September 30) to prevent nesting at the bridges by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA. In addition, if work on existing bridges with potential nest sites that will be removed or that will have modifications to the substructure is to be conducted between February 1 and September 30, all bird nests shall be removed prior to February 1. Immediately prior to nest removal, a qualified biologist shall inspect each nest for the presence of torpid bats, which are known to use old swallow nests. Nest removal shall be conducted under the guidance and observation of a qualified biologist. Removal of swallow nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion unless a nest exclusion device has already been installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.7-D: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.7-E: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. *Construction and Indirect* The proposed project may require the removal or disturbance of one or more native tree species that are considered a Protected Tree under the City of Los Angeles Tree Ordinance.	*Construction* Significant *Operations* Less than Significant *Indirect* Significant	*Construction and Indirect* **BIO-3** **Protected Trees:** Preconstruction surveys for protected trees (native trees 4 inches or more in cumulative diameter, as measured at 4.5 feet above the ground level, that are subject to protection under Ordinance No. 177404, Preservation of Protected Trees of the City of Los Angeles' municipal code, including oaks, southern California black walnut, western sycamore, and California bay), shall be conducted by a registered consulting arborist with the American Society of Consulting Arborists at least 120 days prior to construction. The locations and sizes of all protected trees shall be identified prior to construction and overlaid on project footprint maps to determine which trees may be	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		protected in accordance with Ordinance No. 177404. The registered consulting arborist shall prepare a Protected Tree Report and shall submit three copies to the City of Los Angeles Department of Public Works. Any protected trees that must be removed due to project construction shall be replaced at a 2:1 ratio (or up to a 4:1 ratio for protected trees on private property) except when the protected tree is relocated on the same property, the City of Los Angeles has approved the tree for removal, and the relocation is economically reasonable and favorable to the survival of the tree. Each replacement tree shall be at least a 15-gallon specimen, measuring 1 inch or more in diameter, 1 foot above the base, and shall be at least 7 feet in height measured from the base.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.8, Hydrology and Water Quality			
Threshold 3.8-A: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.8-B: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on or off site. *Construction* The proposed project would require substantial amounts of grading and excavation to reconfigure existing drainage patterns and ensure that connections to existing drainage infrastructure are maintained and/or	*Construction* Significant *Operations* Significant *Indirect* No Impact	*Construction* **HWQ-1** **Prepare and Implement a SWPPP:** During construction, Caltrans, Metro, and CHSRA shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002), and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), as they relate to project construction activities. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
improved. Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, if not properly managed. *Operations* The proposed project would result in alterations to the existing drainage patterns in the project study area that could result in localized flooding if not properly managed.		Tracking System. The contractor shall implement all required aspects of the SWPPP during project construction. Caltrans, Metro, and CHSRA shall comply with the Risk Level 1 sampling and reporting requirements of the CGP. A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to SWRCB within 90 days of completion of construction and stabilization of the site. *Operations* **HWQ-2** **Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW):** Metro shall comply with the provisions of the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), effective July 1, 2013 (known as the Caltrans MS4 permit). This post-construction requirement would only apply to the US-101 overhead viaduct improvements. Metro shall prepare a stormwater data report for the plans, specifications, and estimate phase that will address post-construction BMPs for the US-101 overhead viaduct in accordance with the Caltrans *Project Planning and Design Guide* (latest edition).	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		HWQ-3 **Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW):** For the portion of the project outside Caltrans ROW that accommodates the planned HSR system, Metro shall comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), effective July 1, 2013 (known as the Phase II permit). This post-construction requirement only applies to CHSRA facilities. **HWQ-4** **Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA):** Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2012-0175, NPDES No. CAS004001), effective December 28, 2012 (known as the Phase I Permit). This post-construction requirement shall apply to the entire project except for those portions under the jurisdiction of the Caltrans MS4 Permit and CHSRA's Phase II Permit. Metro shall prepare a final LID report in accordance with the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (LID Manual), May 9, 2016. This document shall identify the required BMPs to be in place prior to project operation and maintenance.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		HWQ-5 **Long-Term MOU:** An MOU shall be executed prior to completion of the final engineering design and before approval of the corresponding plans, specifications, and estimate phase of the project. The MOU shall clarify and addresses overlapping, multiagency MS4-related technical, financial, legal, and other responsibilities for the design, construction, and operational phases of the project. Agencies involved in the MOU shall include, but not be limited to, Caltrans, CHSRA, and Metro. The MOU shall address, but not be limited to, the stormwater runoff quality to be conveyed and accepted among the affected parties.	
Threshold 3.8-C: Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. *Construction* If not properly managed, sediments, petroleum products, and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. *Operations*	*Construction* Significant *Operations* Significant *Indirect* No Impact	*Construction* **HWQ-1** **Prepare and Implement a SWPPP** *Operations* **HWQ-2** **Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-3** **Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW)** **HWQ-4** **Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-5** **Long-Term MOU**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
An overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and exceed the capacity of some on-site drainage systems.			
Threshold 3.8-D: Expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. The proposed project would not expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.8-E: Violate any water quality standards or waste discharge requirements. **Threshold 3.8-G: Otherwise substantially degrade water quality.** *Construction* Construction activities could result in a significant impact on water quality and exceed water discharge requirements if runoff is not properly managed.	*Construction* Significant *Operations* Significant *Indirect* Significant	*Construction* **HWQ-1** **Prepare and Implement a SWPPP** **HWQ-6** **Comply with Local Dewatering Requirements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Operation Minor amounts of oil and grease would originate from train cars during operation, which could discharge oil, grease, and other chemical pollutants into existing drainage systems. *Indirect* The proposed project could result in on- and off-site discharges that could indirectly impact downstream surface waters by increasing scour and/or sedimentation.		wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, respectively. **HWQ-7** **Comply with Local Dewatering Requirements for Contaminated Sites:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites affected during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Los Angeles, respectively. *Operations* **HWQ-2** **Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-3** **Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW)**	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		HWQ-4 **Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-5** **Long-Term MOU** *Indirect* **HWQ-2** **Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-3** **Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW)** **HWQ-4** **Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-5** **Long-Term MOU** **HWQ-8** **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses:** Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.8-F: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site. *Construction* During construction, it may be necessary for the contractor to reroute drainage around one or more construction areas, which, in turn, may concentrate runoff and/or direct it off site, thereby resulting in substantial erosion on adjacent properties, if not properly managed. *Operations* The proposed project would result in an increase of impervious surfaces in the project study area by 3.5 acres (non-Caltrans ROW). This could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event, which transports pollutants to receiving waters and may lead to downstream erosion and increases in suspended particles and sediment	*Construction* Significant *Operations* Significant *Indirect* No Impact	*Construction* **HWQ-1 Prepare and Implement a SWPPP** *Operations* **HWQ-2 Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW)** **HWQ-4 Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-5 Long-Term MOU**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.9, Geology and Soils			
Threshold 3.9-A: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: **i. Strong seismic ground shaking; and,** **ii. Seismic-related ground failure, including liquefaction.** *Indirect* Liquefaction is expected between depths of about 20 and 30 feet bgs in Segment 1: Throat Segment and Segment 2: Concourse Segment of the project study area.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Significant	*Indirect* **GEO-1** **Prepare Final Geotechnical Report:** During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following: • Site preparation • Soil bearing capacity • Appropriate sources and types of fill • Liquefaction • Lateral spreading • Corrosive soils • Structural foundations • Grading practices In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions, and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		project-related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria, California Amendments to the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications, and applicable local city codes (Appendix L of this EIR). The project shall be designed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	
Threshold 3.9-B: Result in substantial soil erosion or the loss of topsoil. The proposed project would not result in substantial soil erosion or the loss of topsoil.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.9-C: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. *Construction* Due to the presence of compressible layers within the upper 30 feet in	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **GEO-1 Prepare Final Geotechnical Report**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Segment 2: Concourse Segment of the project study area, settlement is anticipated to occur for those improvements proposed to be founded on shallow foundations. In addition, liquefaction is expected due to the soil conditions and groundwater level.			
Threshold 3.9-D: Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risk to life or property. The proposed project would not be located on expansive soil that would create substantial risk to life or property.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Section 3.10, Hazards and Hazardous Materials			
Threshold 3.10-A: Create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. *Construction* Project construction could result in accidental release hazardous materials and wastes during routine transport. There is also a potential to encounter contaminated soil and/or groundwater during excavation.	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **HAZ-1** **Prepare a Construction HMMP:** Prior to construction, an HMMP shall be prepared by Metro that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the project footprint, and would include, but shall not be limited to, the following:	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200) • A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120) • Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38) • A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910) • Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200) • Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		the largest container or tank (29 CFR 1910.120)	
Threshold 3.10-B: Create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. *Construction* The proposed project has the potential to create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment: • The project study area contains 35 Recognized Environmental Condition sites and 7 sites with land use restrictions • Potential to encounter contaminated soil and/or groundwater during excavation • Demolition of structures could result in the accidental release of asbestos containing materials or lead	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **HAZ-1 Prepare a Construction HMMP** **HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA):** Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the project footprint that would be affected by excavation. Phase II activities shall consist of: • Collection of soil, groundwater, and soil vapor samples from borings, for geologic analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the project area. • Laboratory analysis of samples for contaminants of concern, which vary by location, but may include: VOCs, PAHs, TPHs, and California Title 22 metals. A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		findings. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in environmental site assessments and evaluation of contaminated sites. **HAZ-3** **Prepare a General Construction Soil Management Plan:** Prior to construction, Metro shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the project footprint for the duration of construction. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan: • General worker health and safety procedures • Dust control • Management of soil stockpiles • Traffic control • Stormwater erosion control using BMPs **HAZ-4** **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans:** Prior to construction, Metro shall prepare parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. The nature and extent of	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		contamination varies widely across the project footprint, and the parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: • Soil disposal protocols • Protocols governing the discovery of unknown contaminants • Management of soil on properties within the project footprint with LUCs or known contaminants Prior to construction on individual properties with LUCs or known contaminants, a parcel-specific HASPs shall also be prepared for submittal and approval by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASPs provisions shall also be implemented: • Training requirements for site workers who may be handling contaminated material	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property • Mitigation and monitoring measures that are protective of site worker and public health and safety Prior to construction, Metro shall coordinate proposed soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the project, and each of the contaminated sites. HAZ-5 **Land Use Covenant Sites and Coordination with the DTSC:** Prior to construction on properties with a LUC, Metro shall coordinate with the DTSC regarding any plans specified in HAZ-4, construction activities, and/or public outreach activities needed to verify that construction activities on properties with LUCs would be managed in a manner protective of public health. HAZ-6 **Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered:** Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials and/or abandoned oil wells encountered during the construction process.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		HAZ-7 **Compliance with the City of Los Angeles Building Code Methane Regulations:** Prior to final design, Metro shall verify that the design of infrastructure improvements located within Methane Buffer Zones (as defined by LABOE) comply with the City of Los Angeles Building Code regulations set forth in Ordinances 175790 and 180619. The ordinances require evaluation of methane hazards and mitigation of a methane hazard, if one exists, depending on the severity of the hazard. **HAZ-8** **Pre-Demolition Investigation:** Prior to the demolition of any structures constructed prior to the 1970s, a survey shall be conducted for the presence of hazardous building materials, such as asbestos-containing materials, lead-based paints, and other materials falling under the Universal Waste requirements. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California, and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.	
Threshold 3.10-C: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. *Indirect* The proposed project would involve the transport and disposal of soil or other media contaminated with hazardous materials, and accidental release of these hazardous materials to nearby schools.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Significant	*Indirect* **HAZ-1 Prepare a Construction HMMP** **HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)** **HAZ-3 Prepare a General Construction Soil Management Plan** **HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans** **HAZ-5 Land Use Covenant Sites and Coordination with the Department of DTSC** **HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7 Compliance with the City of Los Angeles Methane Regulations** **HAZ-8 Pre-Demolition Investigation**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.10-D: Be located on a site which is included on a list of hazardous materials sites complies pursuant to Government Code Section 65962.5 and as a result, would create an adverse hazard to the public or the environment.	*Construction* Significant *Operations* Less than Significant	*Construction* **HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)** **HAZ-3 Prepare a General Construction Soil Management Plan**	*Construction* Less than Significant *Operations* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Construction The close proximity of existing RECs to project-related construction activities would carry the potential for encountering contaminated soil and/or groundwater. The REC sites adjacent to or in the vicinity of the project could be indirectly affected during construction. *Indirect* Based on the uncertainties regarding the level of clean up or remediation on the land use restricted sites, there is potential to encounter undocumented sources of contamination.	*Indirect* Significant	**HAZ-4** **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans** **HAZ-5** **Land Use Covenant Sites and Coordination with the DTSC** **HAZ-6** **Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** *Indirect* **HAZ-6** **Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered**	*Indirect* Less than Significant
Threshold 3.10-E: Impair implementation of an adopted emergency response plan or emergency evacuation plan. *Construction* Construction activities could interfere with emergency response and access.	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **TR-1** **Prepare a Construction TMP**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Section 3.11, Utilities/Service Systems and Energy Conservation			
Threshold 3.11-A: Exceed wastewater treatment requirements of the applicable RWCQB.	*Construction* Less than Significant *Operations* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
The proposed project would not exceed wastewater treatment requirements of the applicable RWQCB.	*Indirect* No Impact		*Indirect* No Impact
Threshold 3.11-B: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. *Construction* Construction of the project, including utility replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources.	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **HIST-5 Archaeological Site CA-LAN-1575/H**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.11-C: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. *Construction* Construction of the project, including storm drain replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **HIST-5 Archaeological Site CA-LAN-1575/H**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.11-D: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed. The proposed project would have sufficient water supplies available to serve the project from existing entitlements and resources.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.11-E: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. The proposed project would not exceed the City's existing wastewater treatment requirements.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.11-F: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.11-G: Comply with Federal, state, and local statutes and regulations related to solid waste. The proposed project would comply with federal, state, and local statutes and regulations related to solid waste.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.11-H: Require or result in the construction of new gas or electric facilities or expansion of existing facilities. The proposed project would not require or result in the construction of new gas or electric facilities or expansion of existing facilities.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.11-I: Have insufficient gas or electricity supplies available to serve the project. The proposed project would have sufficient gas or electricity supplies available to serve the project.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.11-J: Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency. The proposed project would not generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	No mitigation is required.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant
Section 3.12, Cultural Resources			
Threshold 3.12-A: Cause a substantial adverse change in the significance of a historical resource as defined in §150464.5. *Construction* The proposed project may cause a substantial adverse change in the significance of the following six historical resources: • LAUS	*Construction* Significant *Operations* No Impact Indirect Significant	*Construction* **HIST-1a LAUS City of Los Angeles CHC Review and Consultation:** Metro shall comply with the applicable Cultural Heritage Ordinance sections for LAUS. Per Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance, no person, owner or other entity shall demolish, alter, rehabilitate, develop, construct, restore, remove, or change the appearance of any Designated HCM without first having applied for and been granted a permit. The Director of Planning may	*Construction* Significant and Unavoidable *Operations* No Impact Indirect Significant and Unavoidable

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
• Vignes Street Undercrossing • William Mead Homes • Friedman Bag Company—Textile Division Building • North Main Street Bridge (Bridge #53C 1010) • Archaeological Site CA-LAN-1575/H *Indirect* The proposed project would result in an indirect visual impact associated with the elevated portion of the above-grade passenger concourse.		refer a permit to the CHC when there is potential discrepancy between the proposal and the standards. The CHC may vote to object or not object to the issuance of a permit, for up to 180 days, with an additional 180-day extension to the objection period upon a vote of the City Council. **HIST-1b** **LAUS HABS-Like Documentation: Historic Resource Recordation**: Impacts resulting from the demolition or alteration of character-defining features of LAUS shall be minimized through archival documentation of as-built and as-found condition. Prior to initiation of construction work at LAUS, Metro shall ensure that documentation of the character-defining features proposed for demolition is completed in a manner similar to a HABS, Level I survey documentation. The further documentation of LAUS shall include large-format photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's professional qualification standards for history and/or architectural history. The archival documentation shall be donated to a suitable repository, such as the City of Los Angeles Public Library. At a minimum, but not limited to, the following character-defining features shall be included in this documentation:	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Pedestrian passageway • Ramps • Railings • Platforms • Butterfly shed canopies • South retaining wall • Terminal Tower • Car Supply/Maintenance Building • Cesar Chavez Avenue Undercrossing • Vignes Street Undercrossing (this bridge, which was constructed as part of LAUS, does not require additional individual HABS documentation)	
		HIST-1c **LAUS Restoration of the Existing Passenger Concourse:** To ensure compatibility with the architecturally significant buildings that are part of LAUS and to mitigate the demolition or alteration of character-defining features at LAUS, the original passenger concourse shall be restored, where feasible, from an engineering and constructability standpoint, to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration. The original passenger concourse is a distinct transitional space between the waiting hall and the pedestrian passageway, having a low and flat ceiling with chamfered, rectangular columns with	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		flared capitals. The original passenger concourse presently contains multiple retail spaces, restrooms, Amtrak ticketing and baggage handling, and the entrance to the subterranean Red and Purple subway lines. This includes possible redesign of the entrance to the Metro Red Line Subway to be more compatible with the historic LAUS design. Metro shall design and implement the restoration in consultation with and with approval from the City of Los Angeles CHC and OHR prior to finalizing design.	
		HIST-1d **LAUS Educational Exhibit:** Because the passenger interface (i.e., the pedestrian passageway, ramps, railings, and butterfly shed canopies) between the trains and the architecturally significant buildings at LAUS would be demolished and replaced by a new design, an educational display would be created by Metro and installed at LAUS that could be viewed by the public and would demonstrate the history of LAUS and how it was used by past railroad passengers. Metro shall design and implement the educational display in consultation with the City of Los Angeles CHC and OHR prior to finalizing design.	
		HIST-2 **William Mead Homes Consultation:** Mitigation Measure AES-1 (described in Section 3.4, Aesthetics) requires coordination with HACLA on the aesthetic treatments for the proposed retaining wall and sound wall. Metro shall send copies of pertinent consultation documentation regarding proposed retaining wall and sound wall	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		design and/or aesthetic treatments including plans, specifications, and other documentation to the City of Los Angeles OHR to keep them apprised of the consultation process. **HIST-3** **Friedman Bag Company—Textile Division Building-City of Los Angeles Office of Historical Resources Review and Consultation and HABS-Like Documentation:** Prior to demolition, the character-defining features of the historical resource shall be photographed in a manner similar to HABS standards, submitted to OHR for review and approval, and the archival documentation shall be donated to a suitable repository, such as the City of Los Angeles Public Library. **HIST-4:** **North Main Street Bridge City of Los Angeles Cultural Heritage Commission Review and Consultation:** Metro shall ensure that prior to construction, work proposed on all elements and character-defining features of the North Main Street Bridge, including, but not limited to, its sidewalks, decking, and wingwalls, shall follow the Secretary of Interior's Standards for the Treatment of Historic Properties. The North Main Street Bridge is designated a LAHCM (#901). Pursuant to Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance, no person, owner or other entity shall demolish, alter, rehabilitate, develop, construct, restore, remove, or change the appearance of the North Main Street Bridge without first having applied for and	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		been granted a permit by the City of Los Angeles. The Director of Planning may refer a permit to the CHC when there is a potential discrepancy between the proposal and the standards. The commission may vote to object or not object to the issuance of a permit, for up to 180 days, with an additional 180-day extension to the objection period upon a vote of the City Council.	
		HIST-5 **Archaeological Site CA-LAN-1575/H:** Preparation of a CRMMP: Prior to construction, Metro's qualified archaeologist shall develop a CRMMP that includes the treatment and management for known historical resources, determines thresholds of significance for each of the feature types encountered, and the process for treating unanticipated discoveries. The CRMMP shall contain a robust research design, a data recovery plan, a monitoring plan for sensitive areas, and a plan for the analysis and long-term curation of archaeological materials recovered during construction. The CRMMP shall detail the discovery protocol if human remains and/or funerary objects, sacred objects, and objects of cultural patrimony are encountered and shall include a plan for reburial in an appropriate location. The CRMMP shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California Office of Historic Preservation's *Archaeological Resources Management*.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Consulting Tribes under AB 52 for the project shall have the opportunity to review and comment on the Draft CRMMP. Provisions within the CRMMP may include arrangements with tribal representatives, for example, to respectfully reinter tribal resources on site if practicable. The CRMMP shall include, at a minimum, the following: • ***Efforts to Preserve and Protect in Place:*** The CRMMP, per CEQA Guidelines 15162.4(b)(3), shall attempt to avoid impacts on Archaeological Site CA-LAN-1575/H and preserve in place any areas where significant components of Archaeological Site CA-LAN-1575/H are known to exist. • ***Development of a Preconstruction Site-Specific Sensitivity Model:*** Final design feature location and the respective level and depth of ground disturbance shall serve as the basis for impact on known locations of previously recorded archaeological features. Comparison with historic maps for the area shall identify specific site features buried within the project study area, if any. Further, specific geotechnical boring results and past archaeological reports that identify depth of fill shall determine the level of sensitivity to encounter archaeological remains for each construction component. A	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		three-dimensional model or other relatable graphic depiction shall be created to assist Metro with the interpretation of potential archaeological impacts. • ***Phasing of Feature Testing in Advance of Construction, Excavation, and Recovery:*** The CRMMP shall contain very specific methodology regarding testing of known features identified through the development of the sensitivity model. Due to the extreme constraints posed by the project area location (affecting public transportation through closure of roads, etc.), testing shall occur as part of the preconstruction activities. This CRMMP shall also contain specific methodology regarding feature evaluation, data recovery, and analysis for reporting. • ***Archaeological Monitoring:*** The CRMMMP shall identify monitoring locations and protocols based on the final design and potential impacts. Metro shall retain archaeological monitors who will be supervised by a qualified archaeologist who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and experienced in analysis and evaluation of the types of material anticipated to be encountered. All archaeological monitors shall be trained in the types of materials they may encounter. The CRMMP shall rely on an Occupational Safety and Health Administration-qualified	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		determinations in regards to the safety of monitoring locations and the potential for contaminated soils or other hazards. • ***WEAP Training:*** A qualified archaeologist shall be retained to prepare a cultural resource-focused WEAP training that shall be given to all ground-disturbing construction personnel to minimize harm to Archaeological Site CA-LAN-1575/H and any previously undiscovered archaeological resources. Topics to be included for WEAP training shall be identified in the CRMMP. All site workers shall be required to complete WEAP Training, with a focus on cultural resources, including education on the consequences of unauthorized collection of artifacts, and a review of discovery protocol. WEAP training shall also explain the requirements of mitigation measures that must be implemented during ground-disturbing construction activities in archaeologically sensitive areas. • ***Archaeological Reporting*:** All archaeological reports shall meet the requirements set forth for reporting in the CRMMP and be submitted to Metro. o *Evaluation and Data Recovery Reports:* Where archaeological evaluation and data recovery are required, the results shall be documented in an evaluation and data recovery report. This	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		document shall summarize the evaluation efforts and data recovery results. For each site or feature that undergoes data recovery, the report shall be prepared in accordance with the guidelines established by the Secretary of the Interior's Standards for Archaeological Documentation and the Archaeological Resource Management Reports: Recommended Contents and Format. o *Archaeological Monitoring Report:* Metro's qualified archaeologist shall prepare a yearly written report detailing monitoring activities performed at Archaeological Site CA-LAN-1575/H and at any other previously undiscovered archaeological site. A final monitoring report shall be written by Metro's qualified archaeologist upon completion of grading and excavation activities within cultural bearing soils. The yearly report shall include the results of the fieldwork for the time period and all appropriate laboratory and analytical studies that were performed in conjunction with excavations. • ***Curation of Archaeological Collections:*** Archaeological collections are comprised of several components, including but not	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		limited to artifacts, environmental and dating samples, field documentation, laboratory documentation, photographic records, related historical documents, and reports. All artifacts, notes, photographs, and other materials recovered during the monitoring program related to Archaeological Site CA-LAN-1575/H, and any historical resource encountered during construction shall be curated or reburied by Metro, following the specific guidelines presented in the CRMMP. **HIST-6 Development of a Public Participation or Outreach Plan:** Prior to construction, Metro shall develop a public outreach and educational plan that includes continued consultation and input from Native American Tribes consulting under AB 52 and other potential stakeholders. The plan may include visual/educational exhibits or murals within LAUS, the development of an educational telephone application, or other published or digital educational material that may be used to inform the public regarding the significance of Historic Chinatown or earlier use and sacredness of the area as it relates to Native Americans. *Indirect* **HIST-1a LAUS City of Los Angeles CHC Review and Consultation** **HIST-1b LAUS HABS-Like Documentation: Historic Resource Recordation**	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		HIST-1c **LAUS Restoration of the Existing Passenger Concourse** **HIST-1d** **LAUS Educational Exhibit** **HIST-2** **William Mead Homes Consultation** **HIST-5** **Archaeological Site CA-LAN-1575/H** **AES-1** **Aesthetic Treatments**	
Threshold 3.12-B: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. *Construction* The proposed project would result in ground-disturbing construction activities in areas known to contain Archaeological Site CA-LAN-1575/H and in areas that may contain previously undiscovered prehistoric and historical archaeological features or sites. *Indirect* Increased accessibility to archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities.	*Construction* Significant *Operations* No Impact *Indirect* Significant	*Construction* **HIST-5** **Archaeological Site CA-LAN-1575/H** **HIST-6** **Development of a Public Participation or Outreach Plan** *Indirect* **HIST-5** **Archaeological Site CA-LAN-1575/H**	*Construction* Less than Significant *Operations* No Impact Indirect Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.12-C: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. *Construction* Excavations for foundations and support piers to support the above-grade concourse and other proposed bridge structures are anticipated to extend up to 100 feet below the surface and have the potential to impact paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Indirect* Increased accessibility by construction personnel to fossils through construction activities could lead to resource looting or vandalism activities.	*Construction* Significant *Operations* No Impact *Indirect* Significant	*Construction and Indirect* **PAL-1** **Prepare a PMP:** It is anticipated that Quaternary older alluvium or Puente Formation, which have a high sensitivity level, would be impacted during construction. A PMP shall be prepared by Metro's qualified Paleontologist using final excavation plans to determine where these geologic units would be impacted, and Metro shall implement the PMP prior to the start of any ground-disturbing construction activities. The PMP shall include site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full-time paleontological monitoring if excavations would occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that only impact artificial fill and Quaternary alluvium. The PMP shall detail a discovery protocol in the event potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt surface disturbing activities in the immediate area (within	*Construction* Less than Significant *Operations* No Impact *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		a 25-foot radius of the discovery), and a qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in conformance with state guidelines and best practices. Construction activities may continue on other areas of the project site while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by a qualified paleontologist.	
		PAL-2 **WEAP Training:** Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be given to all ground-disturbing construction personnel. All site workers shall be required to complete WEAP training with a focus on paleontological resources, including a review of what to do in the case of an unanticipated fossil discovery, as identified in the PMP.	
		PAL-3 **Curation:** Significant fossils recovered during construction shall be curated by Metro in perpetuity at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition of any salvaged specimens) by Metro's qualified paleontologist.	

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow identification of the fossils. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.	
Threshold 3.12-D: Disturb any human remains, including those interred outside of formal cemeteries. *Construction* Ground-disturbing construction activities associated with the proposed project would occur in areas with the potential to contain human remains.	*Construction* Significant *Operations* No Impact *Indirect* No Impact	*Construction* **HR-1** **Human Remains:** In the event that any human remains or related resources are discovered during construction, such resources shall be treated in accordance with applicable state and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate. All construction affecting the discovery site shall immediately cease until the County Coroner is contacted (within 24 hours of the discovery of potential human remains, as required by CEQA Guidelines, Section 15064.5[e]), and the human remains are evaluated by the County Coroner for the nature of the remains and cause of death. The County Coroner must determine within 2 working days of being notified if the remains are subject to their authority. PRC Section 5097.98 requires that the immediate vicinity where the discovery occurred be subject to no further disturbances and be adequately protected according to generally	*Construction* Less than Significant *Operations* No Impact *Indirect* No Impact

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. If the remains are determined to be of Native American origin, the coroner shall contact the NAHC by phone within 24 hours, and the NAHC shall be asked to determine the most likely descendants who are to be notified or, if the remains are unidentifiable, to establish the procedures for burial within 48 hours of notification. All parties involved shall ensure that any such remains are treated in a respectful manner and that all applicable local, state, and federal laws are followed. This discovery protocol shall be included in the CRMMP.	
Threshold 3.12-E: Cause a substantial adverse change in the significance of a tribal cultural resources as defined in §21074. *Construction* Ground-disturbing construction activities for any phases of the proposed project include components that would have excavations in areas with the potential to contain Tribal Cultural Resource CA-LAN-1575/H as it relates to the descendants of groups that inhabited the area in the Native American period.	*Construction* Significant *Operations* No Impact *Indirect* Significant	*Construction* **HIST-5** **Archaeological Site CA-LAN-1575/H** **HIST-6** **Development of a Public Participation or Outreach Plan** **TCR-1** **Native American Monitoring:** To ensure TCRs are treated with culturally appropriate dignity, Metro shall retain a Native American monitor to be present at all phases of work with the potential to impact Archaeological Site CA-LAN-1575/H. A Native American monitor shall also be present at all phases of work with the potential to impact other previously undiscovered archaeological resources related to ethnohistoric or prehistoric archaeological deposits. The Native American monitor shall be selected from a tribal group with	*Construction* Less than Significant *Operations* No Impact *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Indirect Increased accessibility by construction personnel to the tribal cultural resource (such as artifacts or sacred items) could lead to resource looting or vandalism activities.		ancestral ties to this location, to be present alongside the archaeological monitor. The CRMMP shall guide Native American monitoring and shall include details on the potential discovery of previously undiscovered ethnographic and prehistoric archaeological deposits, human remains, and other sensitive resources. *Indirect* **HIST-5 Archaeological Site CA-LAN-1575/H**	
Section 3.13, Public Services			
Threshold 3.13-A: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: **i. Fire Protection** **ii. Police Protection**	*Construction* Significant *Operations* Less than Significant *Indirect* Less than Significant	*Construction* **TR-1 Prepare a Construction TMP**	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Table ES-1. Summary of Environmental Impacts and Proposed Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Construction			
Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times.			

Notes:
AB=Assembly Bill; BMP=best management practice; Caltrans=California Department of Transportation; CARB=California Air Resources Board; CBC=California Building Code; CCR=California Code of Regulations; CDFW=California Department of Fish and Wildlife; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CGP=construction general permit; CHC=Cultural Heritage Commission; CHSRA=California High-Speed Rail Authority; CIH=Certified Industrial Hygienist; CRMMP=Cultural Resource Mitigation and Monitoring Plan; DTSC=Department of Toxic Substance Control; EIR=environmental impact report; ESA=environmental site assessment; HABS=Historic American Buildings Survey; HACLA=Housing Authority of the City of Los Angeles; HMMP=Hazardous materials management plan; LABOE=Los Angeles Bureau of Engineering; LADOT=City of Los Angeles Department of Transportation; LAHCM=Los Angeles Historic-Cultural Monument; LAUS=Los Angeles Union Station; LOSSAN=Los Angeles-San Diego-San Luis Obispo; LUC=Land Use Covenant; MBTA=Migratory Bird Treaty Act; MOU=memorandum of understanding; NAHC=Native American Heritage Commission; NO_x=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; OHR=Office of Historic Resources; OSHA=Occupational Safety and Health Administration; PAH=polynuclear aromatic hydrocarbon; PMP=Paleontological Mitigation Plan; PRC=Public Resources Code; ROW=right-of-way; RWQCB=Regional Water Quality Control Board; SCAQMD=South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion; SCRRA=Southern California Regional Rail Authority; SWPPP=stormwater pollution prevention plan; TMP=traffic management plan; TPH=total petroleum hydrocarbons; UBC=Uniform Building Code; USFWS=United States Fish and Wildlife Service; WB=westbound; WEAP=worker environmental awareness program

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1.0 Introduction

This EIR has been prepared in compliance with CEQA PRC Section 21000 et seq. and the CEQA Guidelines (Section 15000 et seq.), as promulgated by the California Resources Agency and the Governor's Office of Planning and Research. The purpose of this environmental document is to disclose the potential environmental impacts associated with the proposed project.

1.1 Existing Conditions at Los Angeles Union Station

LAUS was opened for service in 1939 and is the central hub for regional transportation in Southern California, providing direct linkages for the Metro rail system (e.g., Red, Purple, and Gold Lines), Metrolink commuter trains, Amtrak intercity and long-distance trains, and Metro and municipal bus systems.

The existing LAUS does not have adequate operational and passenger capacity to serve future rail transportation needs. Rail yard operations and passenger circulation at LAUS are currently constrained, congested, and nearing capacity. The combination of limited throat track and stub-end track capacity, along with the limited concourse capacity resulting from the current configuration of the pedestrian passageway and platforms, restrict Metro's ability to accommodate the forecasted increase in rail and transit service (including accommodation of the planned HSR system) and corresponding increase in passenger capacity within the existing facility.

1.1.1 Limited Throat Tracks and Stub-Tracks Capacity

Under existing conditions, inbound and outbound trains are required to operate over the same track network into and out of LAUS via the throat. As a result, the capacity of the rail yard is operationally constrained because opposing train movements take approximately twice as long to clear track segments than under a scenario with the proposed run-through tracks in place.

The throat design at the entrance to the LAUS rail yard limits the number of trains that can enter and exit LAUS during the 3-hour AM and PM peak operating periods. The current pull in/back out movement requires trains to pull into the terminal and then reverse their direction of travel after unloading or loading passengers. The *Run-Through Tracks Project EIS/EIR* explains that scheduling reliability begins to deteriorate as an increased number of trains attempt to use LAUS, primarily during peak hours. This deterioration is expected to continue to increase as additional trains attempt to move into and out of LAUS within constrained time periods. If trains are delayed, their planned "slots" for arrival/unloading or loading/departure could be lost, which could interfere with other train slots. With LAUS approaching its overall capacity, there are likely to be even fewer opportunities for schedule recovery with the current stub-end configuration.

The proposed project is the central element of the SCORE Program that calls for significant investments in rail infrastructure in the Southern California region. Metrolink administers the SCORE Program and estimates the project-related capacity enhancements at LAUS would facilitate forecasted increases in

ridership, reduce train idling time at LAUS, and facilitate other cumulative benefits for the region, including a regional reduction of GHG) and VMT.

1.1.2 Limited Passenger Concourse Capacity

LAUS functions as a regional transfer point for multiple transit modes in Los Angeles and throughout Southern California. These transit operations occur at the following key locations within LAUS: the rail yard, Patsaouras Transit Plaza (off Vignes Street), Amtrak Thruway bus plaza (on the north side of LAUS), Gold Line Station, and Red and Purple Line subway station. These transit modes are connected via the existing 28-foot-wide reinforced concrete pedestrian passageway located under the rail yard platforms (pedestrian passageway).

The pedestrian passageway connects the historic ticketing and waiting halls at LAUS to the East Portal Building and Patsaouras Transit Plaza. The current configuration of the pedestrian passageway causes ponding during rain events (water drains down stairways and ramps to platforms) and based on the current level of ridership restricts cross-campus circulation and the associated access to and from transit modes served at LAUS.

The current layout and arrangement of the existing rail yard and its relationship to the existing pedestrian passageway is constricted, highly congested during peak travel hours, and unable to provide capacity to accommodate the forecasted increase of transit riders. Platform 1 (serving the Gold Line) is a high-level platform that is 30 feet wide. Platforms 2 through 7 (serving Metrolink and Amtrak) are low-level platforms that are 21 feet wide, which is 9 feet less than the SCRRA Engineering Standard 3003 of 30 feet. The existing 21-foot-wide platforms provide 30 inches of clear wheelchair aisles on each side of the platform stair/ramp portals, which are over 100 feet long. Wheelchairs coming from opposite directions cannot pass each other and turning a wheelchair around can only be accomplished by encroaching into the safety zone of the platform. The current combination of narrow platforms with insufficient space for passenger and baggage services in the rail yard area, in addition to non-ADA-compliant connections to and from the rail yard and pedestrian passageway limit the functionality and overall circulation through LAUS.

1.2 Project Overview

Metro is proposing the Link US project to improve operational efficiency, capacity, flexibility, and connectivity for existing and future regional and intercity rail services at LAUS while minimizing the impacts on the environment; accommodate the planned HSR system and forecasted increases in passengers; and improve and increase pedestrian access to the train platforms, passenger flow and capacity, and accessibility for passengers with disabilities.

The proposed project would transform LAUS from a “stub-end tracks station” into a “run-through tracks station” with a new passenger concourse that would improve the efficiency of the station and accommodate forecasted increases in passengers and transportation demands in the region.

1.3 EIR Intended Uses

All discretionary projects in the State of California are required to comply with CEQA if implementation of the project has the potential to result in either a direct physical change to the environment or a reasonably foreseeable indirect physical change to the environment. More specifically, a project requires environmental review if it incorporates a discretionary action undertaken by a public agency. Discretionary actions are activities that are supported in whole, or in part, through public agency contracts, grants, subsidies, etc.; or activities requiring a public agency to issue a lease, permit, license, certificate, or other entitlement. If the project may have a "significant" impact on any environmental resource, an EIR must be prepared. In accordance with Section 15121(a) of the CEQA Guidelines (California Administrative Code, Title 14, Division 6, Chapter 3), the purpose of an EIR is as follows:

> *An EIR is an informational document, which will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.*

Pursuant to Section 15378(d) of the CEQA Guidelines, Metro, acting as the CEQA lead agency, has identified a CEQA proposed project (proposed project) in this EIR to provide an accurate, stable, and finite description of the "development proposal for the purpose of environmental analysis." Identification of the proposed project is intended to facilitate public comment at the local and state level. Metro is preparing this project-level EIR to provide information to public agencies, the general public, and decision makers, regarding the project-specific and cumulative environmental impacts of the proposed project. This EIR also identifies required mitigation measures that would avoid or reduce significant impacts resulting from implementation of the proposed project.

This EIR will be used by Metro to make decisions regarding project approval and implementation. It also may be used by CEQA responsible and trustee agencies (i.e., local jurisdictions and state agencies) in the event that permits or discretionary approvals from these agencies are required for the project.

1.3.1 CEQA Responsible and Trustee Agencies

The information in this EIR may also be used by other agencies involved with the project that have a responsibility under CEQA, including but not limited to, the following:

- Caltrans
- CHSRA
- SCRRA
- City of Los Angeles

CDFW is a CEQA trustee agency (Section 15386[a] of the CEQA Guidelines) and must be notified if the project involves fish and wildlife of the state's rare and endangered native plants, wildlife areas, and ecological reserves.

1.4 Document Organization

The content and format of this EIR meet the current requirements of CEQA and the CEQA Guidelines. This EIR is organized into the following sections with supporting technical appendices, so the reader can easily obtain information about the proposed project and its specific issues.

Executive Summary: This section provides a summary of the potential impacts, mitigation measures of the proposed project and impact conclusions, and a summary of alternatives to the proposed project. Areas of controversy and issues to be resolved are discussed.

Section 1 – Introduction: This section describes the purpose and use of the EIR and the organization of the EIR. This section provides a description of the NOP and scoping process. A list of environmental topics addressed in the EIR is provided.

Section 2 – Project Description: This section provides a detailed description of the proposed project, project components, and discretionary actions, as well as identifies the overall objectives for the proposed project.

Section 3 – Environmental Impact Analysis: For each environmental issue, this section presents the existing environmental setting and conditions before project implementation, regulatory environment, methods and assumptions used in the impact analysis, thresholds for determining significance, impacts that would result from the project, mitigation measures that would eliminate or reduce significant impacts, and the level of significance of each impact area after implementation of mitigation.

Section 4 – Cumulative Impacts: This section identifies cumulative impacts.

Section 5 – Alternatives: This section evaluates the environmental impacts of the No Project/No Build Alternative, Build Alternative (dedicated track alignment with an at-grade passenger concourse), and the Reduced Historic Impact Alternative. Additionally, this section identifies an environmentally superior alternative.

Section 6 – Other Statutory Considerations: This section identifies growth-inducing impacts, significant irreversible environmental changes, impacts found not to be significant, and significant and unavoidable environmental impacts.

Section 7 – Response to Comments (Final EIR): Following completion of the review process for the Draft EIR, this section will contain the written comments received by Metro on the Draft EIR during the public comment period and Metro's responses to those comments.

Section 8 – References: This section identifies the documents (printed references) and individuals (personal communications) consulted in preparing this EIR and also lists the individuals involved in preparing this EIR.

Section 9 – EIR Preparers and Organizations and Persons Consulted: This section identifies the individuals involved in preparing this EIR and the organizations and persons consulted.

Technical Appendices: This section presents data supporting the analysis or contents in this EIR. All technical appendices are provided electronically on a CD in a pocket on the back cover of this document. In addition, copies of these reports are posted on Metro's website (metro.net/projects/link-us/) and available on file at Metro Headquarters (One Gateway Plaza, Los Angeles, California 90012) during normal business hours and are available at local public libraries.

1.5 Notice of Preparation and Scoping Meeting

Metro began the environmental review process pursuant to CEQA by sending out an NOP (Appendix A of this EIR). The NOP was first distributed locally to interested local public agencies and the general public, and then to the State Clearinghouse for distribution to state responsible and trustee agencies. The CEQA-required 30-day NOP review period began May 27, 2016, and identified that Metro intended to prepare an EIR for the proposed project. The NOP served as a chance for interested local public agencies and the general public to comment on the project and the scope and content of environmental issues to be examined in the EIR. Pursuant to CEQA, the NOP review period is 30 days; therefore, the comment period closed June 27, 2016.

The NOP was distributed to the public through mail and advertisements. The NOP was also available on the project website. The NOP was also published in several local, multicultural publications in different languages, including the following: *Los Angeles Downtown News* (English), *La Opinion* (Spanish), *Rafu Shimpo* (Japanese), and the *Chinese LA Daily News* (Chinese). These are the predominant newspapers circulated in the neighborhoods around LAUS and cover the main languages spoken in these areas.

In addition, Metro held a public scoping meeting for the project to further obtain input as to the scope of environmental issues to be evaluated in the EIR. The scoping meeting was held June 2, 2016, from 6:00-8:00 PM on the first floor plaza of Metro Headquarters (One Gateway Plaza, Los Angeles, California 90012).

At the scoping meeting, members of the public were invited to ask questions regarding the proposed project and the environmental review process and comment both verbally and in writing on the scope and content of the EIR. Written comments received during the 30-day review period for the NOP, as well as during the public scoping meeting, are included in Appendix A of this EIR.

1.6 Environmental Topics Addressed

This EIR addresses the potential environmental impacts of the proposed project and was prepared following input from the public and the responsible and affected agencies, through the EIR scoping process, as discussed previously. The contents of this EIR were established based on public and agency input. This following environmental topics are analyzed in this EIR:

- Land Use and Planning
- Transportation and Traffic
- Aesthetics

- Air Quality and Global Climate Change
- Noise and Vibration
- Biological Resources
- Hydrology and Water Quality
- Geology and Soils
- Hazards and Hazardous Materials
- Utilities/Service Systems and Energy Conservation
- Cultural Resources
- Public Services

1.7 EIR Processing

This Draft EIR is being distributed to interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental impacts of the project and to ensure that information pertinent to permits, authorizations, and discretionary approvals is provided to decision makers, lead agencies, and CEQA-responsible and trustee agencies. This document is available for review by the public at Metro's office during normal business hours. The document will also be available on Metro's website.

1.8 Comments Requested

This Draft EIR is being distributed for a 45-day period that will begin January 17, 2019, and end March 4, 2019. Written comments should be sent to the following address:

Vincent Chio

Link US Deputy Project Manager

Metro Headquarters

One Gateway Plaza (Mail Stop MS 99-17-2)

Los Angeles, California 90012

Comments may be provided via online comment form at metro.net/linkus or via email. Please include the project title in the subject line, attach comments in Microsoft Word format, and include the commenter's U.S. Postal Service mailing address. Email comments should be directed to LinkUnionStation@metro.net. Metro will respond to these comments in the Final EIR. All public comments must be received by 5:00 PM, March 4, 2019, to ensure incorporation into the Final EIR.

Public Hearing: Metro will hold a public hearing to explain the project and the Draft EIR analysis. Comments from the public may be submitted at the public hearing via comment card or court reporter. Information regarding the public hearing is provided below.

Date: Tuesday, January 29, 2019

Time: 6:00 – 8:00 PM

Location: Metro Headquarters,
One Gateway Plaza
Board Room, 3rd Floor
Los Angeles, California 90012

Once all comments have been assembled and reviewed, responses will be prepared to address significant environmental issues that have been raised in the comments. The responses will be included in the Final EIR.

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2.0 Project Description

This section discusses the project background and history, identifies the project study area, provides a detailed description of the project-related operational enhancements and key infrastructure improvements, and presents Metro's approach to project implementation.

2.1 Project Background and History

The project background and history are described below to provide context for the proposed project (and the build alternative considered in Section 5.0, Alternatives). Previous iterations of the proposed project include the Run-Through Tracks project and the Southern California Regional Interconnector project (SCRIP).

2.1.1 Run-Through Tracks Project (2002 to 2005)

In 2002, Caltrans and FRA (in cooperation with Amtrak) initiated conceptual engineering and preparation of an environmental impact statement (EIS)/EIR for a capacity improvement project known as the Run-Through Tracks project. As part of preparing the Run-Through Tracks Project EIS/EIR, the *Amtrak Union Station Run-Through Tracks Alternatives Analysis* (AA) *Report* (HDR 2002) was completed to define and screen a range of potential run-through track alignments south of LAUS. The 2002 AA Report included an evaluation of 48 potential alignments between US-101 to the north, Fourth Street to the south, and Alameda Street to the west (Figure 2-1). The 48 alignments were screened to 4 that were further studied, and 2 alternatives (Alternatives A and A-1) were carried forward and evaluated in the Los Angeles Union Station Run-Through Tracks EIS/EIR (HDR 2005). In 2005, FRA issued a Final EIS, and Caltrans certified the Final EIR for the Run-Through Tracks project. FRA did not issue a Record of Decision after the Final EIS was completed.

During the 2002 AA Report screening process for the original Run-Through Tracks project, the optimal configuration for run-through tracks south of LAUS was an alignment parallel to the freeway along Commercial Street toward the main line tracks in an "s-shaped band" configuration (Figure 2-1). This s-shaped band was selected as the optimal configuration largely because of the curvature required to maintain safe rail operations, the projected cost-benefit analysis, and avoided and/or reduced environmental impacts.

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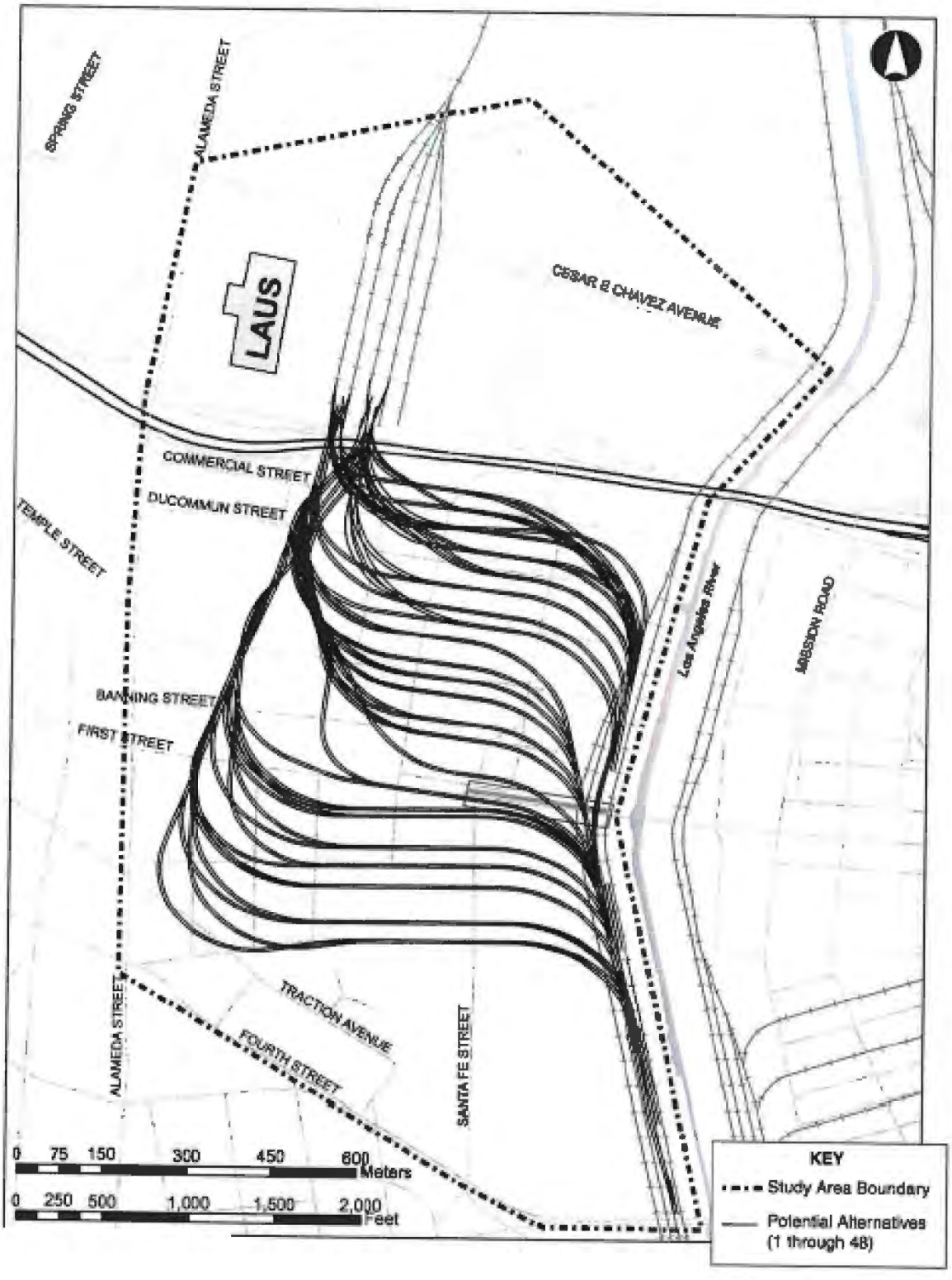
Figure 2-1. Run-Through Alignments Previously Considered



Source: HDR 2005

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The engineering and environmental screening criteria considered during the 2002 alternatives analysis process that led to selection of a preferred alignment along Commercial Street included:

- Track design and geometric considerations
- Rail operational considerations
- Structural considerations
- Local operations considerations
- Utility impacts
- Cost considerations
- Use of Section 4(f) properties
- Conflict with other transportation projects
- Conflict with entitled projects
- Property acquisitions
- Noise and vibration impacts
- Visual impacts

The proposed alignment was configured in a manner to utilize existing railroad ROW and follow the s-shaped band alignment along Commercial Street to optimize the alignment and curvature for new run-through tracks and maximize efficiency of the system, while avoiding unnecessary infrastructure and operational costs.

South of LAUS, the most optimal alignment from 2005 was used as a basis because all other alignments were previously considered and determined to not be feasible based on additional ROW requirements, potential environmental impacts, and input from the public and stakeholders. Based on applicable findings from the 2005 Run-Through Tracks project that provide the basis for an alignment along Commercial Street, an alignment along Commercial Street would have the least overall impact on the surrounding area compared with alignments on parallel streets south of Commercial Street for the following reasons:

- ROW impacts would primarily be industrial properties, not residential.
- Noise and vibration impacts are anticipated to be minimal due to the distance from and fewer number of sensitive resources.
- An alignment along Commercial Street has the potential to result in reduced environmental impacts related to visual aesthetics and historic resources compared with alignments on parallel streets south of Commercial Street because it does not require a structure that crosses above the historic First Street Bridge.

2.1.2 Southern California Regional Interconnector Project

Subsequent to completion of the environmental process for the Run-Through Tracks project, the following circumstances occurred that resulted in the need to approach the planned LAUS infrastructure in a different manner:

- Metro purchased LAUS in 2011 and began a master planning effort for the LAUS campus and surrounding areas.
- Service operators identified a need to increase the capacity of the rail yard, while further enhancing capacity with an operational northern loop track south of LAUS.
- Metro determined the existing 28-foot-wide pedestrian passageway connecting the east and west ends of LAUS would be unable to meet forecasted demand.

In 2015, Metro released *Transforming Los Angeles Union Station, A Summary Report* (Metro 2015b), which provided a synopsis of the 2-year master planning process accompanied with an implementation strategy. Metro initiated work on SCRIP concurrent with development of the LAUS Master Plan to identify new run-through track alternatives for regional/intercity (Metrolink/Amtrak) rail run-through service south of LAUS in conjunction with a new at-grade passenger concourse at LAUS (below the rail yard), an elevated rail yard, and a northern loop track. As part of SCRIP, Metro determined environmental clearance of a new passenger concourse with new run-through tracks would provide an opportunity to meet current building code standards, while implementing long-term rail, transit, and mobility improvements at LAUS. Eleven run-through track alignment alternatives were considered for SCRIP, none of which accommodated the planned HSR system because all early concepts for the planned HSR system avoided the LAUS rail yard, and it was unknown at that time that HSR planned to use the LAUS rail yard as a station location.

2.1.3 Link Union Station Project

In April 2016, Metro issued the EIR NOP for the Link US project. In June 2016, Metro and CHSRA entered into an agreement to accommodate the planned HSR system at the LAUS rail yard as part of the project design and project-level environmental analysis and preliminary engineering.

The run-through track improvements over US-101 remain the fundamental component to improving operational efficiency, capacity, flexibility, reliability, and connectivity for regional/intercity trains using LAUS; however, both circumstances and conditions in and around LAUS have changed. New project considerations that were not addressed in the Los Angeles Union Station Run-Through Tracks EIS/EIR, as well as changed circumstances and area conditions since consideration of SCRIP, include:

- Coordination between Metro and CHSRA to accommodate the planned HSR system within the context of the project
- Coordination between Metro and stakeholders to consider an above-grade passenger concourse option at LAUS

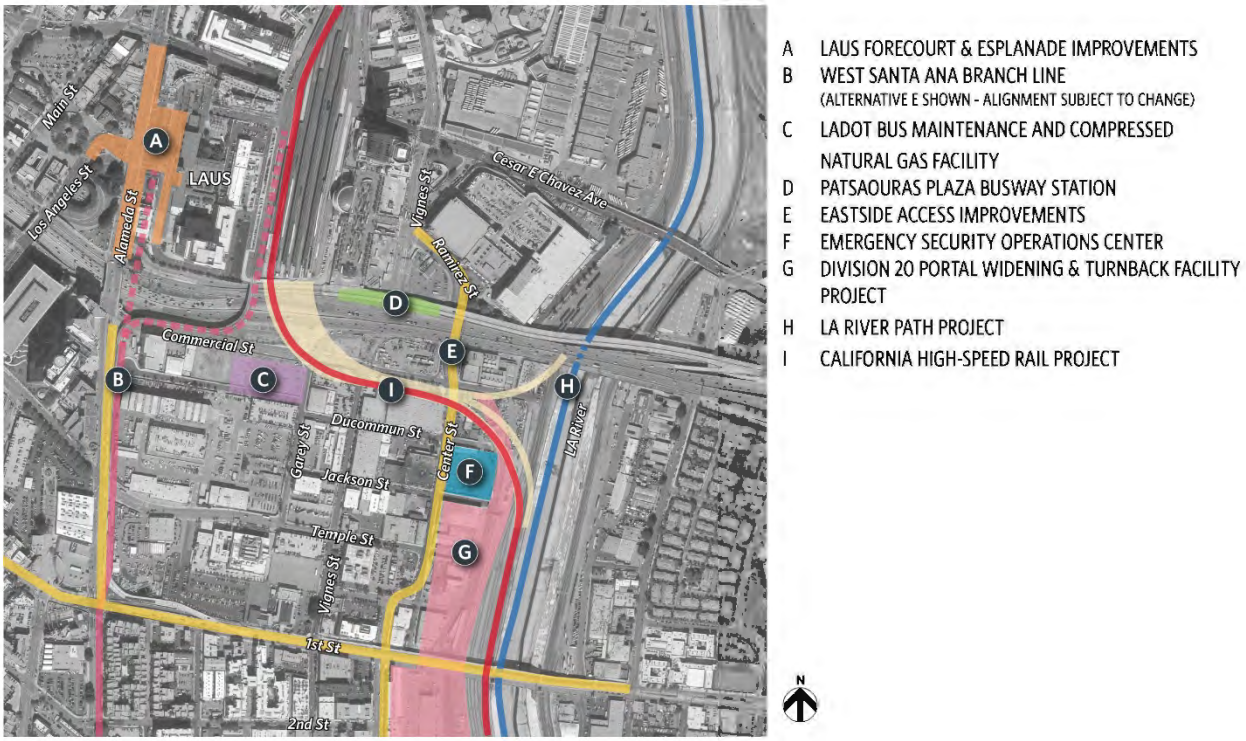
- Coordination between Metro and stakeholders to implement infrastructure designed to be operable for multiple rail service providers (regional/intercity rail and HSR trains) from LAUS to the main line tracks on the west bank of the Los Angeles River
- Other completed, planned, and cumulative Metro and public projects that pose design/compatibility constraints and/or multimodal opportunities, including, but not limited to (Figure 2-2):
    - CHSRA Planned HSR System – FRA and CHSRA are currently evaluating the construction and operation of the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system. These project sections are in the environmental phase and have not received full funding. The final environmental clearance for both project sections is anticipated to be completed by 2020.
    - Metro West Santa Ana Branch (WSAB) Line project – The WSAB Line project is a proposed 20-mile light-rail transit line originally planned by Metro and FTA to include a terminal platform at LAUS and connect Downtown Los Angeles to southeast Los Angeles County (County). On May 24, 2018, the Metro Board approved further study of two potential route alignments for the northern section of the WSAB light-rail project – one serving LAUS underground via Alameda Street with a station at the LAUS forecourt or east of the Metropolitan Water District of Southern California (MWD) building (Concept E) and one serving the downtown transit core underground (Concept G). Concept F, the alignment with an aerial configuration on Center Street and terminus above the Gold Line or at Platform 2 in the rail yard, was eliminated from further consideration. The project is currently in the environmental phase, and the Final EIS/EIR is anticipated to be published in 2021. The project is partially funded under Measures R and M and is expected to break ground in 2022.
    - Metro *Connect US Action Plan* and Eastside Access Improvements – The *Connect US Action Plan* (formerly *Los Angeles Union Station and First/Central Linkages Study*) (Metro 2015a) was developed to improve connections and access around Downtown Los Angeles and LAUS. Elements of the *Connect US Action Plan,* such as roadway widths and streetscape improvements (Cesar Chavez Avenue, Vignes Street, Center Street, and Commercial Street), are incorporated into the project design. The project is currently in the design phase and has received funding from a federal Transportation Investment Generating Economic Recovery grant in 2015 and an Active Transportation Program Cycle 3 grant in 2017. Construction is anticipated to begin in 2020.
    - Metro Patsaouras Plaza Busway Station project – The Patsaouras Plaza Busway Station project consists of a new passenger boarding/alighting platform at the southern end of Patsaouras Transit Plaza on the El Monte Busway to provide a direct pedestrian connection between the El Monte Busway and LAUS. This project is fully funded, primarily by FTA and Los Angeles County Proposition C, and is currently in construction projected for completion in February 2019.

- Metro Emergency Security Operations Center (ESOC) project – The ESOC project is a planned facility, located on Center Street between Jackson Street and Ducommun Street, to serve as the central location for Metro's emergency coordination and security operations, and, in the future, be expanded to integrate with Metro's rail and bus operations. The project was environmentally cleared in 2015, and is currently in the final design phase. The project is funded by a $112.7 million Proposition 1B 2010-2011 California Transit Security Grant and scheduled to open in 2021.
- Metro LAUS Forecourt and Esplanade Improvements project – The LAUS Forecourt and Esplanade Improvements project would re-establish the connection between LAUS and surrounding communities by enhancing the passenger experience at LAUS and connectivity for residents, visitors, and workers. The modifications to Alameda Street would reduce the number of lanes from Cesar Chavez Avenue to Arcadia Street/El Monte Busway. The northbound and southbound through lanes would be reduced from three lanes to two lanes. The two driveways off of Alameda Street into LAUS would be consolidated into one. The Esplanade portion of the project is fully funded by Active Transportation Program Cycle 2 and Cycle 3 funding, as well as Metro local funds, but the Forecourt portion of the project is not yet funded. The Final EIR was certified by the Metro Board in March 2018. Construction is anticipated to begin in 2020.
- Metro Division 20 Portal Widening and Turnback Tracks – The existing subway portal at the north end of the Division 20 Rail Yard, south of US-101, will be upgraded to accommodate higher operating speeds and more frequent train operations. The turnback facility would consist of additional tracks being added to the Division 20 Rail Yard to allow more frequent "turn backs" of Red and Purple Line trains leaving and re-entering service. The Division 20 project includes infrastructure south of US-101 east of Center Street, and was considered during the design of the project (a column and cast-in-drilled-hole pile foundation supporting the HSR viaduct east of Center Street may be constructed to minimize future impacts on the Division 20 project). This column and cast-in-drilled-hole pile foundation are reflected in the Division 20 project design currently in the late stage of the CEQA process. If approved, the Division 20 project is anticipated to start construction in spring 2019.
- Metro Los Angeles River Path project – The Los Angeles River Path project is a planned bicycle and pedestrian project along an 8-mile stretch of the Los Angeles River from Elysian Valley through Downtown Los Angeles. The Los Angeles River Path project would be located along the west bank of the Los Angeles River (adjacent to the project study area) and was considered during the project design (design provided consideration for roadway/circulation improvements and run-through tracks connection to main line). This project is funded under Measure M and is currently in the environmental phase with a planned completion date in 2025.

- LADOT Bus Maintenance and Compressed Natural Gas Facility – The City of Los Angeles has designated 3.6 acres for an LADOT bus maintenance and compressed natural gas fueling facility at 454-462 and 506 Commercial Street, as well as 459-461 and 503-511 Ducommun Street, within the project study area. The LADOT Bus Maintenance and Compressed Natural Gas Facility is located just south of US-101 and was considered during the project design (run-through track structure over US-101). The facility is currently in construction.

- Property ownership and valuation changes
- Land use changes within the project study area
- New and/or updated SCRRA, American Railway Engineering and Maintenance-of-Way Association, Metro, CHSRA, CPUC, FRA, and the City of Los Angeles building and safety standards, regulations, and discretionary action requirements

Figure 2-2. Other Projects Considered During Link Union Station Design Process



2.2 Project Location and Project Study Area

LAUS is located at 800 Alameda Street in the City of Los Angeles, California. LAUS is bounded by US-101 to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. Figure 2-3 depicts the regional location and general vicinity of LAUS.

Figure 2-4 depicts the project study area, which encompasses the extent of environmental study associated with potential direct, indirect, and cumulative impacts from implementation of the proposed project. The project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment). The existing conditions within each segment are summarized north to south below.

- Segment 1: Throat Segment – This segment, known as the LAUS throat, includes the area north of the platforms, from Main Street at the north to Cesar Chavez Avenue at the south. In the throat segment, all arriving and departing trains traverse five lead tracks into and out of the rail yard, except for one location near the Vignes Street Bridge where the tracks reduce to four lead tracks. Currently, special track work consisting of multiple turnouts and double-slip switches are used in the throat to direct trains into and out of the appropriate assigned terminal platform tracks.
- Segment 2: Concourse Segment – This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the Garden Tracks (stub-end tracks where private train cars are currently stored, just north of the platforms and adjacent to the existing Gold Line aerial guideway), the East Portal Building, the baggage handling building with aboveground parking areas and access roads, the ticketing/waiting halls, and the pedestrian passageway with connecting ramps and stairways below the rail yard.
- Segment 3: Run-Through Segment – This segment is south of LAUS and extends east/west from Alameda Street to the west bank of the Los Angeles River and north/south from US-101 to Control Point (CP) Olympic. This segment includes US-101, the Commercial Street/Ducommun Street corridor, Metro Red and Purple Lines Maintenance Yard (Division 20 Rail Yard), BNSF West Bank Yard, Keller Yard, the main line tracks on the west bank of the Los Angeles River, from Keller Yard to CP Olympic, and the "Amtrak Lead Track" connecting the main line tracks with Amtrak's Los Angeles Maintenance Facility. Businesses within the run-through segment are primarily industrial and manufacturing-related.

The project study area has a dense street network ranging from major highways to local city streets. The roadways within the project study area include the El Monte Busway, US-101, Bolero Lane, Leroy Street, Bloom Street, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, Main Street, Aliso Street, Avila Street, Bauchet Street, and Center Street.

Figure 2-3. Project Location and Regional Vicinity

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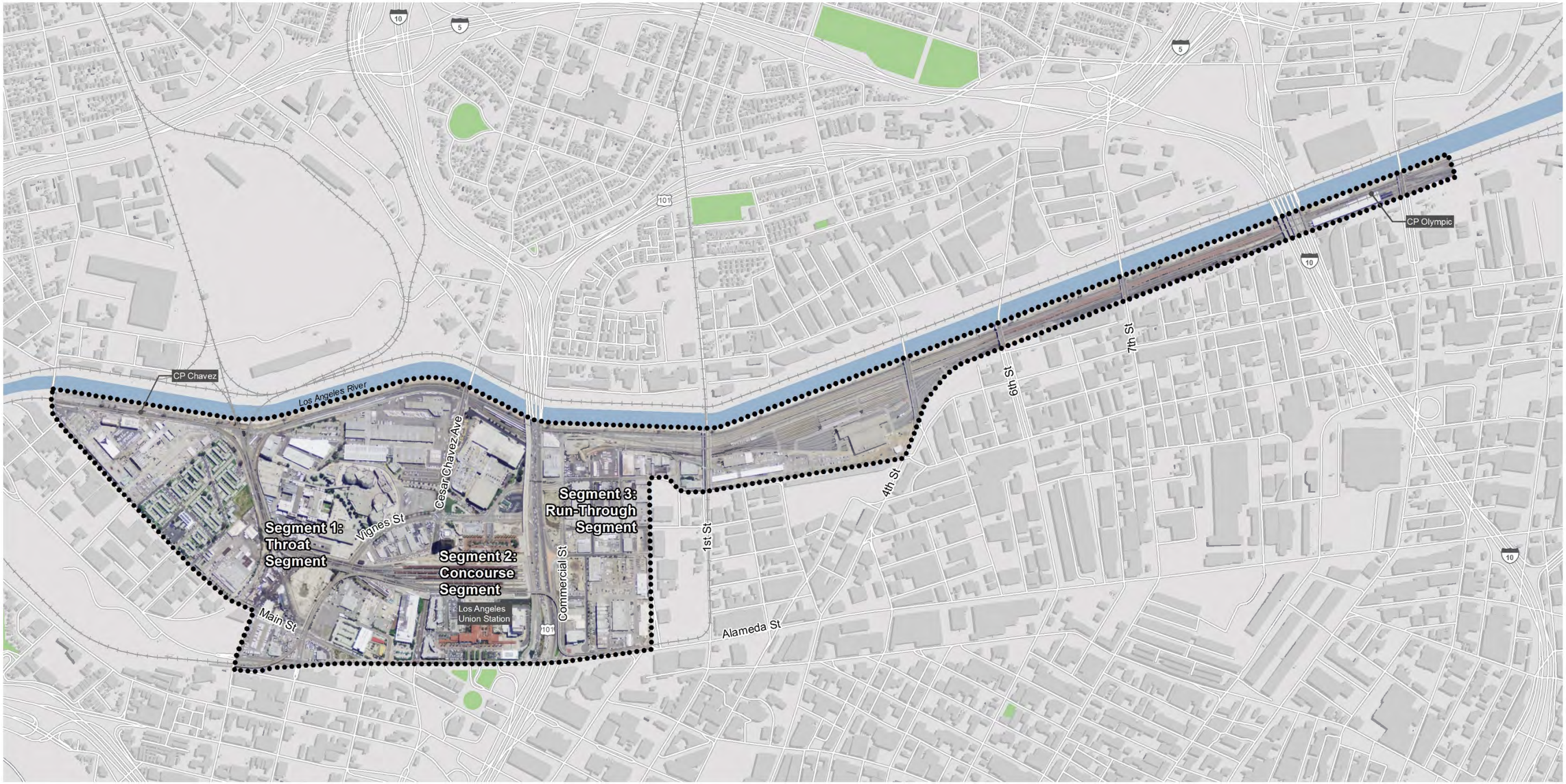
Figure 2-4. Project Study Area



LEGEND

Project Study Area

0 Feet 1,000

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2.3 Key Terminology

Key terminology used in this EIR is summarized in Table 2-1.

Table 2-1. Definition of Key Terminology

Term	Definition
HSR Accommodation	***HSR – Direct Physical Accommodation***: The planned HSR system will utilize LAUS as the station location in Los Angeles between the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections. The Link US design accommodates the planned HSR system by establishing a development footprint that accounts for regional/intercity rail improvements, as well as currently anticipated HSR-related infrastructure improvements. The HSR-related infrastructure and associated direct physical impact areas within the Link US project footprint are evaluated in this EIR as part of the Full Build-Out with HSR Condition. Figure 2-5 provides an overlay of the planned HSR system direct physical impact areas on the Link US project footprint. This overlay demonstrates that the two projects would involve physical improvements in the same geographic area, and direct physical impact areas associated with the planned HSR system are confined within the Link US project footprint. The northern and southern termini of HSR accommodation in this EIR are described below: • *Northern Terminus* – The northern limit of the planned HSR system within the Link US project footprint is located at CP Chavez. • *Southern Terminus* – The southern limit of the planned HSR system within the Link US project footprint is located at First Street. North of First Street, the physical footprint for the planned HSR system is located within the Link US project footprint. The physical footprint for the planned HSR system and associated infrastructure is not depicted on Figure 2-5 because the planned HSR system will evaluate that area in the Los Angeles to Anaheim Project Section Draft EIS/EIR (under preparation). ***HSR – Operational Evaluation***: The FRA/CHSRA EIS/EIRs for the planned HSR system (Burbank to Los Angeles and Los Angeles to Anaheim Project Sections) will address all HSR operational impacts resulting from implementation of the planned HSR system; including, but not limited to, off-site track work and other structural/infrastructure improvements, platform height increases, installation of catenaries, trackway electrification, displacements and relocations (including the BNSF West Bank Yard)[1], noise and vibration impacts associated with HSR operations, need for parking spaces and pick-up/drop-off areas at LAUS, potential impacts on city streets and intersections, and LAUS internal roadways and intersections due to potential increases in vehicular traffic associated with HSR operations. Cumulative impacts associated with the project and the planned HSR system are also considered (Section 4.0, Cumulative Impacts, of this EIR).

Table 2-1. Definition of Key Terminology

Term	Definition
Not-to-Preclude	The WSAB Line project; future HSR-related infrastructure outside of the project footprint; future transit improvements, such as an Intercity Bus Plaza at LAUS; and future active transportation improvements in and around LAUS are future projects not precluded from implementation because project-related infrastructure is designed to be compatible and avoid conflicts with future projects.
Shared Track Alignment	In a shared track alignment, two of six lead tracks north of LAUS would be designed to accommodate operation of HSR trains and regional/intercity rail trains on the same tracks. For the purposes of this EIR, the proposed project includes the shared track alignment north of LAUS.
Interim Condition (Phase A)	In April 2018, California State Transportation Agency awarded an $875 million grant under the TIRCP to SCRRA for implementation of the SCORE Program. The grant includes $398 million to implement the first phase of run-through service at LAUS for regional/intercity rail trains via early action/interim improvements (also referred to as the Interim Condition or Phase A of the Link US project). CHSRA also committed $423 million of Proposition 1A/HSR Bonds for the project in its 2018 Business Plan. The early action/interim improvements are primarily associated with the regional/intercity rail run-through track infrastructure south of LAUS and would include necessary signal modifications, roadway modifications, and property acquisitions to facilitate new run-through service. Phase A does not include new lead tracks, the elevated rail yard, or the new passenger concourse. Early action/interim improvements could be completed as early as 2026 to provide early mobility and environmental benefits.

Table 2-1. Definition of Key Terminology

Term	Definition
Full Build-out Condition (Phase B)	The full build-out condition evaluated in this EIR is the timeframe corresponding to Link US opening year (2031). In the full build-out condition, construction of all major project components would be completed, including new lead tracks in the throat segment, the elevated rail yard, and new passenger concourse. In the full build-out condition, regional/intercity trains would operate on all lead tracks in the throat segment, including compatible lead tracks identified for future HSR service. Regional/intercity trains would also have full use of tracks in the rail yard (with exception of Tracks 1 and 2) and run-through tracks in the full build-out condition.
Full Build-out with HSR Condition	The full build-out with HSR condition evaluated in this EIR is the timeframe corresponding to when compatible infrastructure would be modified and/or converted for the planned HSR system (as early as 2033). In the full build-out with HSR condition, compatible lead tracks would be electrified, and up to two rail yard platforms would be raised to meet level-boarding requirements for the planned HSR system. VCEs would also require extension to accommodate elevated platforms. Within the rail yard and south of LAUS, HSR trains would operate on dedicated electrified tracks. To authorize HSR operations at LAUS, a use agreement or other legally binding agreement would be required between the relevant parties to formally allocate up to two platforms and four tracks at LAUS for use by CHSRA. If the planned HSR system does not utilize LAUS as a station location, regional/intercity rail trains would continue to operate on infrastructure constructed in the interim and full build-out conditions.

Notes:

[1] ***Relocation of the BNSF West Bank Yard is acknowledged in a letter from BNSF to Metro (BNSF 2018).***

CHSRA=California High-Speed Rail Authority; CP=Control Point; EIR=environmental impact report; EIS=environmental impact statement; FRA=Federal Railroad Administration; HSR=High-Speed Rail; LAUS=Los Angeles Union Station; Link US=Link Union Station; SCORE=Southern California Optimized Rail Expansion; SCRRA=Southern California Regional Railroad Authority; TIRCP=Transit and Intercity Rail Capital Program; VCEs=vertical circulation elements; WSAB=West Santa Ana Branch

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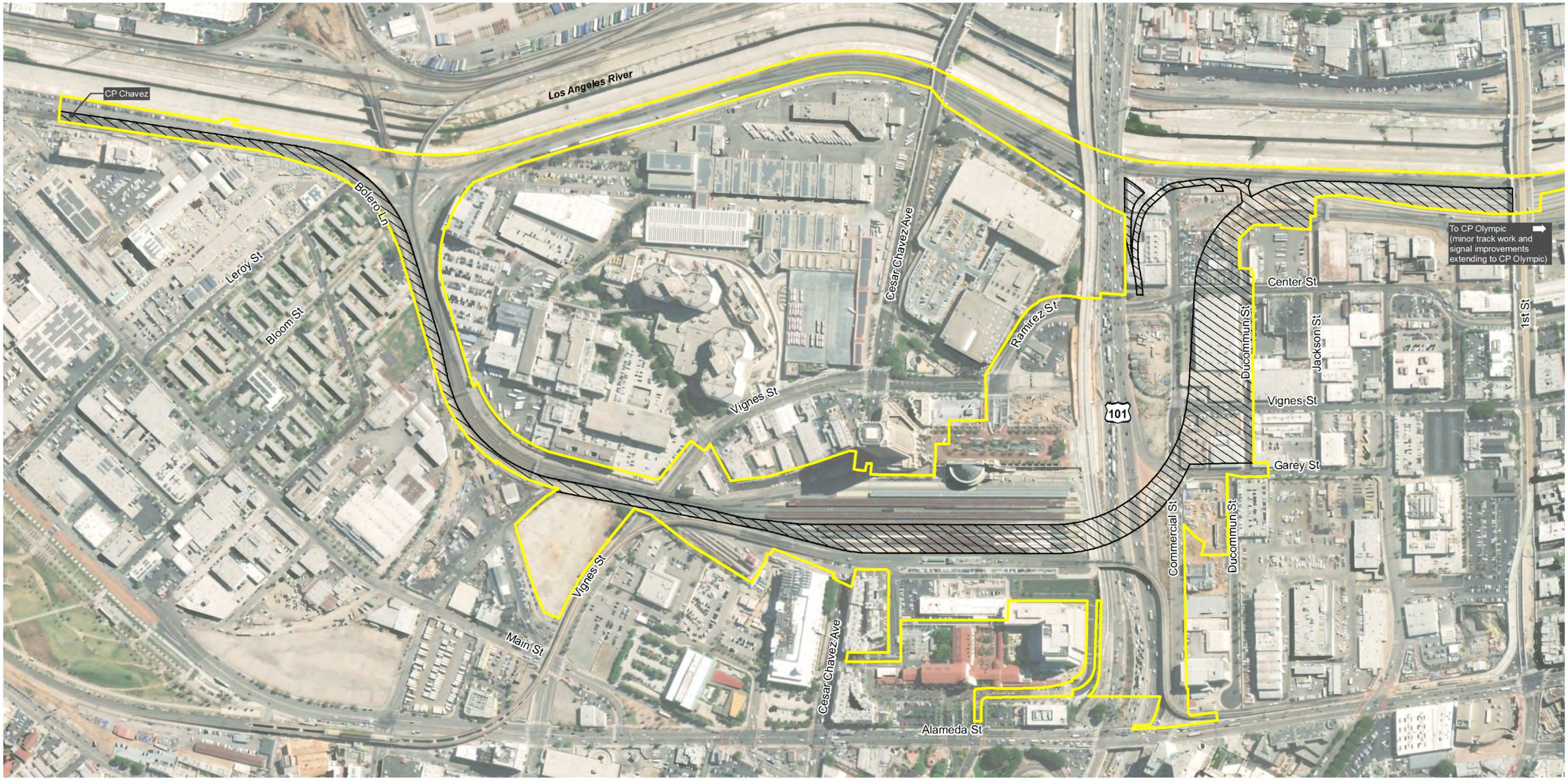
Figure 2-5. High-Speed Rail Accommodation Overlay



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2.4 Definition of Proposed Project

The major components that define the proposed project are summarized in Table 2-2 and are based on the key terms above.

Table 2-2. Project Definition Summary

Link US CEQA Proposed Project	Description of Major Project Components
	• North of LAUS o Shared track alignment (two compatible lead tracks for future HSR service) o Reconstructed throat (one new lead track) from CP Chavez to Cesar Chavez Avenue o Vignes Street Bridge and Cesar Chavez Avenue Bridge replacements o Safety improvements at Main Street • LAUS – Rail Yard o Above-grade passenger concourse o Elevated portion of the above-grade passenger concourse o New expanded passageway o West Plaza o Elevated rail yard with six new regional/intercity rail platforms and one lengthened Gold Line platform o New VCEs (stairs, escalators, and elevators) between the platforms • South of LAUS o Up to 10 run-through tracks o Common viaduct/deck over US-101 o Common embankment from Vignes Street to Center Street o Realignment of Commercial Street • East of Center Street o Loop track and regional/intercity rail main line connection o HSR main line connection on a separate viaduct from the regional/intercity rail main line connection

Notes:
CEQA=California Environmental Quality Act; CP=Control Point; HSR=High-Speed Rail; LAUS=Los Angeles Union Station; Link US=Link Union Station

2.5 Proposed Project Overview

The proposed project components are summarized north to south below and depicted on Figure 2-6.

- Throat and Elevated Rail Yard – The proposed project includes subgrade and structural improvements in Segment 1 of the project study area (throat segment) to increase the elevation of the tracks leading to the rail yard. The proposed project includes the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail service providers (Metrolink/Amtrak) and accommodate the planned HSR system within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The rail yard would be elevated approximately 15 feet. New passenger platforms with individualized canopies would be constructed on the elevated rail yard, with an underlying assumption that the platform infrastructure and associated VCEs (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of CP Chavez, the proposed project also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- Above-Grade Passenger Concourse with New Expanded Passageway – The proposed project includes an above-grade passenger concourse with new expanded passageway in Segment 2 of the project study area (concourse segment). The above-grade passenger concourse with new expanded passageway would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The new passenger concourse would create an opportunity for an outdoor, community-oriented space and enhance ADA accessibility at LAUS. The elevated portion of the above-grade passenger concourse would be located above the rail yard, approximately 90 feet above the existing grade with new plazas east and west of the elevated rail yard (East and West Plazas). The new expanded passageway would be located below the rail yard to provide additional passenger travel-path convenience and options. Amtrak ticketing and baggage check-in services would occur at two locations at the east and west ends of LAUS, and new carousels would be constructed within the new expanded passageway. The above-grade passenger concourse includes a canopy over the West Plaza up to 70 feet in height, with individual canopies that would extend up to 25 feet over each platform. New VCEs would also be constructed throughout the concourse to enhance passenger movements throughout LAUS while meeting ADA and NFPA platform egress code requirements.

- Run-Through Tracks – The proposed project includes up to 10 new run-through tracks (including a new loop track) south of LAUS in Segment 3 of the project study area (run-through segment). The run-through tracks would facilitate connections for regional/intercity rail trains and HSR trains from LAUS to the main line tracks on the west bank of the Los Angeles River. A "common" viaduct/deck over US-101 and embankment south of US-101, from Vignes Street to Center Street, would be constructed wide enough to support regional/intercity rail run-through service, and future run-through service for the planned HSR system.

The proposed project would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, PTC, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

As discussed above, the project would facilitate implementation of run-through service on up to 10 tracks south of LAUS, with main line connections for both regional/intercity rail trains and HSR trains. In terms of construction phasing, a project implementation approach is outlined in this EIR (Phase A and Phase B). Metro and the project stakeholders are also considering design approaches that would accommodate future interoperability for multiple rail service providers from LAUS to the main line tracks on the west bank of the Los Angeles River.

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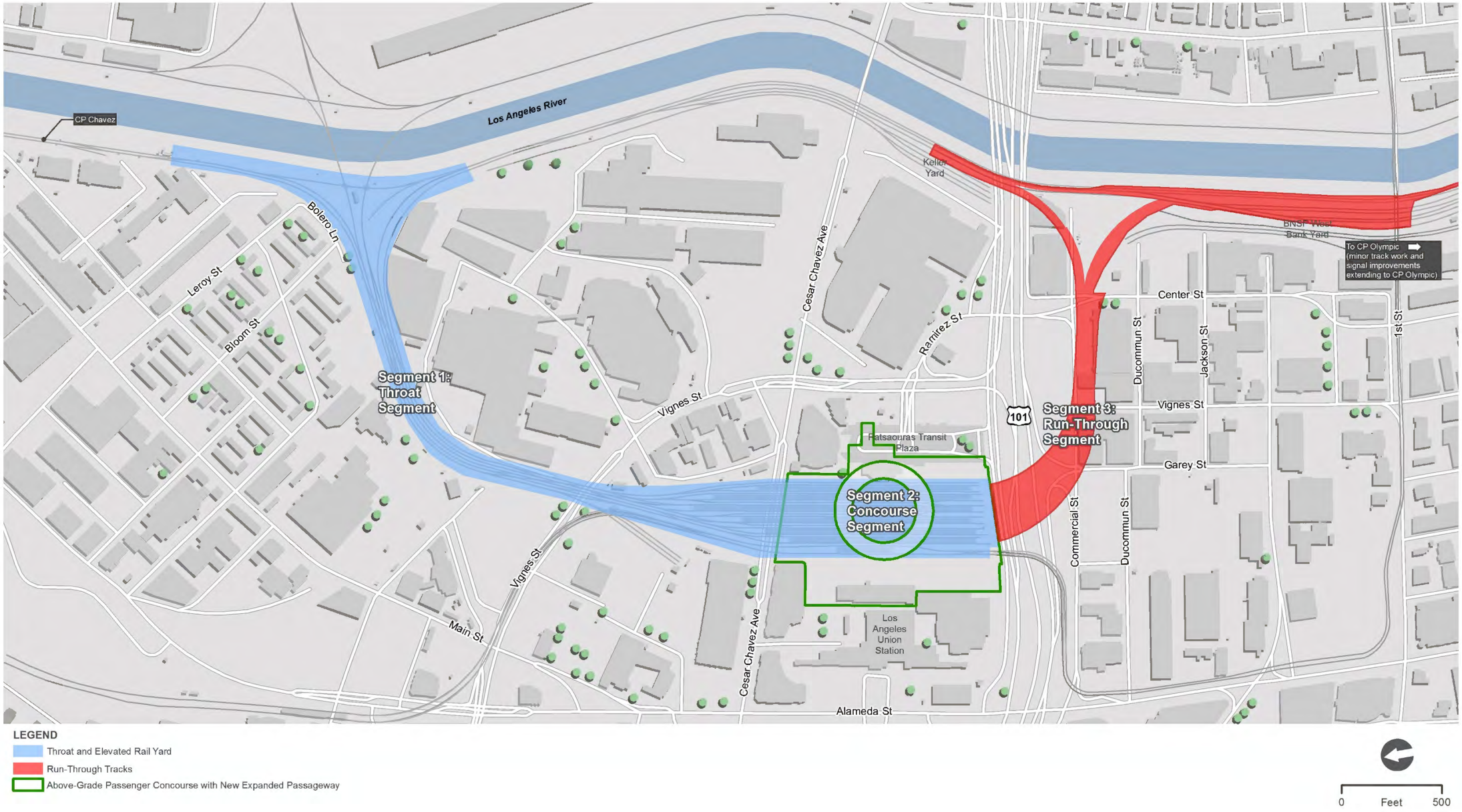
Figure 2-6. Major Project Components



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2.6 Project Objectives

Metro identified the following objectives for implementing the proposed project:

- Reduce train movement constraints resulting from stub-end operation by providing run-through service consistent with the *California State Rail Plan* (Caltrans 2018) and SCORE Program
- Provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities
- Design track and platform infrastructure at LAUS necessary to accommodate the planned HSR system consistent with California Proposition 1A (High-Speed Rail Act), passed in 2008
- Maintain rail/transit service and minimize disruption to commuters during construction, to the maximum extent feasible
- Avoid and minimize impacts on sensitive environmental resources to the maximum extent feasible, including, but not limited to, historical resources
- Contribute to a regional reduction of GHG emissions and VMT

2.7 Project Footprint

The project footprint extends to the furthest extent of temporary work areas (temporary impacts) and permanent infrastructure (permanent impacts) associated with the proposed project. To provide the most flexibility and utilization of this EIR, the project footprint depicted on Figure 2-7 through Figure 2-11 encompasses the physical space to reconstruct the throat with six lead tracks within a shared track alignment in the throat segment (Segment 1), an above-grade passenger concourse with new expanded passageway and elevated rail yard in the concourse segment (Segment 2), and up to 10 run-through tracks that could facilitate interoperable run-through service south of LAUS in the run-through segment (Segment 3).

2.8 Operational Enhancements

In parallel with project implementation, SCRRA is currently developing the SCORE Program, a $10 billion plan that identifies the need for substantial investments in rail infrastructure in the Southern California region to upgrade the Metrolink system and meet the current and future needs of the traveling public. The proposed project is a critical component of the SCORE Program, providing capacity enhancements to accommodate the forecasted increase in train movements and associated passenger volumes at LAUS.

The project would facilitate a substantial increase in rail operational capacity for the region, reduced train idling time at LAUS, and improved on-time performance for trains using LAUS. The project would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of GHG emissions and VMT, as demonstrated by the operational analysis provided in the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016).

Table 2-3 summarizes the estimated total daily train movements (revenue and non-revenue) through LAUS and the total trips during the two 3-hour AM and PM peak operating periods for 2016 and future horizon years 2026, 2031 and 2040[1]. Revenue trains operating through LAUS, such as existing Pacific Surfliner and future Metrolink run-through trains, count as two movements - one inbound and one outbound.

Table 2-3. Existing (2016) and Future Daily Train Movements

Transit Operator	Frequency	2016	2026	2031	2040
Metrolink (Regional Rail)	**Total Daily**	**185**	**410**	**690**	**690**
	Revenue Trains	139	370	678	678
	Non-Revenue Trains[1]	46	40	12	12
	6-hour peak	80	144	250	250
Amtrak/LOSSAN	**Total Daily[2]**	**48**	**68**	**80**	**140**
	Pacific Surfliner	32	48	56	112
	Long-Distance Trains	5	5	5	5
	Non-Revenue Trains[3]	11	15	19	23
	6-hour peak	13	21	21	39
CHSRA	**Total Daily**	—	—	—	**272**
	Non-Revenue Trains[4]	—	—	—	50
	6-hour peak	—	—	—	132

Source: Appendix B of this EIR

Notes:

1 ***This includes all deadhead equipment movements between LAUS and the CMF.***

2 ***This includes through trains on the LOSSAN corridor, as well as proposed Coachella Valley Service starting in 2026.***

3 ***This includes deadhead equipment movements for Pacific Surfliner and Amtrak Long Distance-trains (Southwest Chief, Sunset Limited/Texas Eagle, Coast Starlight) between LAUS and Amtrak Los Angeles Maintenance Facility.***

4 ***This includes deadhead equipment movements for HSR trains between LAUS and HSR Los Angeles Maintenance Facility.***

CHSRA=California High-Speed Rail Authority; CMF=Central Maintenance Facility; HSR=High-Speed Rail; LAUS=Los Angeles Union Station; LOSSAN=Los Angeles – San Diego – San Luis Obispo

[1] The years 2026 and 2031 correspond to the two major phases of project implementation (interim condition and full build-out condition). The year 2040 corresponds to the horizon year and corresponding service goals and objectives of multiple statewide plans and mandates.

Figure 2-7. Project Footprint (Throat Segment) (Map 1 of 5)

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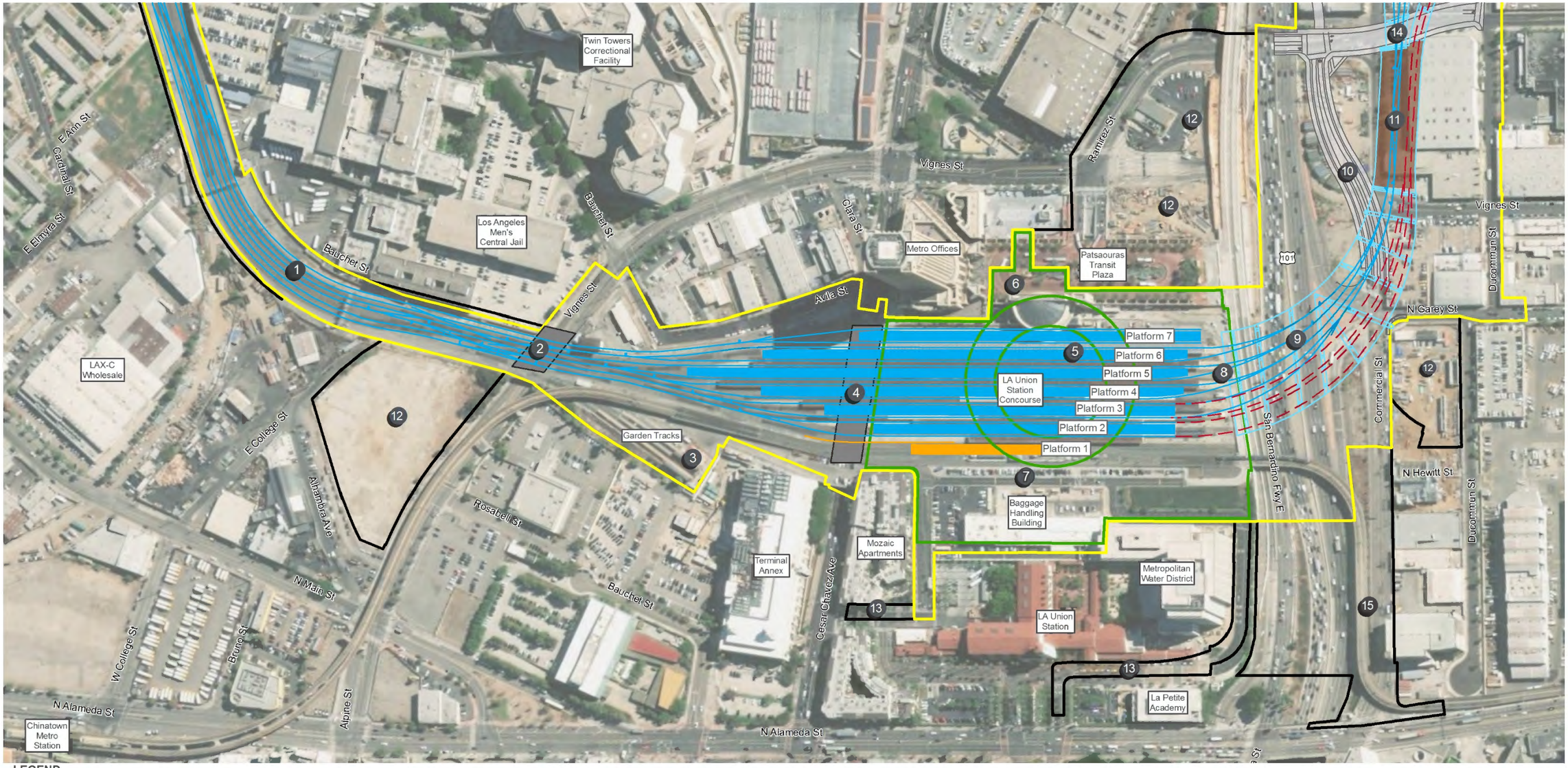
Figure 2-8. Project Footprint (Throat, Concourse, and Run-Through Segments) (Map 2 of 5)



LEGEND

- Permanent Impacts
- Temporary Impacts
- Regional/Intercity Rail Track
- Future High-Speed Rail Track (Full Build-Out with HSR Condition)
- Road Improvement
- Viaduct Structure
- Gold Line Rail Track
- Gold Line Platform
- Regional/Intercity Rail Platform
- Bridge Replacement
- Above-Grade Passenger Concourse with New Expanded Passageway
- Run-Through Track Embankment

1. Throat Track Reconstruction (1 Lead Track - Shared Alignment)
2. Vignes Street Bridge Replacement
3. Remove Garden Tracks
4. Cesar Chavez Avenue Bridge Replacement
5. Passanger Concourse and Rail Yard Improvements
6. East Plaza
7. West Plaza
8. Run-Through Tracks (up to 10 Total)
9. Regional/Intercity Rail and High-Speed Rail US-101 Combined Viaduct/Deck
10. Commercial Street Realignment
11. Run-Through Track Embankment
12. Construction Staging/ Assembly Area
13. Construction Access
14. Center Street Intersection Lowering
15. Roadway Reconfiguration (US-101/Commercial Street)

MAP INDEX

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Figure 2-9. Project Footprint (Run-Through Segment) (Map 3 of 5)

LEGEND

- Permanent Impacts
- Regional/Intercity Rail Track
- Future High-Speed Rail Track (Full Build-Out with HSR Condition)
- Viaduct Structure
- Road Improvement

1. Loop Track
2. Maintenance Access Road
3. Regional/Intercity Rail Run-Through Structures
4. HSR Run-Through Structure
5. Division 20 Access Road
6. Modifications to BNSF West Bank Yard
7. HSR Main Line connection under First Street Roadway Bridge

MAP INDEX

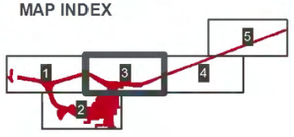

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Figure 2-10. Project Footprint (Run-Through Segment) (Map 4 of 5)

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Figure 2-11. Project Footprint (Run-Through Segment) (Map 5 of 5)

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The operational scenarios for 2026, 2031, and 2040 (Table 2-3) are influenced by statewide and regional plans for service increases and other required off-site infrastructure (i.e., SCORE Program). The operational scenarios represent a conservative (high) estimate of the forecasted increases in regional/intercity rail and HSR train trips that could occur at LAUS and are used for environmental evaluation purposes.

Infrastructure improvements outside of the project study area that are required to implement system-wide efficiencies and changes in regional/intercity rail operations from implementation of the SCORE Program are not part of the proposed project and are the responsibility of SCRRA and agency partners. Furthermore, the operational aspects of the planned HSR system and the associated environmental impacts are not evaluated in this EIR because operation of the planned HSR system and the associated impacts are addressed separately in the environmental documentation being prepared by FRA and CHSRA for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

2.9 Infrastructure Improvements

The key infrastructure improvements associated with the proposed project are described below under six main categories and referenced in this EIR accordingly:

- Track improvements – A description of the new lead tracks in the throat segment, track/platform arrangements in the rail yard, and characteristics of the run-through track connections to the main line tracks along the Los Angeles River
- Structural improvements – A description of the bridge replacements, run-through track structures, and embankments/retaining walls
- Rail signal improvements – A description of the communications and systems-related equipment
- Utility improvements – A description of the wet and dry utility relocations, extensions, and/or abandonments
- Drainage and water quality improvements – A description of the new drainage systems and permanent stormwater best management practices (BMP)
- Circulation and streetscape improvements – A description of the temporary detours, roadway improvements (widening, realignment, reconfiguring, restriping, and resurfacing of local roadways) and safety improvements along nearby streets

A description of the features and characteristics of the new above-grade passenger concourse with new expanded passageway is provided separate from the description of key infrastructure improvements for the project (Section 2.9.7).

2.9.1 Track Improvements

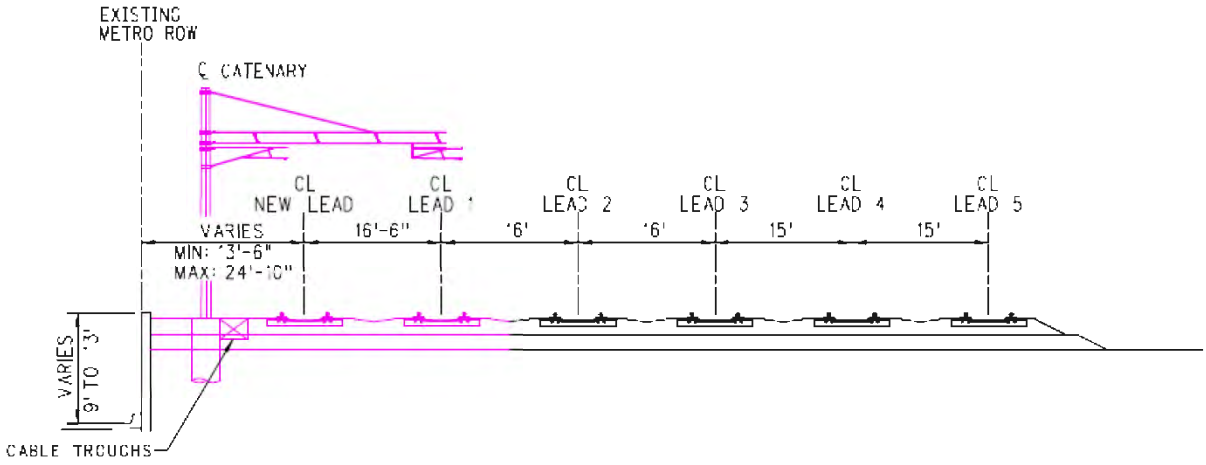
Throat Segment

The proposed project includes a six-track throat with regional/intercity rail trains and future HSR trains sharing the western compatible lead tracks north of LAUS. The proposed project would include reconstruction of the throat with the addition of one track within the existing railroad ROW. Retaining wall(s) would also be required within the existing railroad ROW. Track improvements that would occur in the throat segment in the interim, full build-out, and full build-out with HSR condition are summarized below.

- In the interim condition, lead tracks would not be constructed in the throat segment; however, special track work consisting of replacement of turnouts and track at CP Mission would occur to facilitate run-through service south of LAUS.
- In the full build-out condition, the throat would be reconstructed with an additional lead track, for a total of six lead tracks. The two western lead tracks would be constructed with a minimum 650'-0"radius curve and with turnouts compatible for future operation of the planned HSR system.
- In the full build-out with HSR condition, regional/intercity rail trains and HSR trains would share compatible tracks.

Compatible tracks would be utilized by regional/intercity rail trains both in the full build-out condition and after the initiation of planned HSR service (full build-out with HSR condition), as they would be capable of running under their own power on the electrified tracks. Figure 2-12 depicts a cross-section of the full build-out with HSR condition (HSR infrastructure depicted in pink) and the two western shared tracks in the throat segment.

Figure 2-12. Cross-Section of Shared Lead Tracks for Regional/Intercity Rail and Planned HSR System – Segment 1: Throat Segment at William Mead Homes



All lead tracks through the throat, as well as the station tracks they serve (new Tracks 3 through 14, respectively), would be raised to a maximum of 15 feet at an approximate 0.7 percent maximum grade to accommodate elevated platforms. Reconfiguring and raising of the platforms and tracks in the rail yard requires removal of the Garden Tracks and associated track work in the throat, including switch and turnout configuration modifications; removal of several existing crossovers, turnouts, and escape tracks; and construction of new switches, crossovers, turnouts, and track leads; as well as new signal, PTC, and communications-related equipment.

Concourse Segment (Temporary Run-Through Track Ramp, Elevated Rail Yard, and Platform Improvements)

Temporary Run-Through Track Ramp (Interim Condition)

In the interim condition, the southern portion of Tracks 7 and 8 (and the corresponding portion of Platform 4) would be removed to construct a temporary run-through track ramp at the southern extent of the LAUS rail yard. Two run-through tracks would be installed on the temporary ramp structure connecting to the US-101 viaduct. Tracks 7 and 8 would facilitate run-through service for regional/intercity trains in the interim condition. Passenger ramps leading to Platform 4 would be modified and/or demolished to facilitate construction of the temporary run-through track ramp.

Elevated Rail Yard (Full Build-Out Condition)

In the full build-out condition, the rail yard would include 14 tracks similar to the existing condition. Tracks 1 and 2 serving the Gold Line would remain at the current elevation. Tracks 3 through 14 would be raised by approximately 15 feet and constructed at a 0.0 percent (level) grade to meet the required run-through track clearances over the El Monte Busway and US-101 (16.5 feet minimum clearance per Caltrans standards).

The full build-out and full build-out with HSR configurations of the track and platforms in the rail yard are summarized below:

- Tracks 1 and 2 (Platform 1) – In both full build-out conditions, Metro Gold Line trains would utilize Tracks 1 and 2.
- Tracks 3 through 6 (Platforms 2 and 3) – In the full build-out condition, Tracks 3 through 6 would be constructed for regional/intercity rail use. In the full build-out with HSR condition, two platform configuration design options (Design Options A and B) are considered that would accommodate up to four HSR tracks in the rail yard. Under both design options, VCEs would also need to be modified at a later time to facilitate passenger access to the elevated HSR platforms. The design options are described as follows:
    - Design Option A - Tracks 3 through 6 would be converted for HSR use with raised platforms at a later time to meet CHSRA's level boarding requirements (Platforms 2 and 3) and catenary/electrification of four HSR tracks.

  - Design Option B - Tracks 3 and 4 would be converted for HSR use with a raised platform at a later time to meet CHSRA's level boarding requirements (Platform 2) and catenary/electrification of two HSR tracks. Platform 3 and associated Tracks 5 and 6 would be retained for regional/intercity rail service.

- Tracks 7 through 12 (Platforms 4 through 6) – In the full build-out condition, the temporary run-through track ramp and Tracks 7 and 8 would be demolished to facilitate construction of the elevated rail yard. In both full build-out conditions, Tracks 7 through 12 would serve regional/intercity rail trains with up to six regional/intercity rail platform tracks. A minimum of four regional/intercity rail run-through tracks would extend south of LAUS from Platforms 4 through 6.
- Tracks 13 and 14 (Platform 7) – In the interim and full build-out conditions, Tracks 13 and 14 would remain as stub-end tracks for regional/intercity rail use.

Demolition of retaining walls and construction of new retaining walls, fire/life safety evacuation routes/access roads, and other ancillary improvements are also required to facilitate construction of the track improvements above.

Platform Improvements

Similar to existing conditions, the proposed project would result in seven platforms in the rail yard. Platform 1 serving the Gold Line would be lengthened but would remain at the current elevation, and Platforms 2 through 7 would be reconstructed at a 0.0 percent grade, approximately 15 feet higher in elevation than the current platforms. Platforms 2 through 7 would also be widened from approximately 21 feet to 29 feet to enhance safety, allow enough space for new VCEs while still providing sufficient room for passenger movements, and meet current building code requirements.

New canopies over each platform would be constructed to provide shade and stormwater protection to patrons and employees on the new platforms. Canopies would be designed to provide adequate air circulation from diesel exhaust and lighting during the nighttime hours.

In the interim condition, the rail yard would be retained at its current elevation. Platform 4 would be shortened to facilitate construction of a ramp and two run-through tracks from Tracks 7 and 8.

In the full build-out condition, the rail yard would be elevated. Metro Gold Line trains would be served from Platform 1 and regional/intercity rail trains would be served from Platforms 2 through 7, which would be reconstructed to low-floor requirements.

In the full build-out with HSR condition, any platform(s) allocated to HSR service would be converted to high-level platforms (also known as level-boarding) to be compatible with HSR trains, which are planned to use high-floor equipment. As discussed above, VCEs would also need to be modified to facilitate passenger access to the elevated HSR platforms. Once platforms are converted for the planned HSR system, they could continue to be available for use by regional/intercity trains if high-level vehicles are used in the future at the discretion of the rail operators. All regional/intercity trains currently utilize low-level

equipment. The platform configuration design options for the full build-out with HSR condition are described below:

- Design Option A – Platforms 2 and 3 would be raised, and associated VCEs would be modified to accommodate the planned HSR system. Platforms 4 through 7 would remain available for regional/intercity rail trains.
- Design Option B – Platform 2 would be raised, and associated VCEs would be modified to accommodate the planned HSR system. Platforms 3 through 7 would remain available for regional/intercity rail trains.

The platform allocation in the rail yard could be adjusted based on negotiations and operating agreements with Metro and the rail operators at LAUS. The platform characteristics shown in Table 2-4 are included in the environmental evaluation.

Table 2-4. Platform Characteristics – Interim and Full Build-Out Conditions

Platform No.	Tracks	Platform Length (interim/full build-out) (feet)	Operator (interim/full-build-out)	Platform Tracks South of LAUS (interim/full build-out)
1	1 - 2	450	Metro Gold Line	Run-Through Service
2	3 - 4	870	Metrolink and Amtrak/CHSRA	Stub-End/HSR Run-Through Service
3*	5 - 6	1,010	Metrolink and Amtrak/CHSRA	Stub-End/HSR or Regional and Intercity Rail Run-Through Service
4	7 - 8	758/1,230	Metrolink and Amtrak	Stub-End/Regional and Intercity Rail Run-Through Service
5	9 - 10	1,445	Metrolink and Amtrak	Stub-End/Regional and Intercity Rail Run-Through Service
6	11 - 12	1,230	Metrolink and Amtrak	Stub-End/Regional and Intercity Rail Run-Through Service
7	13 - 14	990	Metrolink and Amtrak	Stub-End/Stub-End Service

Notes:

** Track and Platform Configuration Design Option A is depicted on Figure 2-8 because the planned HSR system is accommodated for in this EIR.*

CHSRA=California High-Speed Rail Authority; EIR=environmental impact report; HSR=High=Speed Rail; LAUS=Los Angeles Union Station; No.= number

Run-Through Segment

In the interim condition, the US-101 viaduct, embankment south of US-101, and regional/intercity rail structures east of Center Street would be constructed to support the loop track and up to two run-through track main line connections. To accommodate the planned HSR system, the embankment leading to Center Street is designed so future HSR run-through tracks east of Center Street would avoid conflicts with Metro's ESOC site and the widened Red/Purple Line subway tunnel portal area that would be constructed as part of Metro's Division 20 Portal Widening and Turnback Facility project.

The loop track allows for the circular routing of trains around LAUS and an additional route for southbound trains to loop through LAUS and travel northbound toward Antelope Valley, Ventura County, or SCRRA's Central Maintenance Facility (CMF). The loop track provides operational benefits, including increased station capacity, greater operational flexibility, and more flexible train scheduling. The existing portion of the Amtrak lead track adjacent to Keller Yard would serve as the connecting track for the loop track, thereby requiring a portion of the existing Amtrak lead track to be removed from the point where the loop track touches ground just south of the US-101 overpass. A new turnout and lead connection would be installed off of the main line tracks to the south.

In the interim condition, the regional/intercity rail run-through track connection to the main line tracks would result in temporary impacts on the BNSF West Bank Yard because existing storage tracks could be restored to their existing capacity after regional/intercity rail main line connections are complete. Between First Street and US-101 along the west bank of the Los Angeles River, the existing two-track main line would be reduced to a single track to accommodate the adjacent run-through track connection. Operationally, the loss of one main line track along this portion of the alignment would be offset by the additional capacity provided by the new regional/intercity run-through tracks.

In the full build-out condition, the project includes up to six regional/intercity rail run-through tracks from rail yard Tracks 7 through 12 (including the loop track) to facilitate regional/intercity rail run-through service south of LAUS to the main line along the west bank of the Los Angeles River.

In the full build-out with HSR condition, the project accommodates future construction of up to four HSR run-through tracks (Tracks 3 through 6) south of LAUS to the main line along the west bank of the Los Angeles River under the First Street Bridge. Operation of the planned HSR system would result in permanent impacts and potential displacement/relocation of the BNSF West Bank Yard due to the permanent loss of storage tracks. As discussed above, any operational impacts and required mitigation (i.e., off-site improvements) to facilitate the planned HSR system are not evaluated in the Link US EIR. Potential impacts resulting from the displacement and relocation of the BNSF West Bank Yard will be fully addressed in the EIS/EIR being prepared for the HSR Los Angeles to Anaheim Project Section.

2.9.2 Structural Improvements

The project requires the following bridges, viaducts, and structural improvements:

- Replacement of the existing railroad bridges over Vignes Street and Cesar Chavez Avenue
- Construction of a common viaduct over US-101 and the southbound US-101 ramp intersection at Commercial Street with a common deck to support regional/intercity rail and the HSR run-through tracks (the US-101 viaduct terminates east of Vignes Street)
- Construction of a common embankment south of US-101 between Vignes Street and Center Street to support regional/intercity rail and HSR run-through tracks
- Construction of a viaduct over Center Street to support the regional/intercity rail loop track and run-through tracks
- Construction of a separate viaduct over Center Street to support future HSR run-through tracks
- Construction of structures and retained embankments east of Center Street to support the loop track and segments of the regional/intercity rail and HSR run-through tracks at the BNSF West Bank Yard and along the main line tracks
- Construction of a new retaining wall within the railroad ROW to support six lead tracks in the throat segment
- Construction of new concrete aprons, parapet walls, in-fill walls, concrete abutments, and/or placement of new concrete foundations

The structural improvements are described in detail below (discussed north to south). Structural elements described below would be designed for a live load of Cooper E-60, as applicable.[2]

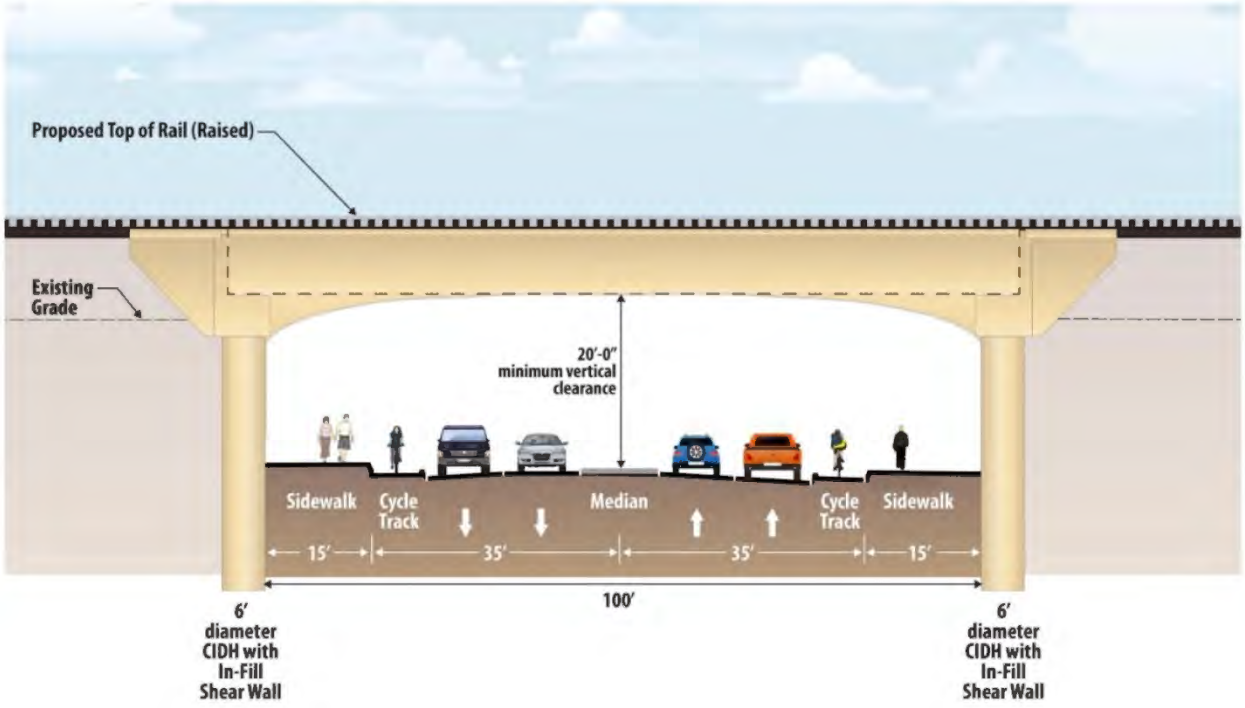
Vignes Street Bridge

Replacement of the existing railroad bridge over Vignes Street is required because it could not support the additional loading requirements for passenger trains or steam locomotives at 20 miles per hour. In addition, the existing bridge was constructed in 1937, is a historical resource, is near the end of its design service life, and previous inspection reports have indicated various locations where concrete spalling and efflorescence from water leaking is apparent at many of the joints. While the structural integrity of the bridge would be enhanced, the details of the aesthetic features would be determined during final design in coordination with the City of Los Angeles and other applicable regulatory agencies. Figure 2-13 depicts a typical section for the replacement of the Vignes Street Bridge.

[2] Cooper E ratings are used to express live load demand for a bridge structure. The Cooper E ratings are calculated using the American Railway Engineering and Maintenance-of-Way Association Cooper live load diagram to determine the actual E rating of a bridge, which depends on train speed, bridge span length, and bridge design.

The Vignes Street Bridge would be reconstructed in two portions, the westerly and easterly portions, resulting in closure of Vignes Street during the reconstruction of either the easterly or westerly portion. During this duration, traffic along Vignes Street would be rerouted along Cesar Chavez Avenue and Alameda Street.

Figure 2-13. Proposed Vignes Street Bridge Replacement (Typical Section)

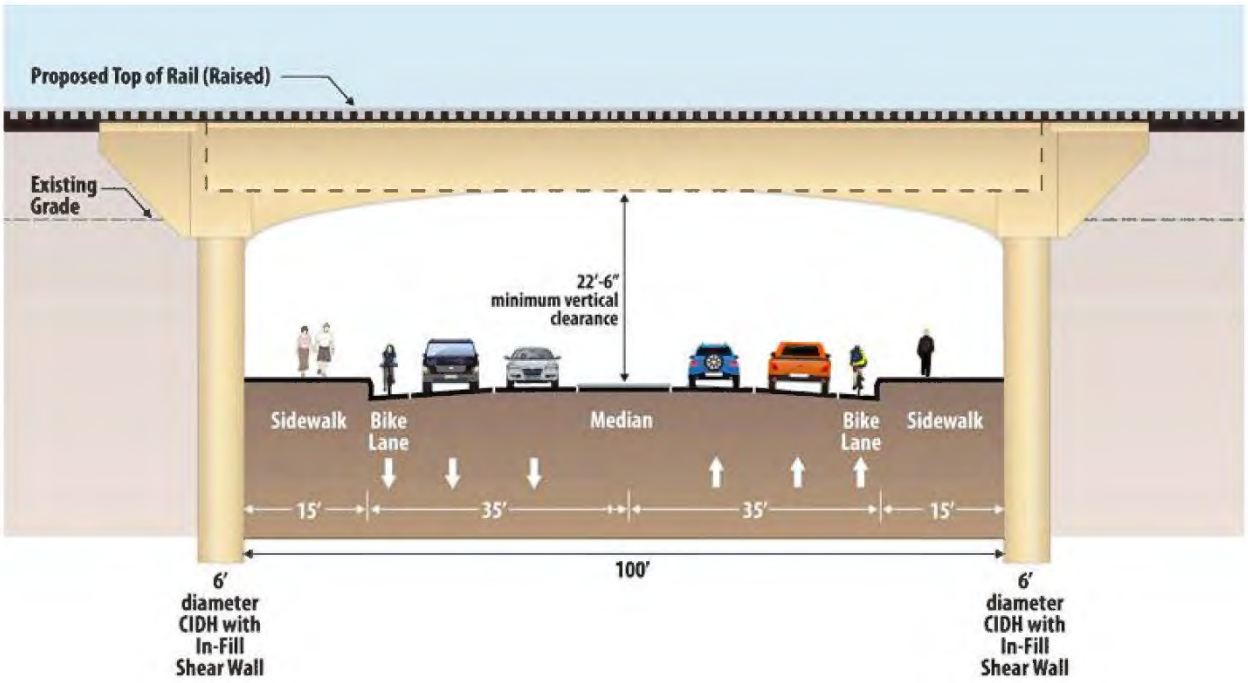


Cesar Chavez Avenue Bridge

Replacement of the existing railroad bridge over Cesar Chavez Avenue is required because it could not support the additional loading requirements for passenger trains and steam locomotives at 20 miles per hour. Similar to the Vignes Street Bridge, this bridge was also constructed in 1937, is a historical resource, is nearing its design service life, and has had similar deficient inspection reports. While the structural integrity of the bridge would be enhanced, the details of the aesthetic features would be determined during final design in coordination with the City of Los Angeles and other applicable regulatory agencies. Figure 2-14 depicts a typical section for the replacement of the Cesar Chavez Avenue Bridge.

Closure of Cesar Chavez Avenue is required during demolition of the existing bridge. During this closure, traffic along Cesar Chavez Avenue would be rerouted along Vignes Street and Alameda Street.

Figure 2-14. Proposed Cesar Chavez Avenue Bridge Replacement (Typical Section)



US-101 Viaduct (Common Viaduct/Deck for Regional/Intercity Rail and High-Speed Rail)

In the interim condition, a new viaduct over the El Monte Busway and US-101 would be constructed with a deck wide enough to support two run-through tracks in the interim condition, up to six regional/intercity rail tracks in the full build-out condition, and up to 10 run-through tracks in the full build-out condition with HSR (common viaduct/deck).

The US-101 viaduct within Caltrans ROW would be approximately 283 feet wide, 736 feet long, with a deck elevation that varies between 294 feet and 313 feet in height. The height of the structure would vary from 17 feet to 36 feet in height, depending on location. The US-101 viaduct would be supported by two abutments and on nine bents located at the south end of LAUS, between the El Monte Busway and US-101, at the freeway median, and on the south side of US-101 ROW. Bents supporting the US-101 viaduct would also be located within the median and sidewalks of the newly realigned portion of Commercial Street at the location of the crossing. The close spacing of the columns along this segment would require Vignes Street between Commercial Street and Ducommun Street to be permanently closed to vehicular traffic.

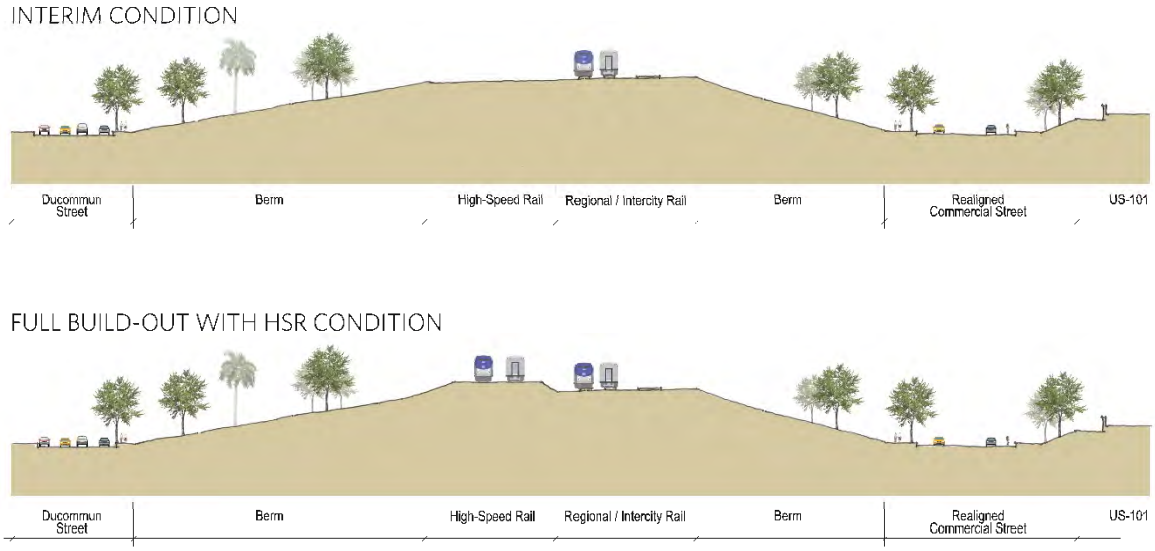
The width of the US-101 viaduct would taper down and become narrower as the structure crosses US-101 and continues east toward Vignes Street. The US-101 viaduct would meet the vertical clearance requirements of the El Monte Busway and US-101 (16.5 feet minimum clearance) and the loading requirements per Metrolink, Amtrak, and CHSRA standards. Metro may apply aesthetic treatments to the US-101 viaduct in coordination with Caltrans and the City of Los Angeles.

Run-Through Track Embankment (Common Structure for Regional/Intercity Rail and High-Speed Rail)

In the interim condition, an embankment would be constructed wide enough to support the regional/intercity rail run-through tracks and HSR run-through tracks from Vignes Street to the west side of Center Street. The embankment would rise approximately 29 feet above the existing elevation of US-101 and constructed where Commercial Street currently exists, thereby requiring realignment of Commercial Street.

In the full build-out condition, no major changes to the embankment would occur to support additional run-through service south of LAUS. In the full build-out condition with HSR, a nominal amount of additional fill would be placed along the southern portion of the embankment to accommodate a higher HSR profile. Figure 2-15 depicts a cross-section of the run-through track embankment in the interim condition and the full build-out with HSR condition.

Figure 2-15. Run-Through Track Embankment South of US-101 (Looking West)



Regional/Intercity Rail and High-Speed Rail Viaducts/Embankments (East of Center Street)

The western edge of Center Street serves as a transition point from the run-through track embankment to separate viaduct structures over Center Street that would support regional/intercity rail trains in the interim and full build-out condition and HSR trains in the full build-out with HSR condition. The characteristics of the structural improvements to support the regional/intercity rail and HSR infrastructure east of Center Street are discussed in more detail below.

- *Loop Track* – The loop track would be constructed in the interim condition and supported on a shared viaduct with the regional/intercity rail run-through tracks over Center Street. Just east of Center Street, the structure splits, and the loop track would be supported on its own embankment as the alignment approaches US-101. A viaduct is required to support the loop track over the Division 20 access road.
- *Regional/Intercity Rail Run-Through Tracks* – The regional/intercity run-through tracks would be constructed in the interim condition and supported on a viaduct shared with the loop track over Center Street. Just east of Center Street, where the structure splits, run-through tracks would be supported on an embankment until it reaches the restored Amtrak lead track at the north end of the BNSF West Bank Yard, where it then transitions to a viaduct. This regional/intercity rail viaduct would transition to an embankment before touching down and connecting to the main line tracks along the west bank of the Los Angeles River south of the First Street Bridge.
- *HSR Run-Through Tracks* – In the full build-out condition with HSR, HSR run-through tracks would be supported on a separate viaduct over Center Street (south of the regional/intercity rail viaduct) that would descend as it approaches the existing Viertel's Central Division property, and over the Division 20 Rail Yard, before transitioning to an embankment where HSR run-through tracks would connect to the main line tracks along the west bank of the Los Angeles River under the First Street Bridge.

As discussed above, Metro and the project stakeholders are also considering design approaches that would accommodate future interoperability for multiple rail service providers from LAUS to the main line tracks on the west bank of the Los Angeles River. Any modifications to the run-through track infrastructure described above to accommodate interoperability are anticipated to reduce construction costs and associated timeframes and would occur within the limits of the project footprint depicted on Figure 2-7 through Figure 2-11.

2.9.3 Rail Signal Improvements

Replacement of the rail signals and communication system is critical to optimize track phasing and increase efficiency of routine maintenance/testing of the signal system. The proposed project requires modifications to the existing railroad signal, communication, and PTC systems; and new signal houses; wayside signals; and ancillary equipment throughout the project limits to facilitate communications between various signal and systems-related equipment.

In the interim condition, removal and replacement of the CP Mission and CP Terminal signal houses would occur along with replacement of existing signal backbones and conduits in the throat segment to facilitate run-through service for regional/intercity trains. Existing rail signals and communication signal circuits would be replaced with "split box" microprocessor technology. The new systems would be designed to be compatible with Metro, regional/intercity rail, and CHSRA requirements, as appropriate.

2.9.4 Utility Requirements

There are at least 23 utility companies with approximately 60 active utility lines that would be impacted by the proposed project. This includes four public agencies and six private utility owners that serve the area with water, sewer, gas, electricity, and communications, as well as three private oil shipping companies. Major utility lines that could be affected by the project include:

- The City of Los Angeles Department of Water and Power (LADWP) overhead electrical lines along Commercial Street
- The LADWP overhead sub-transmission (34.5 kilovolt) and distribution lines starting at the intersection of Bolero Lane and Leroy Street that cross the throat area to the east side of the Los Angeles County Men's Central Jail
- The LADWP overhead electrical lines on College Street that cross the throat area serving the Los Angeles County Men's Central Jail customer substation
- The Sprint, CenturyLink, and Verizon underground fiber optic facilities that cross the throat and run parallel to the existing tracks on the north side from east of the Los Angeles River to the area west of William Mead Homes
- A City of Los Angeles Department of Public Works 12-inch water line along Commercial Street
- A City of Los Angeles Department of Public Works 12-foot by 12-foot reinforced concrete box storm drain at the intersection of Commercial Street and Vignes Street
- A City of Los Angeles Department of Public Works 24-inch storm drain pipeline along Center Street

The proposed project would require additional utility services for the new passenger concourse, associated retail and office/commercial spaces, and new platform areas. Increased on-site water service would be required for fire flow and domestic flow demands and pressures within the new passenger concourse and on the platforms. Additional power service connections from LADWP would be required to provide redundant power sources, as well as increased power supply. New sewer service laterals would also be required to serve the new passenger concourse. These new utility services would not require any reconstruction of existing public utility lines to accommodate the additional demands. The proposed project also requires the relocation, extension, and/or abandonment of some of the existing subsurface and overhead crossing utilities within the LAUS platform area (i.e., water, sewer, storm drain, power, gas, fiber optic, and telephone lines). All utility work would be conducted in accordance with applicable utility design criteria and engineering standards. Existing street lights and traffic signals may also be relocated or replaced, as needed.

2.9.5 Drainage and Water Quality Improvements

The proposed project requires modifications to existing drainage facilities and construction of new drainage facilities to accommodate proposed infrastructure and protect water quality during and after construction. The drainage design focuses on maintaining existing drainage flow patterns and drainage systems to the maximum extent practicable; however, new drainage systems and post-construction stormwater BMPs would be required. The proposed project would include the following post-construction BMPs to address applicable stormwater requirements:

- In Segment 1 of the project study area, a structural stormwater vault is proposed to capture the area north of Vignes Street. A capture-and-use BMP (cistern) is also proposed to capture stormwater for the rest of this segment, including a portion of the concourse area (Segment 2).
- In Segment 2 of the project study area, the concourse area, capture-and-use BMPs (cisterns) are proposed.
- In Segment 3, south of US-101, bioretention and other structural stormwater filter BMPs are proposed. Consideration of bioretention BMPs as green street features were made for public streets south of US-101 by incorporating City of Los Angeles Green Street Standard Plans or modified Green Street Standard plans.

2.9.6 Circulation and Streetscape Improvements

Circulation and streetscape improvements associated with the proposed project include widening, restriping, reconfiguring, and resurfacing of nearby streets and ancillary infrastructure improvements to encourage active transportation and enhance public safety in the project study area. Safety improvements to portions of Main Street and US-101 would be implemented as part of the proposed project, as would modifications to existing traffic signals and the traffic signal systems in the project study area.

A description of the circulation and streetscape improvements are presented below. Roadway ROW widths are subject to the *Mobility Plan 2035* (City of Los Angeles 2015).

US-101

The following safety improvements within the Caltrans ROW would be implemented as part of the proposed project:

US-101 Main Line

- Increased median width and shoulder widths for enhanced horizontal clearance
- Increased horizontal stopping sight distance
- Restriping main line for enhanced curvature
- Increased lane widths

- Increased weaving distance with maximized lengths between southbound Los Angeles Street on-ramp and southbound Commercial Street off-ramp
- Increased tangent length between reversing curves for improved drivability (greater distance between curves allows the driver to see the upcoming horizontal curve, prepare for the curve ahead, and adjust driving/steering accordingly)

Alameda Street Off-Ramp (Northbound)

- Increased deceleration length
- Standard ramp exit with diverge angle (provides a safety zone for drivers making last-minute decisions)
- Increased shoulder width for enhanced horizontal clearance

Commercial Street Off-Ramp and On-Ramp (Southbound)

- Increased shoulder widths for enhanced horizontal clearance

Commercial Street/Center Street Improvements

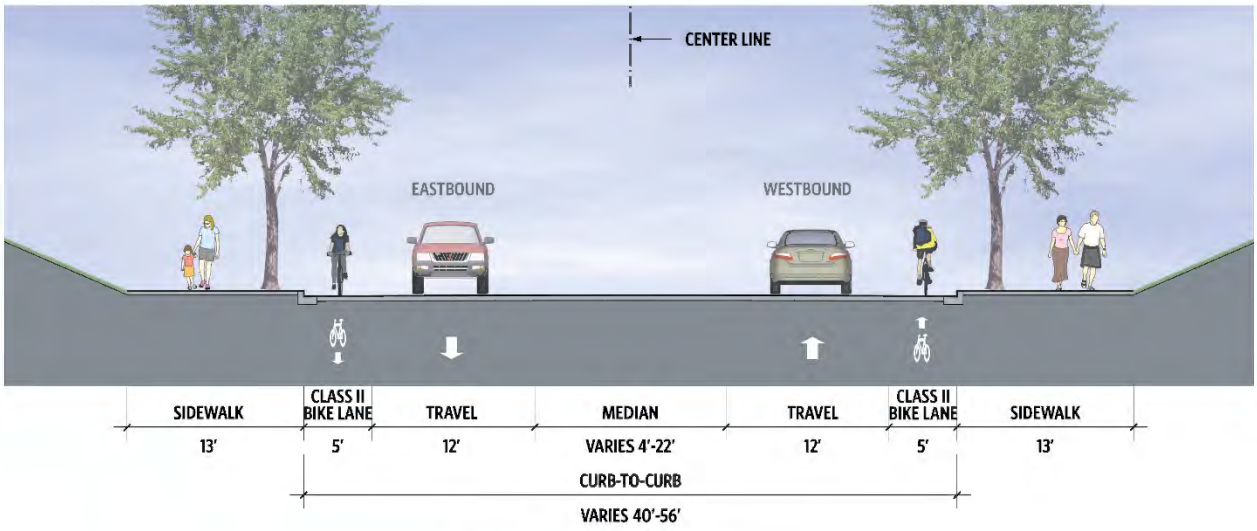
To achieve minimum vertical clearance requirements for the viaduct structures over Center Street (16.5 feet), a portion of Center Street between US-101 and Ducommun Street would need to be lowered. This would also trigger the need to lower Commercial Street at its existing westerly approach to Center Street. The segment of Commercial Street east of Center Street would be vacated, as the properties it currently serves would be acquired. The easterly curb and sidewalk along Center Street would be extended through the existing intersection to facilitate this street closure. The portion of Commercial Street east of Center Street currently provides access to an existing Metro Division 20 access road that would be relocated as part of the project.

Commercial Street Realignment

Commercial Street would be realigned to the north, away from the run-through track embankment south of LAUS. Columns supporting the US-101 viaduct would be located within the median and sidewalks of the realigned portion of Commercial Street at the location of the crossing. The realigned portion of Commercial Street would accommodate 5-foot-wide Class II bicycle lanes and 13-foot-wide sidewalks and intersect with Center Street just south of US-101.

A cross-section of the realigned portion of Commercial Street with new Class II bicycle lane is depicted on Figure 2-16.

Figure 2-16. Commercial Street Cross-Section (Center Street to US-101 Looking West)



Vignes Street Closure

The close spacing of the columns along the realigned Commercial Street south of US-101 would preclude the ability to restore the Vignes Street intersection with Commercial Street. As such, Vignes Street between Commercial Street and Ducommun Street would be permanently closed to vehicular traffic but may be preserved for pedestrian and bicycle access between Ducommun Street and the new Commercial Street.

Center Street (between US-101 and Ducommun Street)

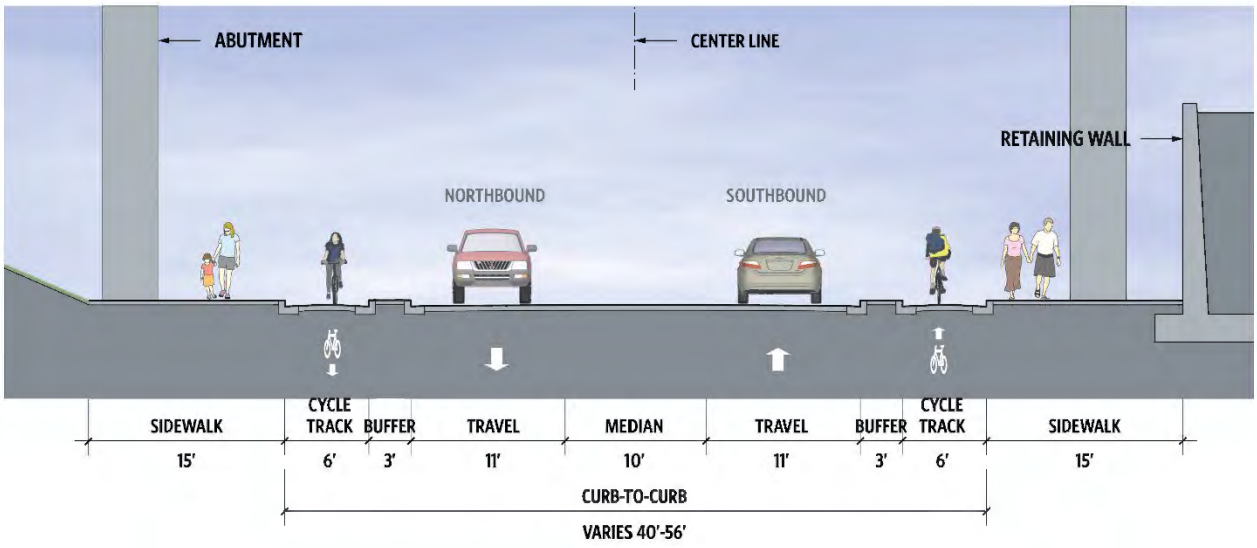
Center Street would be modified both horizontally and vertically to accommodate the crossing of the run-through track structures. As noted, Center Street must be lowered by up to 10 feet in the interim condition to accommodate the regional/intercity rail crossing over Center Street, in addition to a future crossing for the planned HSR system over Center Street. Additionally, the horizontal alignment of the roadway between US-101 and Ducommun Street would be modified to accommodate the bents and abutments supporting the two structures.

As part of the proposed project, roadway improvements on Center Street from Ducommun Street to US-101 would be constructed consistent with the *Connect US Action Plan* and include the following elements:

- Six-foot-wide cycle tracks with 3-foot buffers in both directions
- Fifteen-foot sidewalks with street trees and landscaping to enhance pedestrian accessibility

A cross-section of the affected portion of Center Street is depicted on Figure 2-17.

Figure 2-17. Center Street Cross-Section (Commercial Street to Ducommun Street Looking South)



Vignes Street

As part of the reconstruction of the Vignes Street Bridge, the existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's *Mobility Plan 2035*. The Vignes Street bridge structure would be constructed with sufficient width to accommodate the following per the City's *Mobility Plan 2035*:

- ROW width – 100 feet
- Roadway width – 70 feet

Cesar Chavez Avenue

The Cesar Chavez Avenue Bridge would be replaced as part of the throat reconstruction in Phase A. The existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's *Mobility Plan 2035* and the City's vision for future comprehensive treatments. The Cesar Chavez Avenue Bridge structure would be constructed with sufficient width to accommodate the following per the City's *Mobility Plan 2035* and DTLA Community Plan updates currently in process:

- ROW width – 100 feet
- Roadway width – 70 feet

Main Street

The proposed project includes safety improvements at the Main Street at-grade public crossing to facilitate future implementation of a quiet zone by the City of Los Angeles. The implementation of a quiet zone is subject to review and approval by CPUC.

North of CP Chavez, the proposed project would include the following safety improvements:

- An 8-foot-wide median on Main Street extending up to 100 feet on either side of the tracks
- Restriping to accommodate the median
- New signals with advance flashing beacons
- Wire mesh fencing along the rail ROW
- Replacement of the existing single-gate system with pedestrian and vehicular gate systems
- Pedestrian crossing arms and swing gates
- Modification to the west bridge wing walls to accommodate pedestrian access

ADA-compliant improvements would include bulb-outs with curb ramps and a striped crosswalk at a driveway on the north side of Main Street, as well as an approximately 25-foot sidewalk with curb and gutter east of the driveway.

2.9.7 Above-Grade Passenger Concourse with New Expanded Passageway

A new above-grade passenger concourse with new expanded passageway would provide safe and accessible passage through LAUS with modern passenger accommodations. The new passenger concourse would be designed to enhance safety at LAUS and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. Passenger circulation and accessibility would be improved with new VCEs (stairs, escalators, and elevators) that provide connectivity from the new expanded passageway that is at-grade and below the rail yard, to the passenger platforms, and the elevated portion of the above-grade passenger concourse. The VCEs in the new passenger concourse would be constructed in the full build-out condition and modified upon implementation of the planned HSR system at LAUS, as summarized below:

- In the full build-out condition, new VCEs would be constructed to improve passenger circulation. Existing passenger connections from the east and west ends of LAUS (along with the Gold Line and Red/Purple Line subway station access points) would be modified to accommodate the new expanded passageway, including associated VCEs.

- In the full build-out with HSR condition, up to two platforms would be elevated to meet CHSRA's level-boarding requirements. Upon conversion of the platforms to accommodate the planned HSR system, associated VCEs serving HSR platforms would also require modification to facilitate passenger access to elevated platforms.

The new passenger concourse would include up to 600,000 square feet of space to meet the demands of a modern multimodal transit station and architectural elements and design features that balance the historic character of LAUS with a new modern design. Sustainable features would be incorporated into the design of the concourse in accordance with current building codes, industry standards, and design criteria specific to various stakeholders.

The new passenger concourse would be designed with the appropriate size and relative arrangement of waiting areas, wayfinding and signage, amenities, circulation spaces and other facilities within LAUS to meet the following goals:

- Sufficient space to accommodate current and future uses at LAUS
- Safe, effective, and convenient access to rail, bus, and other transit services
- Safe, effective, and convenient operation and management of LAUS
- Clear circulation routes with minimum travel distances
- Circulation spaces free from unnecessary obstructions
- Protection from weather conditions for passengers during their movements within the new passenger concourse and on the elevated platforms

Primary elements of the above-grade passenger concourse with new expanded passageway include:

- New expanded passageway below the rail yard
- Passenger circulation and waiting areas above the rail yard
- Weather protection
- Ancillary support functions and back-of-house uses (staff support spaces and administrative areas)
- VCEs (stairs, escalators, and elevators)
- Ticketing and baggage handling areas
- Transit-serving retail uses (up to 160,000 square feet)
- Office/commercial uses (up to 30,400 square feet)
- Open spaces and terraces
- Signage/wayfinding
- Restrooms

- Utility rooms
- Security

The elevated portion of the above-grade passenger concourse would be constructed above the rail yard, approximately 90 feet above the existing grade. The elevated portion of the above-grade passenger concourse would primarily accommodate the essential transit functions (e.g., circulation and waiting areas). The existing east to west at-grade pedestrian passageway below the rail yard would be expanded to a width of 120 feet and a ceiling clearance of 10 feet to provide additional passenger travel-path convenience and options. The new expanded passageway reduces passenger travel time during the AM and PM peak and off-peak operating periods as compared with the existing condition. New plazas east and west of the elevated rail yard would provide retail and open space opportunities. A canopy up to 70 feet in height would be constructed over the West Plaza, and individual platform canopies up to 25 feet in height would also be constructed to provide shade and weather protection to patrons. Multiple egress routes with points of safety in the East Plaza, West Plaza, and other public areas are integrated into the design.

Figure 2-18 depicts a preliminary cross-section of the above-grade passenger concourse with new expanded passageway. Figure 2-19 through Figure 2-26 include architectural renderings of the exterior and interior elements of the elevated portion of the above-grade passenger concourse, new plazas east and west of the elevated rail yard, and the new expanded passageway.

Baggage Handling

The existing baggage handling building would be repurposed, and the exterior loading dock/parking areas would be abandoned due to the introduction of the West Plaza. -Baggage handling operations would be improved by providing more efficient and direct routes for drop-off and pick-up of luggage. Drop-off locations would be in the East and West Plazas adjacent to ticketing areas. Baggage pick-up would occur within the new expanded passageway where new carousels would be provided. A new baggage handling operations facility would be located adjacent to the new expanded passageway. Baggage would be transferred via a tunnel ramped connection for tugs serving Amtrak trains. If additional baggage operations are needed at other platforms, accommodation for future freight elevators could be allotted, but are not a part of the current concept.

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Figure 2-18. Above-Grade Passenger Concourse with New Expanded Passageway – Preliminary Cross-Section (Looking East)

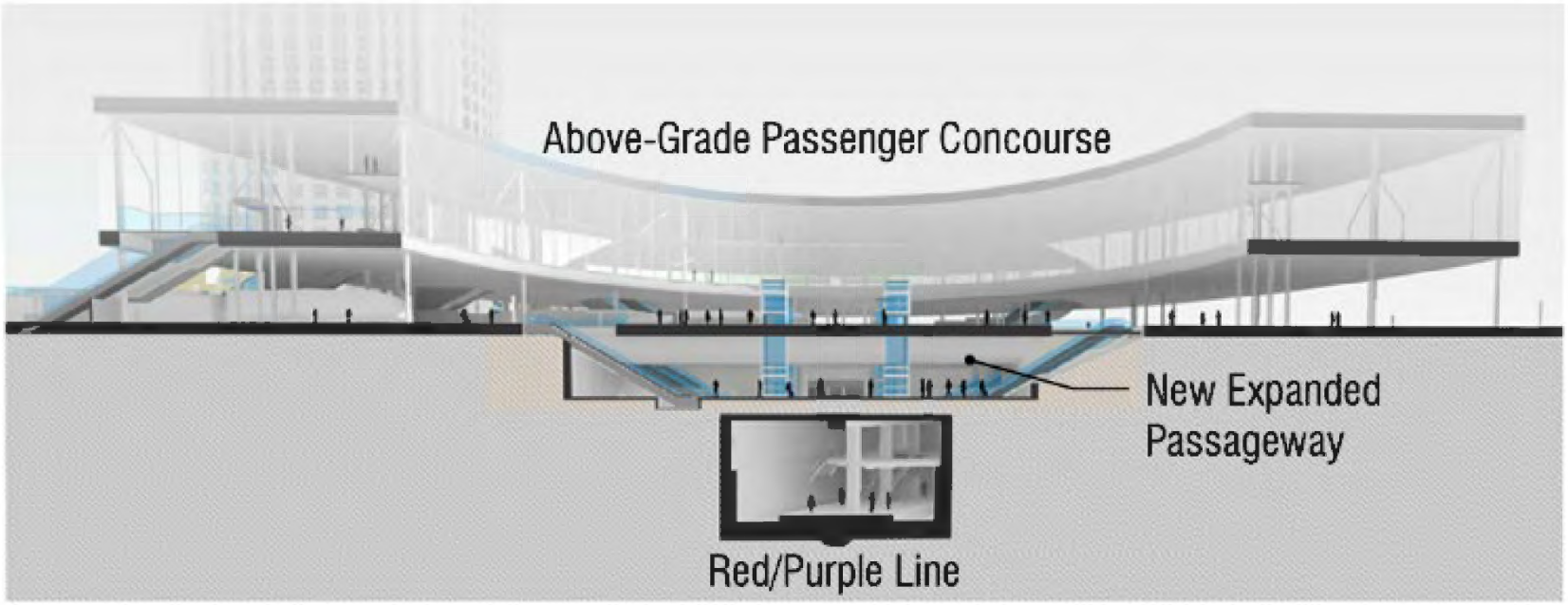

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Figure 2-19. Above-Grade Passenger Concourse
(Exterior View of West Plaza Looking North)

Figure 2-20. Above-Grade Passenger Concourse
(Exterior View of West Plaza Looking South)

Figure 2-21. Above-Grade Passenger Concourse
(Interior View of Vertical Circulation Elements Looking Northwest)

Figure 2-22. Above-Grade Passenger Concourse
(Interior View of Retail Space and Waiting Areas Looking East)

Figure 2-23. Above-Grade Passenger Concourse
(Exterior View of Platforms Looking North)

Figure 2-24. Above-Grade Passenger Concourse
(Exterior View of East Plaza Looking Southwest)

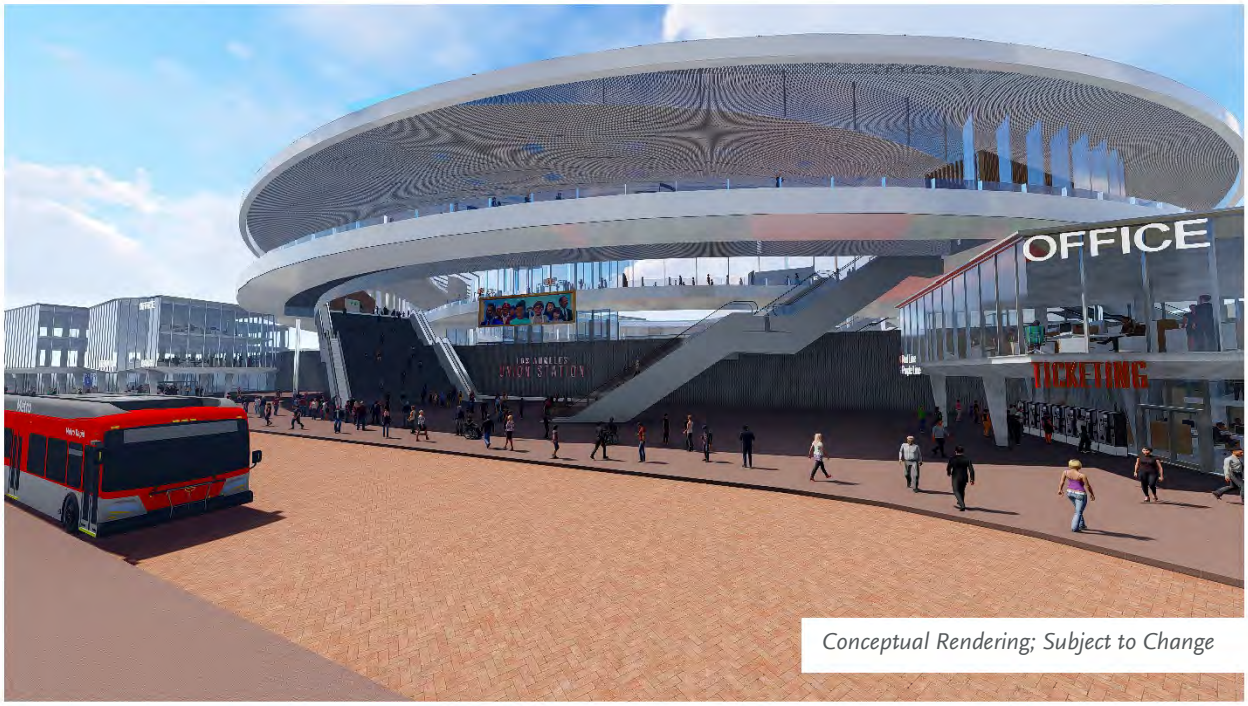


Figure 2-25. New Expanded Passageway (Interior View Looking North)

Figure 2-26. New Expanded Passageway (Interior View Looking South)

2.10 Project Implementation Approach

2.10.1 Project Phases A and B (Interim and Full Build-Out Condition)

Project Phases A and B are two construction sub-phases that correspond to the interim condition (Phase A: 2026) and the full build-out condition (Phase B: 2031) evaluated in this EIR. Detailed construction phasing scenarios were developed to support the traffic, air quality, and noise analyses (Appendix C of this EIR); however, this simplified project phasing approach summarizes how regional/intercity rail run-through service could be implemented as early as 2026 via early action/interim improvements and how the remaining project elements, including reconstruction of the throat with new lead tracks, an elevated rail yard with new platforms and canopies, and the new passenger concourse, could be implemented as early as 2031. A summary of the construction activities associated with Phases A and B are provided below and shown on Figure 2-27 and Figure 2-28, respectively.

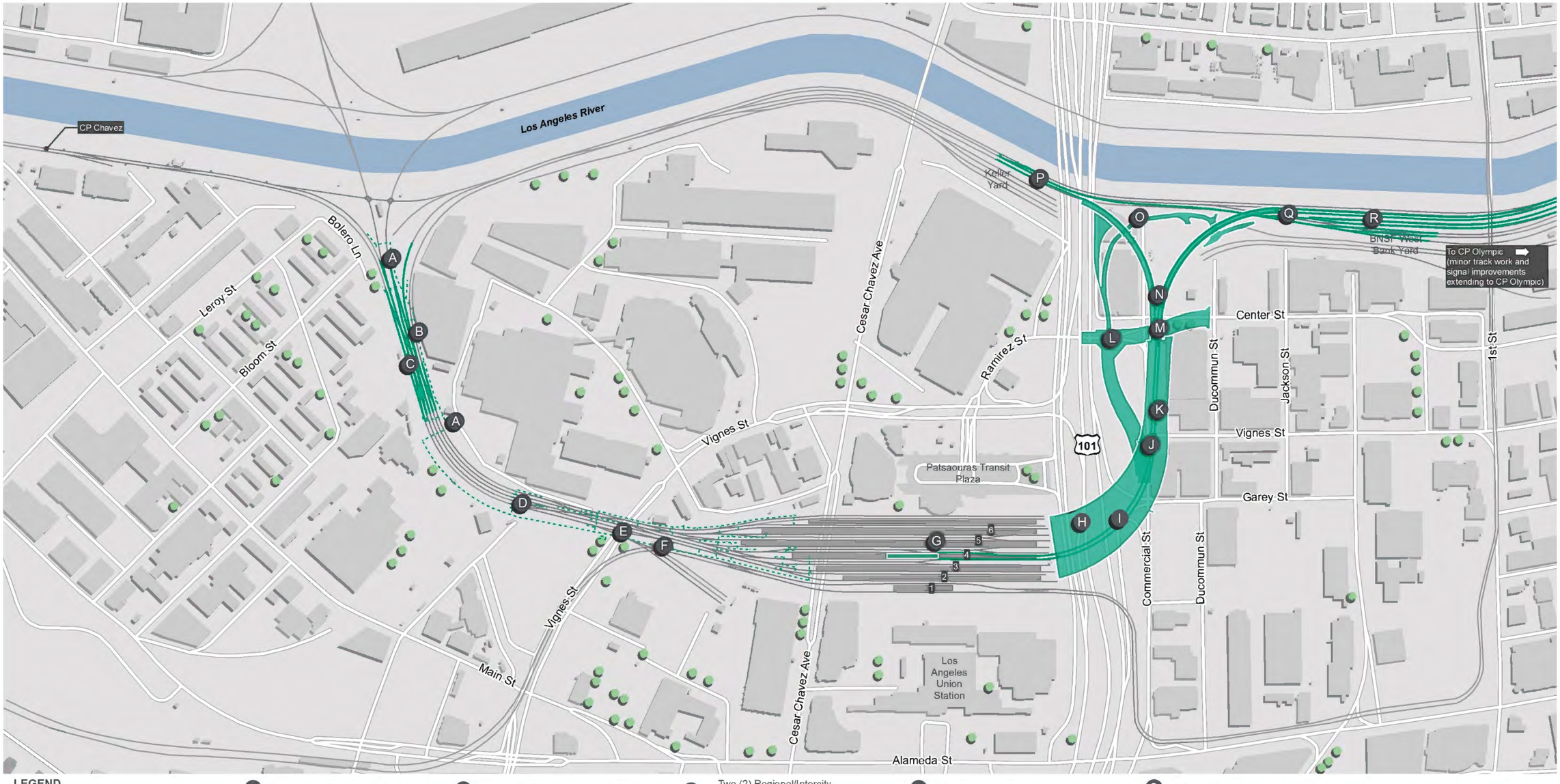
Phase A/Interim Condition:

- Property acquisitions in Segments 1 through 3
- Utility relocations in Segments 1 and 3
- Construct special track work and modify signal/communication infrastructure in Segment 1
- Construct local street modifications south of LAUS, including realignment of Commercial Street and lowering of Center Street in Segment 3
- Construct a run-through track ramp from the southern extent of Platform 4 in Segment 2
- Construct a common viaduct/deck over US-101 wide enough to accommodate up to 10 run-through tracks (including the northern loop track) south of LAUS in Segment 3
- Construct a common embankment from Vignes Street to Center Street in Segment 3
- Construct regional/intercity rail embankments and viaducts east of Center Street to facilitate main line connections for the loop track and regional/intercity rail run-through tracks in Segment 3. As discussed above, Metro and the project stakeholders are also considering design approaches that would accommodate future interoperability for multiple rail service providers from LAUS to the main line tracks on the west bank of the Los Angeles River.
- Construct two run-through tracks in Segment 3 that would connect to the existing Platform 4 in Segment 2

Phase B/Full Build-Out Condition:

- Construct new compatible lead tracks and reconstruct throat with a total of six lead tracks in Segment 1
- Construct a retaining wall/sound wall in Segment 1
- Construct new bridges over Vignes Street and Cesar Chavez Avenue in Segment 1
- Construct elevated rail yard and new passenger concourse with new expanded passageway and East/West Plazas in Segment 2
- Construct remaining run-through tracks for regional/intercity rail operations in Segment 3

Figure 2-27. Phase A/Interim Condition



LEGEND

- Structure Constructed in This Phase
- Track Constructed in This Phase
- Signal Improvements in This Phase
- Existing Platform
- Existing Tracks

- A Proposed CP Mission Signal House
- B Replace Turnouts and Track at CP Mission
- C Remove Existing CP Mission Signal House
- D Replace Existing Signal Backbones and Conduits
- E Proposed CP Terminal Signal House
- F Remove Existing CP Terminal Signal House
- G Platform 4 Shortening and Ramp
- H Common Viaduct/Deck over US-101
- I Two (2) Regional/Intercity Rail Run-Through Tracks
- J Shared Berm and Retaining Walls
- K New CP Ducommun
- L Commercial Street/Center Street Realignment
- M Center Street Bridge
- N Regional/Intercity Rail Run-Through Track Embankments/Viaducts
- O Division 20 Access Road
- P Loop Track
- Q New CP BNSF
- R BNSF West Bank Yard Modifications

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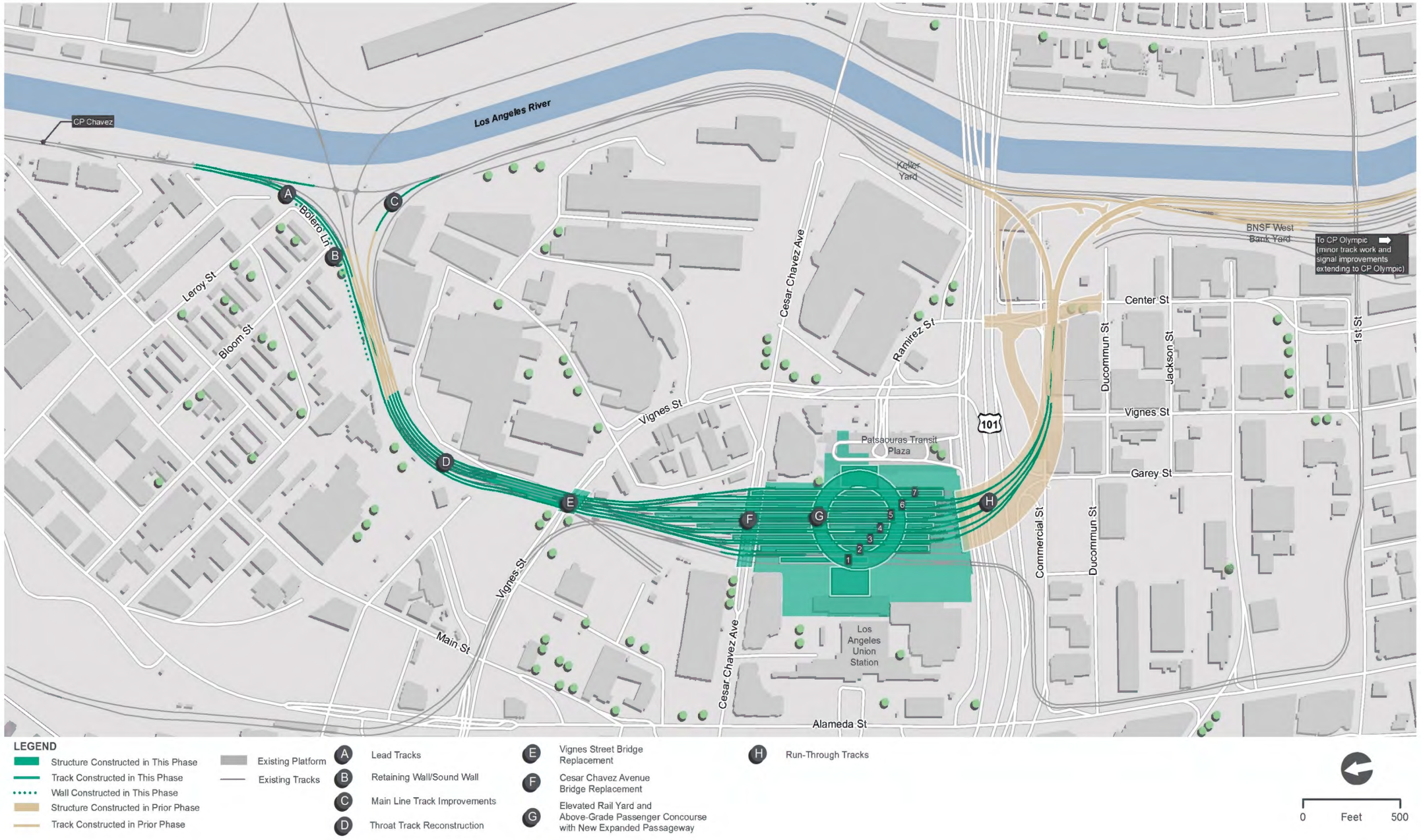
Figure 2-28. Phase B/Full Build-Out Condition



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2.10.2 Full Build-Out with High-Speed Rail Condition

As early as 2033, in the full build-out with HSR condition, the planned HSR system would be operational within the space allocated for HSR trains within the project footprint. A full description and evaluation of operational impacts associated with the planned HSR system will be included and analyzed in CHSRA's Burbank to Los Angeles and Los Angeles to Anaheim Project Sections environmental documents. The impacts associated with HSR infrastructure within the limits of the Link US project footprint are considered in this EIR.

2.11 Anticipated Agency Involvement

The following agencies are anticipated to be involved during project development and construction:

- FRA
- CHSRA
- SCRRA
- Caltrans
- FTA
- City of Los Angeles
- SHPO
- County of Los Angeles
- LOSSAN Rail Corridor Agency
- Amtrak
- Cal/EPA
- California Division of Occupational Safety and Health
- NAHC
- CPUC
- RWQCB, Region 4
- SCAG
- SCAQMD

2.11.1 Anticipated Permits, Discretionary Actions, and Agency Approvals

The following agencies, at minimum, are expected to use this EIR for project-related discretionary actions and permitting processes:

- Metro – Metro is responsible for adopting findings of fact, a MMRP, and a statement of overriding considerations, along with certifying the EIR. Metro, as the project owner, would also be responsible for administering construction of the project.
- Caltrans – Caltrans is responsible for issuing an encroachment permit for proposed infrastructure within Caltrans ROW.
- City of Los Angeles – The City of Los Angeles is responsible for processing any general plan amendment that may be required for project-related roadway modifications and/or street vacations to reclassify roadways as appropriate within the *Mobility Plan 2035* (General Plan Circulation Element). The City of Los Angeles may also require the contractor to seek approvals or exceptions to nighttime noise restrictions during construction. Approvals for civil/public works improvements and/or traffic signal timing modifications may also be required.
- CHSRA – CHSRA is responsible for implementation of the planned HSR system through the project limits. The Link US project EIR accommodates the planned HSR system, and proposed infrastructure is anticipated to be reflected as an existing condition in the environmental documents prepared for the HSR Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

Cooperative third-party agreements would be established between Metro and a variety of public and private entities to implement various project-related infrastructure improvements.

3.0 Environmental Analysis, Impacts, and Mitigation

For each environmental issue area, this section presents the existing environmental setting and conditions before project implementation, regulatory environment, methods and assumptions used in the impact analysis, thresholds for determining significance, impacts that would result from the project, mitigation measures that would eliminate or reduce significant impacts, and the level of significance of each impact area after implementation of mitigation.

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3.1 Introduction to Environmental Analysis

This section provides an overview of the environmental analysis and presents the format for the environmental analysis in each topical section.

3.1.1 Environmental Topics Included in the Analysis

Section 3.0, Environmental Analysis, Impacts, and Mitigation, provides an analysis of the potential impacts of the proposed project. Sections 3.2 through 3.13 discuss the environmental impacts that may result with approval and implementation of the proposed project, and where impacts are identified, proposes mitigation measures that, when implemented, would reduce significant impacts to a level less than significant, or otherwise to the extent feasible.

The following environmental issue areas are addressed in Sections 3.2 through 3.13:

- Land Use and Planning
- Transportation and Traffic
- Aesthetics
- Air Quality and Global Climate Change
- Noise and Vibration
- Biological Resources
- Hydrology and Water Quality
- Geology and Soils
- Hazards and Hazardous Materials
- Utilities/Service Systems and Energy Conservation
- Cultural Resources
- Public Services

Section 4.0, Cumulative Impacts, provides the analysis of cumulative impacts based on the project-level findings and determinations in Sections 3.2 through 3.13.

3.1.2 Format and Content Used in the Analysis

For each environmental issue area considered in Section 3.0, Environmental Analysis, Impacts, and Mitigation, the basic format for the environmental analysis is as follows:

- Introduction
- Regulatory Framework
- Methods for Evaluating Environmental Impacts
- Existing Conditions
- Environmental Impacts
- Mitigation Measures
- CEQA Significance Conclusions

The content for each of these sections is described below under the following headings.

Introduction

This section provides a brief summary of the environmental issue area to be analyzed, a summary of the potential impacts, and if any mitigation is proposed to reduce potential impacts associated with project implementation.

Regulatory Framework

This discussion describes the regulatory context of the environmental issue area being analyzed, including any applicable regulations, plans, policies, programs, and/or laws relevant to the project.

Methods for Evaluating Environmental Impacts

This discussion describes the methods, processes, procedures, and/or assumptions used to characterize existing environmental conditions and evaluate the potential impacts in the interim condition (as early as 2026), full build-out condition (as early as 2031), and the full build-out with HSR condition (as early as 2033). This includes the methods used in identifying and considering the range of direct, indirect, and cumulative impacts for each environmental issue area. Project impacts fall into the following three categories:

- *Direct Impacts* – These impacts would be caused by direct physical impacts associated with the project and would occur during all three conditions (interim, full build-out, and full build-out with HSR), as described in this EIR. The environmental analysis addresses potential direct impacts of temporary construction activities within the project footprint. Direct impacts include, but are not limited to, demolition of existing structures and buildings, impacts associated with site development and required on- and off-site infrastructure and roadway improvements, and construction impacts associated with the proposed infrastructure (including proposed

construction staging areas, fill activities, and construction traffic). An analysis of direct impacts resulting from long-term operations is also provided for each environmental issue area. The FRA/CHSRA EIS/EIRs (Burbank to Los Angeles and Los Angeles to Anaheim Project Sections) will address all HSR operational impacts resulting from the entirety of the planned HSR system.

- *Indirect Impacts* – These impacts are anticipated to occur later in time or are farther removed in distance from the project footprint but are reasonably foreseeable as a result of project implementation. Examples of indirect impacts include growth-inducing impacts and other secondary impacts related to changes in land use patterns, population density or growth rate, and related impacts on the physical environment. Indirect impacts may also result from potential mitigation measures when instances occur that are not specifically proposed as part of the project.
- *Cumulative Impacts* – A cumulative impact is an impact that would result from the incremental impact of the action when compounded with other past, present, and reasonably foreseeable future actions. Local and regional cumulative impacts associated with the project are discussed and analyzed in Section 4.0, Cumulative Impacts, of this EIR.

Existing Conditions

This discussion provides a description of the existing physical environment and baseline setting for each environmental issue area. For the purpose of this document and pursuant to the CEQA Guidelines (Section 15125(a)), the environmental setting is used to determine the impacts associated with the proposed project and is based on the environmental conditions that existed at the time the NOP was published (May 26, 2016).

In distinguishing between the geographic areas considered in the environmental analysis, it is important to note that the existing conditions for the majority of environmental issue areas within Section 3.0, Environmental Analysis, Impacts, and Mitigation, of this EIR are characterized in terms of the project study area. For some environmental issue areas, the study areas vary to properly analyze direct or indirect impacts of that specific resource.

Environmental Impacts

Changes that would result from the proposed project were evaluated relative to existing environmental conditions within the project study area, as defined in Section 2.0, Project Description.

Thresholds of Significance

This subsection lists the thresholds used to determine the significance of each project impact and is based on CEQA Guidelines, Appendix G. The thresholds are listed numerically and sequentially throughout each section. For example, thresholds in Section 3.2 are identified as 3.2-1, 3.2-2, and so on.

Impact Analysis

For each threshold considered, the discussion is subdivided, as appropriate, to differentiate between direct and indirect environmental impacts that could occur in the interim, full build-out, and full build-out with HSR conditions.

Subheadings and sub-numbering are used, where appropriate, for transitions between major topics and particular distinctions in impact determinations for sub-issues covered by the threshold. The environmental analysis places emphasis on distinguishing between the following:

- Temporary construction and long-term operational impacts
- Impacts during the interim condition, full build-out condition, and full build-out with HSR condition, relative to regional/intercity rail and HSR infrastructure
- Segment-specific impacts (e.g., environmental impacts occurring in Segment 1: Throat Segment but not in other segments)

This EIR uses the following terminology to denote the significance of environmental impacts of the project:

- *No impact* indicates that the construction and operation of the project would not have any direct or indirect impacts on the environment. It means no change from existing conditions. This impact level does not need mitigation.
- A *less than significant impact* is one that would not result in a substantial or potentially substantial adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.
- A *significant impact* is defined by CEQA Section 21068 as one that would cause "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." Levels of significance can vary by project, based on the change in the existing physical condition. Under CEQA, mitigation measures or alternatives to the project must be provided, where feasible, to reduce the magnitude of significant impacts.
- An *unavoidable significant impact* is one that would result in a substantial or potentially substantial impact on the environment, and that could not be reduced to a less than significant level even with any feasible mitigation. Under CEQA, a project with significant and unavoidable impacts could proceed, but the lead agency would be required to prepare a "statement of overriding considerations" in accordance with CEQA Guidelines Section 15093, explaining why the lead agency would proceed with the project understanding the potential for significant impacts.

Mitigation Measures

This discussion identifies proposed mitigation measures to avoid, minimize, rectify, reduce, or compensate for project-related impacts in accordance with the CEQA Guidelines (Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]), where feasible.

CEQA Significance Conclusions

This section includes an explanation of how the applied mitigation measure(s), if required, reduces the impact. If the impact remains significant, additional discussion is provided to indicate why no mitigation is available or why the applied mitigation is not effective in reducing the significant impact to a level less than significant.

3.1.3 Documents Referenced in this EIR

This EIR includes consideration of the analysis and findings contained in previously prepared environmental documents and technical reports. Documents referenced in this EIR are directly related to the proposed project. Other sections in the EIR may also cite other environmental documents as needed that are relative to a particular environmental topic area. Documents referenced are identified below, along with a brief discussion as to how they relate to the project.

Run-Through Tracks Project EIS/EIR (Caltrans 2005):

- Provides supporting basis for the preferred s-curve configuration for run-through tracks south of LAUS
- Provides screening evaluation criteria for consideration during the alternatives analysis phase

Final Program EIR/EIS and Record of Decision for the Proposed California High Speed Train System (Federal Railroad Administration 2005):

- Provides program-wide environmental clearance for the planned HSR system

2016 Regional Transportation Plan/Sustainable Communities Strategy Program EIR (Southern California Association of Governments 2016):

- Provides regional cumulative analysis for the 2040 (future condition) and analyzes regional/intercity rail and HSR service operations
- Provides program-level mitigation recommendations for consideration at the project level

3.1.4 CEQA Guidelines and Appendix G Environmental Updates

In 2013, the Governor's Office of Planning and Research initiated a comprehensive, multiyear effort aimed at updating the CEQA Guidelines, including the Appendix G environmental checklist. The proposed updates to the CEQA Guidelines were published in November of 2017 (Governor's Office of Planning and Research 2017). The Natural Resources Agency has finalized the updates to the CEQA

Guidelines and changes have been approved by the Office of Administrative Law and are now in effect as of January 2019. Preparation of this EIR has been underway for several years and, therefore, follows the previous CEQA Guidelines.

The approved updates to the CEQA Guidelines fall into two categories: (1) efficiency and organizational improvements, and (2) major substantive improvements. These updates incorporate California Supreme Court decisions and recently adopted legislation amending the CEQA Guidelines, including major reforms pertaining to the metrics used in evaluating transportation impacts and new environmental resource topics such as tribal cultural resources.

While the updated 2019 CEQA Guidelines Appendix G environmental checklist includes changes to 12 of the 18 existing environmental resource topics and 2 new resource topics, this EIR includes an analysis of all applicable thresholds. Table 3.1-1 and Table 3.1-2 summarize the updated 2019 CEQA Guidelines Appendix G environmental issue areas and where the analysis is provided in this EIR.

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
New Topic: Energy				
New	**Threshold A:** Would the project result in in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	**Section 3.11: Utilities/System Services and Energy Consumption** **Threshold 3.11-J:** Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
New	**Threshold B:** Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?		*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
New Topic: Wildfire				
New	**Threshold A:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project impair an adopted emergency response plan or emergency evacuation plan?	**Section 3.10: Hazards and Hazardous Materials** **Threshold 3.10-H:** Threshold identified as requiring no further analysis. The project is located in an urban area and wildfire risk is	No further analysis required	No further analysis required

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
New	**Threshold B:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?		No further analysis required	No further analysis required
New	**Threshold C:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?		No further analysis required	No further analysis required
New	**Threshold D:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?		No further analysis required	No further analysis required

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Section 3.3, Transportation and Traffic				
Combined 3.3-A and 3.3-F	**Threshold A:** Would the project conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	**Section 3.3: Transportation and Traffic** **Threshold 3.3-A:** Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit **Threshold 3.3-F:** Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	**Threshold 3.3-A:** *Construction* Less than Significant *Operations* Significant and Unavoidable *Indirect* No Impact **Threshold 3.3-F:** *Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged
New	**Threshold B:** Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	**Section 3.3: Transportation and Traffic** **Methodology (SB 743 – VMT):** The proposed project predominantly involves rail and passenger capacity improvements that would enhance regional accessibility to and through LAUS. The proposed project would increase transit ridership and reduce regional VMT; therefore, the proposed project would achieve	—	Consistent

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
		the goals of SB 743.		
Minor Edit	**Threshold C:** Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	**Section 3.3: Transportation and Traffic** **Threshold 3.3-D:** Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged
Section 3.4, Aesthetics				
Edited	**Threshold C:** Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point)? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	**Section 3.4: Aesthetics** **Threshold 3.4-C:** Substantially degrade the existing visual character or quality of the site or its surroundings	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Section 3.5, Air Quality and Global Climate Change				
Minor Edit	**Threshold B:** Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	**Section 3.5: Air Quality and Global Climate Change** **Threshold 3.5-C:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors)	*Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Beneficial Impact	Remains Unchanged
Edited	**Threshold D:** Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	**Section 3.5: Air Quality and Global Climate Change** **Threshold 3.5-E:** Create objectionable odors affecting a substantial number of people	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged
Section 3.6, Noise and Vibration				
Combined 3.6A, 3.6-C, and 3.6-D	**Threshold A:** Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**Section 3.6: Noise and Vibration** **Threshold 3.6-A:** A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project **Threshold 3.6-C:** Exposure of persons to or generation of noise levels in excess of standards established in the local general plan	**Threshold 3.6-A** *Operations* Less than Significant *Indirect* Less than Significant **Threshold 3.6-C** *Operations*	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
		or noise ordinance or applicable standards of other agencies **Threshold 3.6-D:** A substantial temporary or periodic increase in ambient noise levels existing without the project	Less than Significant *Indirect* Less than Significant **Threshold 3.6-D** *Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Less than Significant	

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Minor Edits	**Threshold B:** Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	**Section 3.6: Noise and Vibration** **Threshold 3.6-B:** Exposure of persons to, or generation of, excessive groundborne vibration or ground borne noise levels	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
Combined 3.6-E and 3.6-F	**Threshold C:** For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	**Section 3.6: Noise and Vibration** **Threshold 3.6-E:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport. **Threshold 3.6-F:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport.	No further analysis required	No further analysis required
Section 3.7, Biological Resources				
Edited	**Threshold C:** Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	**Section 3.7: Biological Resources** **Threshold 3.7-C:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	No further analysis required	No further analysis required

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Section 3.8, Hydrology and Water Quality				
Combined 3.8-E and 3.8-G	**Threshold A:** Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-E:** Violate any water quality standards or waste discharge requirements **Threshold 3.8-G:** Otherwise substantially degrade water quality	**Threshold 3.8-E and 3.8-G:** *Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
Edited	**Threshold B:** Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-A:** Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged
Edited	**Threshold C (i):** Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-F:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or	*Construction* Less than Significant *Operations* Less than Significant	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
	• Result in substantial erosion or siltation on or off site?	off site	*Indirect* No Impact	
Edited	**Threshold C (ii):** Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: • Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-B:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site	*Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact	Remains unchanged
Edited	**Threshold C (iv):** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: • Impede or redirect flood flows?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-I:** Place within a 100-year flood hazard area structure, which would impede or redirect flood flows	No further analysis required	No further analysis required
Edited	**Threshold D:** Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-J:** Inundation by seiche, tsunami, or mudflow	No further analysis required	No further analysis required
New	**Threshold E:** Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-A**: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a	*Construction* Less than Significant *Operations* Less than Significant	No further analysis required

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
		lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted) **Threshold 3.8-C:** Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff Threshold 3.8-E: Violate any water quality standards or waste discharge requirements	*Indirect* No Impact	
Section 3.9, Geology and Soils				
Minor Edit	**Threshold A:** Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Strong seismic ground shaking; and, ii. Seismic-related ground failure, including liquefaction.	**Section 3.9: Geology and Soils** **Threshold A:** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Strong seismic ground shaking; and, ii. Seismic-related ground failure, including liquefaction.	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Minor Edit	**Threshold D:** Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?	**Section 3.9: Geology and Soils** **Threshold 3.9-D:** Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risk to life or property	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
Relocated	**Threshold F:** Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**Section 3.12: Cultural Resources** **Threshold 3.12-C:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	*Construction* Less than Significant *Operations* No Impact *Indirect* Less than Significant	Remains unchanged
Section 3.10, Hazards and Hazardous Materials				
Combined 3.10-E and 3.10-F	**Threshold E:** For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive for people residing or working in the project area?	**Section 3.10: Hazards and Hazardous Materials** **Threshold 3.10-E:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport. **Threshold 3.10-F:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport.	*No further analysis required*	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Edited	**Threshold G:** Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	**Section 3.10: Hazards and Hazardous Materials** **Threshold 3.10-H:** Threshold identified as requiring no further analysis. The project is located in an urban area and wildfire risk is low. The project study area is not located within a state responsibility very high fire hazard severity zone (CAL Fire 2007).	*No further analysis required*	Remains unchanged
Section 3.11, Utilities/Service Systems and Energy Conservation				
Combined 3.11-B and 3.11-C	**Threshold A:** Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage electric power, natural gas, or telecommunications facilities the construction of which could cause significant environmental effects?	**Section 3.11: Utilities/System Services and Energy Consumption** **Threshold 3.11-B:** Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects **Threshold 3.11-C:** Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	**Threshold 3.11-B and C** *Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Edited	**Threshold B:** Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	**Section 3.11: Utilities/System Services and Energy Consumption** **Threshold 3.11-D:** Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
Edited	**Threshold D:** Would the project generate solid waste in excess or state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	**Section 3.11: Utilities/System Services and Energy Consumption** **Threshold 3.11-F:** Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged
Minor Edit	**Threshold E:** Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	**Section 3.11: Utilities/System Services and Energy Consumption** **Threshold 3.11-G:** Comply with federal, state, and local statutes and regulations related to solid waste	*Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant	Remains unchanged

Table 3.1-1. Updated CEQA Guidelines Environmental Checklist – New or Modified

2019 Modification	Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR (After Mitigation)	Significance Determination with Updated Guidelines
Section 3.12, Cultural Resources				
Minor Edit	**Threshold A:** Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	**Section 3.12: Cultural Resources** **Threshold 3.12-A:** Cause a substantial adverse change in the significance of a historical resource as defined in §150464.5	*Construction* Significant and Unavoidable *Operations* No Impact	Remains unchanged
Minor Edit	**Threshold C:** Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	**Section 3.12: Cultural Resources** **Threshold 3.12-D:** Disturb any human remains, including those interred outside of formal cemeteries	*Construction* Less than Significant *Operations* No Impact *Indirect* No Impact	Remains unchanged

Notes:
CEQA=California Environmental Quality Act; EIR=environmental impact report; LAUS=Los Angeles Union Station; Link US=Link Union Station; O_3=ozone; PRC=Public Resources Code; SB=Senate Bill; UBC=Uniform Building Code; VMT=vehicle miles traveled

Table 3.1-2. Updated CEQA Guidelines Environmental Checklist – Removed

Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR
3.2, Land Use and Planning		
Threshold 3.2-C: Would the project conflict with any applicable habitat conservation plan or natural community conservation plan	**Section 3.2: Land Use and Planning** **Threshold 3.2-C:** Threshold identified as requiring no further analysis. There are no habitat conservation plans or natural community conservation plans that are applicable within the project study area.	No further analysis required
Section 3.3, Transportation and Traffic		
Threshold 3.3-B: Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	**Section 3.3: Transportation and Traffic** **Threshold 3.3-B:** Threshold identified as requiring no further analysis. The project-related traffic would not exceed the arterial intersection analysis threshold or the freeway analysis threshold at the nearest monitoring locations or at any location.	No further analysis required
Threshold 3.3-C: Would the project result in a change in air traffic patterns, including either an increase in traffic levels or change in location that results in substantial safety risks?	**Section 3.3: Transportation and Traffic** **Threshold 3.3-C:** Threshold identified as requiring no further analysis. The project would not include the construction of any structural facilities that would create a runway hazard. Likewise, the project does not include expansion of airport facilities or increase air traffic.	No further analysis required

Table 3.1-2. Updated CEQA Guidelines Environmental Checklist – Removed

Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR
Section 3.5, Air Quality		
Threshold 3.5-B: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	**Section 3.5: Air Quality and Global Climate Change** **Threshold 3.5-B:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation	**Threshold 3.5-B** *Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Beneficial Impact
Section 3.6, Noise and Vibration		
Threshold 3.6-C: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	**Section 3.6: Noise and Vibration** Combined with Threshold 3.6-A	**Threshold 3.6-C** *Operations* Less than Significant *Indirect* Less than Significant
Threshold 3.6-D: A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	**Section 3.6: Noise and Vibration** Combined with Threshold 3.6-A	**Threshold 3.6-D** *Construction* Significant and Unavoidable *Operations* Less than Significant *Indirect* Less than Significant

Table 3.1-2. Updated CEQA Guidelines Environmental Checklist – Removed

Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR
Threshold 3.6-F: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	**Section 3.6: Noise and Vibration** **Threshold 3.6-E:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport.	No further analysis required
Section 3.8 Hydrology and Water Quality		
Threshold 3.8-H: Would the project place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary map or FIRM or other flood hazard delineation map?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-H:** Threshold identified as requiring no further analysis. The proposed project would not involve construction of residential housing.	No further analysis required
Threshold 3.8-I: Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?	**Section 3.8: Hydrology and Water Quality** **Threshold 3.8-H:** Threshold identified as requiring no further analysis. The proposed project is not within a 100-year flood hazard area.	No further analysis required
Section 3.10, Hazards and Hazardous Materials		
Threshold 3.10-F: For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	**Section 3.10: Hazards and Hazardous Materials** **Threshold 3.10-F:** Threshold identified as requiring no further analysis. The project study area is not located within 2 miles of a public airport or public use airport.	No further analysis required

Table 3.1-2. Updated CEQA Guidelines Environmental Checklist – Removed

Potential Environmental Impact	Link US EIR Location	Significance Determination in Link US EIR
Section 3.11, Utilities/Service Systems and Energy Conservation		
Threshold 3.11-A: Would the project exceed wastewater treatment requirements of the applicable RWCQB?	**Threshold 3.11-A:** Exceed wastewater treatment requirements of the applicable RWCQB	**Threshold 3.11-A** *Construction* Less than Significant *Operations* Less than Significant *Indirect* No Impact
Threshold 3.11-C: Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	**Section 3.11: Utilities/System Services and Energy Conservation** Combined with Threshold 3.11-A	**Threshold 3.11-C** *Construction* Less than Significant *Operations* Less than Significant *Indirect* Less than Significant

Notes:
CEQA=California Environmental Quality Act; EIR=environmental impact report; FIRM=flood insurance rate map; Link US=Link Union Station; RWQCB=Regional Water Quality Control Board

3.2 Land Use and Planning

3.2.1 Introduction

This section provides an evaluation of potential impacts relative to land use and planning. Information contained in this section is summarized from the *Link US Community Impact Assessment* (Appendix D of this EIR).

3.2.2 Regulatory Framework

Table 3.2-1 identifies and summarizes applicable state and local laws, regulations, and plans relative to land use and planning.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
State	
State Planning and Zoning Laws (California Government Code Section 65300)	California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan and any applicable specific plans. A specific plan is another planning device that governs a smaller land area than the general plan but must be consistent with the overarching general plan. Specifically, it implements the general plan in a particular geographic area. (California Government Code, Section 65450.)
Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities Act, SB 375)	SB 375 of 2008 provides for greater coordination of state housing and environmental and transportation laws, and requires regional MPOs to develop an SCS as part of the RTP. SCAG is the MPO for the project study area.
California Public Utilities Code – Public Utilities Code § 30631	Metro is authorized by the State of California to develop its property under its enabling legislation (AB 152) and Public Utilities Code 30631a.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
Regional	
SCAG 2008 RCP	The SCAG 2008 RCP is an advisory document to local agencies for their voluntary use in preparing local plans and handling issues of regional significance. The RCP addresses important regional issues, such as housing, traffic/transportation, water, and air quality, and presents a vision of how the region can balance resource conservation, economic vitality, and quality of life.
SCAG 2016-2040 RTP/SCS	The RTP/SCS is a long-range regional transportation plan that provides a blueprint to coordinate the regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs and help the region achieve state greenhouse gas emission reduction goals. SCAG prepared a program environmental impact report for the 2016-2040 RTP/SCS. The project is listed in the RTP/SCS as Federal Transportation Improvement Program #LA0G1051.
Metro's 2006 Bicycle Transportation Strategic Plan	Metro's 2006 Bicycle Transportation Strategic Plan identifies strategies to help municipalities and agencies in the region plan for bicycling in their jurisdictions as a viable mode of transportation. The plan contains an inventory of "bike-transit" hubs in Los Angeles County and also identifies routes that may eventually provide continuity for bicyclists, while also outlining a strategy for prioritizing regional bikeway projects.
Local	
Metro's Connect US Action Plan	Metro's Connect US Action Plan includes a strategy for encouraging people to walk and bicycle to LAUS from surrounding historic and cultural neighborhoods, including El Pueblo, Chinatown, Cornfield Arroyo Seco, Boyle Heights, Arts District, Little Tokyo, and Civic Center.
Metro's Green Construction Policy	On August 4, 2011, Metro adopted the Green Construction Policy and committed to using greener, less polluting construction equipment and vehicles, as well as implementing best practices to reduce harmful diesel emissions on all Metro construction projects performed on Metro properties and ROW.
First Last Mile Strategic Plan	This plan identifies ways Metro and other agency partners can improve access and connections to public transit. This plan aims to expand the reach of transit through infrastructure improvements to areas where first/last mile barriers exist with the ultimate goal of increasing ridership. Metro's first/last mile strategy was developed in conformance with the policies outlined in the Countywide Sustainability Policy & Implementation Plan.
Metro's Active Transportation Strategic Plan	The Active Transportation Strategic Plan was adopted by the Metro Board of Directors on May 26, 2016. The Active Transportation Strategic Plan is Metro's county-wide effort to identify strategies to increase walking, bicycling and transit use in Los Angeles County, focused on improving first and last mile access to transit with a regional network of active transportation facilities, including shared-use paths and on-street bikeways with funding strategies to implement improvements.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
LAUS Sustainable Neighborhood Assessment	The LAUS Sustainable Neighborhood Assessment was developed by a non-profit organization, Global Green USA, with a grant from the U.S. EPA's Office of Sustainable Communities. Global Green USA used the neighborhood assessment as a means to evaluate existing conditions and provide recommendations for LAUS and the surrounding area that would increase the neighborhood's overall level of sustainability. The LAUS Sustainable Neighborhood Assessment was referenced in a scoping comment by U.S. EPA and includes four recommendations with associated actions. In particular, Recommendations 2 and 3 provide for enhanced neighborhood connectivity within the area surrounding LAUS and connections to the Los Angeles River.
City of Los Angeles TDM Program	The City's TDM program is designed to decrease dependency on single occupancy vehicles. LADOT strongly encourages the development of a comprehensive TDM program to eliminate as many new project trips as possible. Consistent with LADOT Traffic Impact Study Guidelines (LADOT 2016), mitigation programs for impacts that are expected to be significant under CEQA should be developed to primarily aim to minimize the demand for trips by single-occupant vehicles by encouraging, promoting, and supporting the use of other sustainable modes of travel like public transit, walking, and bicycling. LADOT identifies mitigation categories, that should be considered when evaluating and proposing transportation mitigation measures.
LADOT Bicycle Program	LADOT established the Bicycle Program within the Department's Active Transportation Division. The Bicycle Program's goal is to work together to implement bikeways and programs that support bicycling in the City.
Mobility Plan 2035	The Mobility Plan 2035 is the City of Los Angeles General Plan Transportation Element. The plan incorporates "Complete Streets" principles and lays the policy foundation for future City of Los Angeles roadways. The "Complete Streets" concept takes into account the many community needs that streets fulfill. The plan identifies goals, objectives, policies, and action items that serve as guiding tools for making sound transportation decisions.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
City of Los Angeles 2010 Bicycle Plan	The purpose of the Bicycle Plan is to increase, improve, and enhance bicycling in the City, making it a safe, healthy, and enjoyable means of transportation and recreation. The Bicycle Plan, a part of the Mobility Element, establishes policies and programs to increase the number and types of bicyclists in the City and make every street in the City a safe place to ride a bicycle. The Bicycle Plan includes a continuous bicycle path along the south and west sides of the Los Angeles River and identifies connections to the river to enhance access to existing and future segments of the river path for non-motorized transportation and recreation. The following policies and programs are contained within the Bicycle Plan: • Policy 1.1.3, Program B Downtown Bikeways – Plan and implement series of interconnected bikeways within the downtown area to link bicyclists to employment, retail, residential, civic, cultural, and recreational destinations. Downtown bikeways should be integrated with the existing Downtown Street Standards • Policy 1.3.1, Program A Bikeways along Exclusive Transit Rights-of-Way - Continue to include Class I bicycle paths adjacent to new exclusive surface transit rights of-way. Identify all major transit projects under development and work with Metro and other appropriate agencies to incorporate bikeways in new transit projects. • Policy 2.3.1, Program B Bridge Design Program - Consider bicycle facilities when designing new or retrofitting bridges. Any modifications to an existing bridge that has been designated, or determined to be eligible, as a Historic Resource should avoid adversely impacting character-defining features. Particular attention should be made to bridge underpasses that cross existing or future bicycle paths to ensure that the paths are integrated into the design and construction of the facility. • Policy 3.1.3, Program C Standard Mitigation Measure Revision - Revise the standard mitigation measures to include contributions to the Bicycle Plan Trust Fund and/or the installation of bicycle facility improvements and/or bicycle amenities such as parking, internal bikeway paths, etc. • Policy 3.1.3, Program D Traffic Study Guidelines Revision – Revise the City's Traffic Study Guidelines to prioritize the installation of bicycle facility improvements as a trip reduction measure.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
Los Angeles River Revitalization Master Plan	The 2007 Los Angeles River Revitalization Master Plan includes plans to construct a continuous river greenway providing a pedestrian and bicycle path along the Los Angeles River. Some segments of the path have been constructed, with future plans to extend the trail along the entire 32-mile corridor. Recommendation 4.12 of the Los Angeles River Revitalization Master Plan calls for the continued "development of non-motorized transportation and recreation elements including bicycle and pedestrian paths and multi-use trails in the river and tributary rights-of-way." Recommendation 5.5 calls for the safe non-motorized routes between the river and cultural institutions, parks, civic institutions, transit-oriented development, schools, transit hubs, and commercial and employment centers within 1 mile of the river. The plan also identifies Commercial Street as a future primary local Green Street between Alameda and Center Streets. A neighborhood gateway portal is also identified for the area east of Center Street. The Green Street standards identified in the plan emphasize multimodal transportation infrastructure that accommodates the needs of pedestrians, bicyclists, other non-motorized transportation users.
Los Angeles River Design Guidebook	The Los Angeles River Design Guidebook was developed pursuant to the Los Angeles River Revitalization Master Plan and provides design recommendations for improvements to the Los Angeles River communities. Recommendations include providing safe pedestrian and bicyclist access to the Los Angeles River, providing adequate sidewalks and buffers between pedestrians and vehicles/transit, and prioritizing pedestrian safety above other modes.
City of Los Angeles Citywide General Plan Framework Element	The City of Los Angeles Citywide General Plan Framework Element is an element in the City's General Plan that establishes the broad overall policy and direction for the entire General Plan. The Framework Element provides a citywide context and a comprehensive long-range strategy to guide the comprehensive update of the General Plan's other elements.
City of Los Angeles CCNCP	The City's 35 community plans and two special use districts collectively comprise the Land Use Element of the General Plan, which is currently being updated in 2018, with adoption anticipated in 2020. The majority of the project study area overlaps with the plan area for the CCNCP, which encompasses approximately 2,005 acres in the northern portion of Downtown Los Angeles. The plan area for the CCNCP extends from Alameda Street on the west to the Los Angeles River on the east, and from Broadway and Stadium Way on the north to the City of Vernon boundary on the south. The plan area includes large areas of industrial and commercial uses, with scattered residential land uses.
ADSP	The northwestern portion of the project study area, which includes LAUS, overlaps with the plan area for the ADSP. The 70-acre plan area, which includes the 52-acre LAUS property and the 18-acre U.S. Postal Terminal Annex property, is bounded by Alameda Street, Main Street, Vignes Street, US-101, the Santa Ana Freeway (I-5), the El Monte Busway, and the passenger and platform areas in LAUS.
CASSP	The northern portion of the project study area overlaps with the plan area for the CASSP. The plan area is located adjacent to the Chinatown and Lincoln Heights communities.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
City of Los Angeles RIO District (Ordinance 183145)	LAUS is within a RIO District, which is a special use district that requires new projects to achieve points in three design categories: Watershed, Urban Design, and Mobility. The purpose of the establishing RIO Districts is to, in part, support the goals of the Los Angeles River Revitalization Master Plan; establish a positive interface between river adjacent property and river parks and/or greenways; promote pedestrian, bicycle and other multimodal connection between the river and its surrounding neighborhoods; and provide safe, convenient access to and circulation along the river. The RIO provides guidelines for new complete streets and includes a mobility strategy to ensure that the needs of pedestrians, bicyclists, transit riders, and vehicle drivers are considered when major projects or street improvements are proposed. The RIO is intended to enable the City to better coordinate land use development along the 32-mile corridor of the Los Angeles River within the City's boundaries.
Partnership for Sustainable Communities livability principles	The livability principles, developed by the U.S. EPA, U.S. Department of Housing and Urban Development, and U.S. Department of Transportation, aim to help improve access to affordable housing, create more transportation options, and lower transportation costs while protecting the environment in communities nationwide.
City of Los Angeles Commercial and Artcraft District	The northern portion of the project study area is located within the Commercial and Artcraft District. The Commercial and Artcraft District is intended to provide enclaves whereby the artisan segments of the population may live, and create and market their artifacts. Artcraft activities, combined with commercial and residential uses, are permitted in the Commercial and Artcraft District.

Notes:
AB=Assembly Bill; ADSP= Alameda District Specific Plan; CASSP= Cornfield/Arroyo Seco Specific Plan; CCNCP=Central City North Community Plan; LADOT= City of Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; Metro=Los Angeles County Metropolitan Transportation Authority; MPO=metropolitan planning organizations; SB=Senate Bill; RCP= Regional Comprehensive Plan; RIO= River Improvement Overlay; ROW=right-of-way; RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy; TDM= Transportation Demand Management, U.S.=United States; U.S. EPA=United States Environmental Protection Agency

3.2.3 Methods for Evaluating Environmental Impacts

Findings and conclusions contained in this analysis are based on the *Link US Community Impact Assessment* (Appendix D of this EIR). The City of Los Angles General Plan (General Plan) and applicable specific plans or other planning and engineering documents were utilized to identify information related to existing on-the-ground land uses and site conditions, existing land use designations and zoning classifications, and future land uses in the project study area reflected in the City's current community plans and DTLA 2040, the City's program to update the Central City and Central City North Community Plans (CCNCP), which are currently under preparation.

An evaluation was conducted in the context of whether the project meets the intent of applicable regional/intercity rail and HSR planning documents and other local transportation plans. Although Metro is authorized by the State of California to develop its property under its enabling legislation (Assembly Bill

[AB] 152) and Public Utilities Code 30631a, a consistency evaluation of the City's applicable planning documents was conducted to determine general project consistency with local plans and policies.

3.2.4 Existing Conditions

Existing Land Uses

LAUS is located in the northeastern corner of Downtown Los Angeles and is bounded by the El Monte Busway and US-101 to the south, Cesar Chavez Avenue to the north, Vignes Street to the east, and Alameda Street to the west. Existing land uses within the project study area consist of transportation infrastructure (LAUS, railroad tracks, US-101, and I-10), commercial and industrial buildings, residential apartment buildings (e.g., William Mead Homes, Mozaic Apartments, and One Santa Fe Apartments), and government buildings (e.g., Metro Headquarters, U.S. Post Office/Mail Processing Facility, and the Twin Towers Correctional Facility). Overall, the project study area is characterized by a dense downtown urban environment and consists of the following existing land uses within each of the three segments of the project study area:

- *Segment 1: Throat Segment* – The northern portion of the project study area includes the William Mead Homes complex adjacent to the railroad ROW and a mix of government and public facilities and industrial and manufacturing uses.
- *Segment 2: Concourse Segment* – The center portion of the project study area primarily consists of the LAUS campus and associated rail/transit facilities, Metro Headquarters, U.S. Post Office/Mail Processing Facility, and the Twin Towers Correctional Facility. The Mozaic Apartment Complex is also located adjacent to LAUS.
- *Segment 3: Run-Though Segment* – The southern portion of the project study area is mostly occupied by commercial and industrial buildings (warehouses and refrigerated storage facilities). This segment includes the Commercial Street/Ducommun Street corridor (Alameda to Center Streets), the BNSF West Bank Yard, Keller Yard, main line tracks that extend along the west bank of the Los Angeles River, and the One Santa Fe Apartments.

Downtown Communities

The project is located in the northeastern corner of Downtown Los Angeles, the central business district of the City, which also includes a diverse residential neighborhood of approximately 50,000 people. Downtown Los Angeles is composed of multiple neighborhood communities, commonly also referred to as districts (Figure 3.2-1), that are contained within larger community planning areas (Figure 3.2-2). As depicted on Figure 3.2-1, portions of the project study area are within the Northern Industrial, Arts, and Southern Industrial Districts. Portions of the El Pueblo and Chinatown Districts are adjacent to the project study area. A summary of these communities is provided below.

- *Northern Industrial District* – The northern portion of the project study area in Segment 1 is within the Northern Industrial District, also referred to as the Mission Junction neighborhood. Mission Junction is adjacent to and west of the Los Angeles River. The Northern Industrial District includes the William Mead Homes operated by the Housing Authority of the City of Los Angeles (HACLA). In Segment 2, the Mozaic Apartments and several government buildings, including the Twin Towers Correctional Facility operated by the Los Angeles County Sheriff's Department, are located within the Northern Industrial District.
- *Arts District* – The southern portion of the project study area in Segment 3 includes the Arts District, formerly an industrial area that was transformed into an artist community in the mid-1970s.
- *Southern Industrial District* – The southernmost portion of the project study area in Segment 3 is located within the Southern Industrial District. This area contains light industrial and warehouse uses.
- *El Pueblo District* – The project study area in Segment 2 is adjacent to the El Pueblo District. The El Pueblo District includes Olvera Street and the El Pueblo de Los Angeles Historical Monument. Olvera Street contains several of Los Angeles' oldest historic buildings along with dozens of craft shops, restaurants, and other businesses. El Pueblo de Los Angeles Historical Monument (also known as Los Angeles Plaza Historic District and formerly known as El Pueblo de Los Angeles State Historic Park) is a historic district occupying approximately 44 acres in the oldest section of Los Angeles.
- *Chinatown District* – The western portion of the project study area in Segment 1 is adjacent to the Chinatown District. This district was the commercial center for Chinese and other Asian businesses starting circa 1938 and is currently occupied by restaurants, shops, businesses, and residential neighborhoods. The Chinatown District also contains the area previously known as the Naud Junction, located in the northwestern portion of the project study area (at Main Street and Alameda Street) and occupied by commercial and industrial buildings.

Community Plans and Specific Plans

As depicted on Figure 3.2-2, portions of the project study area are within the CCNCP, the Alameda District Specific Plan (ADSP), and Cornfield/Arroyo Seco Specific Plan (CASSP). A brief discussion of the guiding principles of these plans is provided below:

- The CCNCP promotes the vision of preserving existing residential neighborhoods while providing a variety of compatible new housing, improving the function and economic vitality of commercial corridors, preserving and enhancing existing uses that provide the foundation for community identity, maximizing development opportunities for future transit systems while minimizing any adverse impacts, and fostering commercial and industrial development to provide needed jobs and improve economic and physical conditions.
- LAUS, a Metro-owned 47-acre parcel that includes a historic passenger terminal building, rail yards, and platforms, is located in the central portion of the project study area. LAUS is in the boundary

of the City's ADSP area, which encourages continued and expanded development of LAUS as a major transit hub for the region.

- The northernmost portion of the project study area (north of Alhambra Avenue) is located within the CASSP area, which has the purpose of converting the plan area into a compact, livable, walkable mixed-use, public transit-focused neighborhood. The William Mead Homes operated by HACLA is located within this portion of the project study area.

General Plan Land Use and Zoning Designations

Figure 3.2-3 shows the current land use designations in the project study area, per the City's General Plan Land Use Map. The majority of the General Plan land use designations within the project study area include Hybrid Industrial, Public Facilities, Regional Center Commercial, and Heavy Manufacturing, with pockets of Commercial Manufacturing and Regional Commercial land use designations.

Figure 3.2-4 shows the current zoning designations in the project study area. In Segment 1, north of LAUS and outside of the boundaries of the ADSP, properties are primarily zoned as Urban Village, Urban Innovation, and Urban Center under the Commercial and Artcraft District with pockets of Heavy Industrial zoned property. In Segment 2, properties are primarily zoned as Public Facilities and ADSP, with pockets of Heavy Industrial zoned property. South of US-101, in Segment 3, properties are primarily zoned as Public Facilities and Heavy Industrial, with pockets of Commercial and Commercial Manufacturing zoned property.

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Figure 3.2-1. Downtown Los Angeles Communities

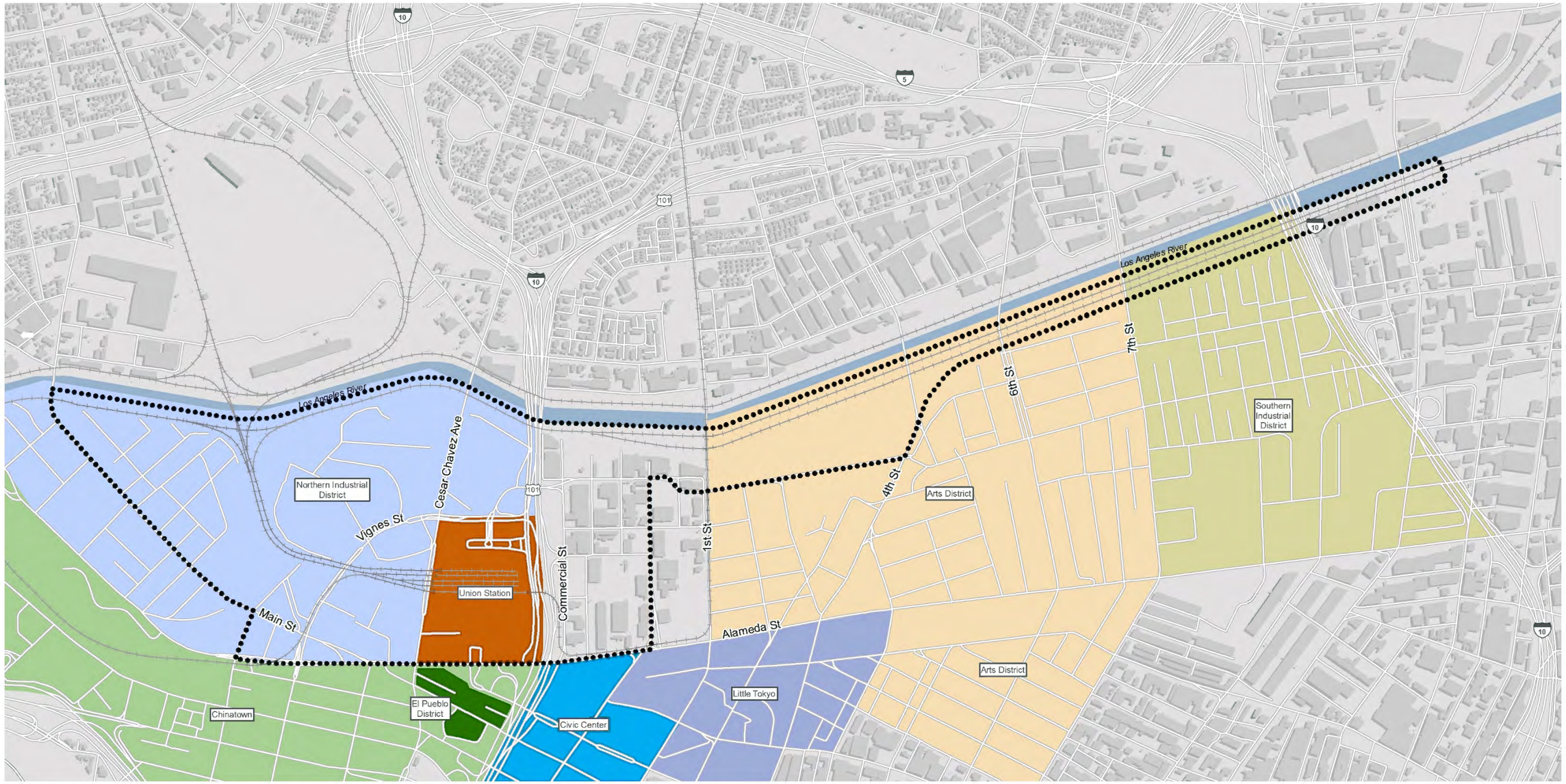

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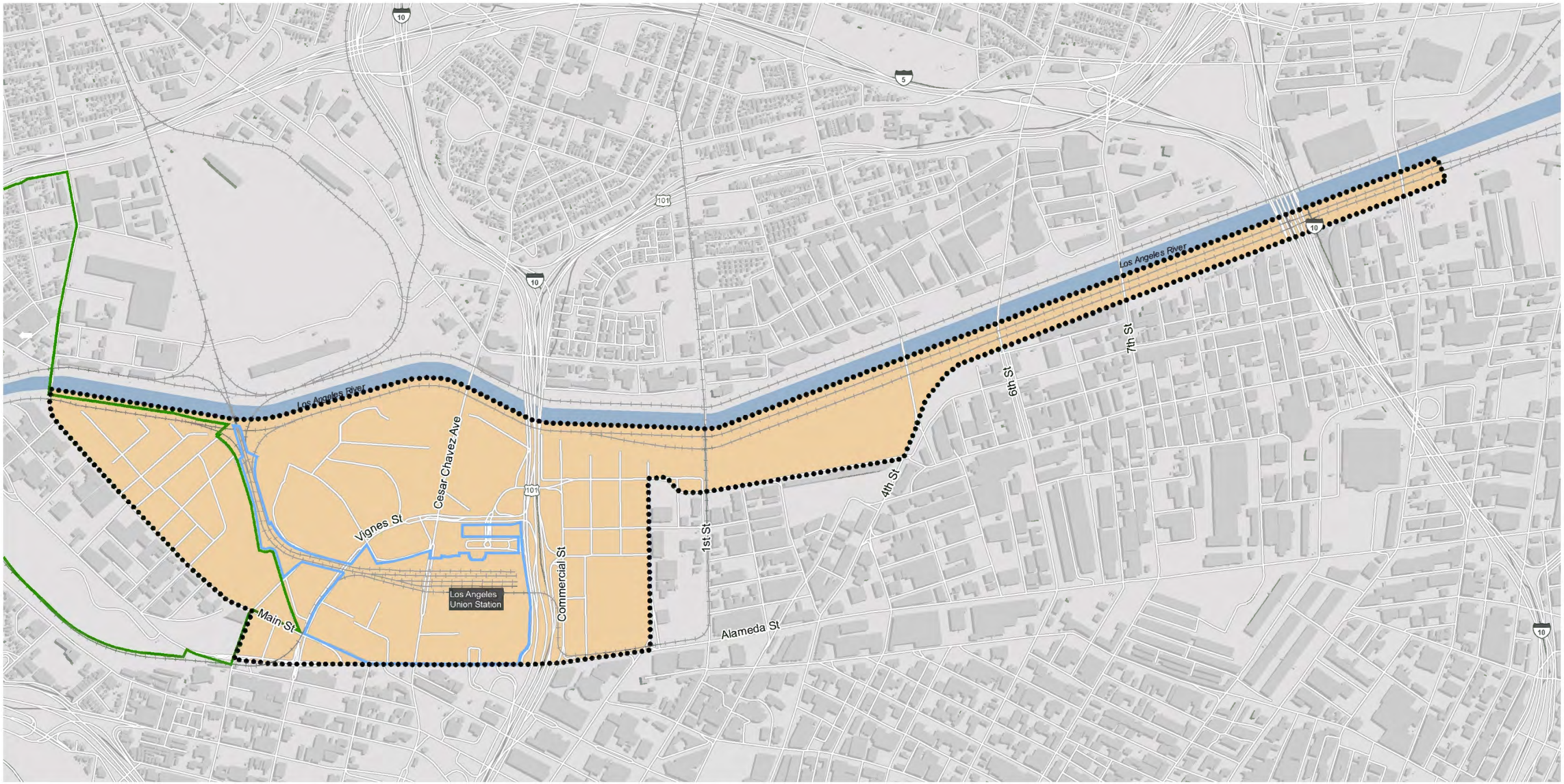
Figure 3.2-2. Community Plans and Specific Plans



LEGEND

- Project Study Area
- Alameda District Specific Plan Area
- Comfield / Arroyo Seco Specific Plan Area
- Central City North Community Plan Area

0 Feet 1,000

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Figure 3.2-3. General Plan Land Use Designations

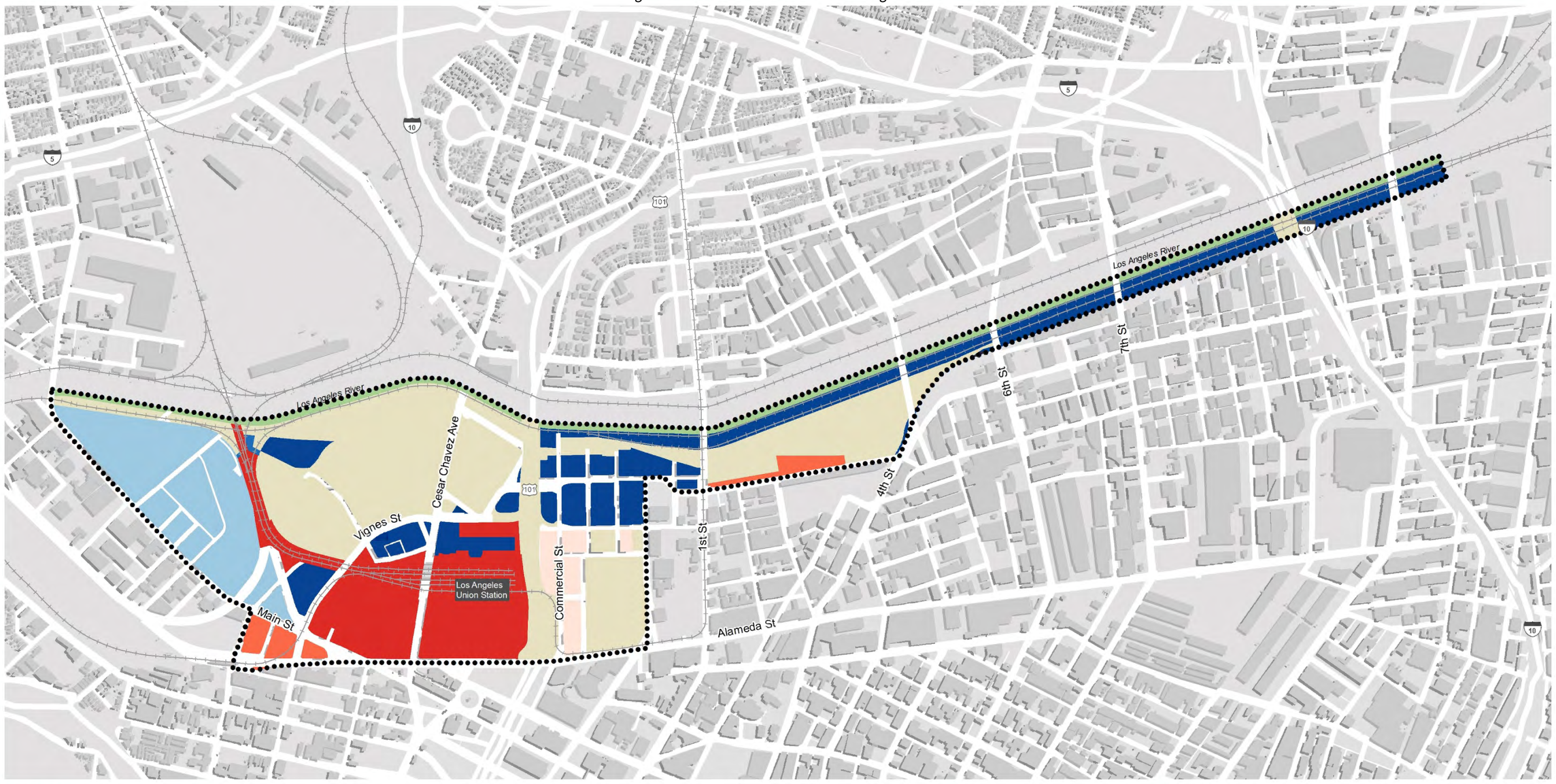

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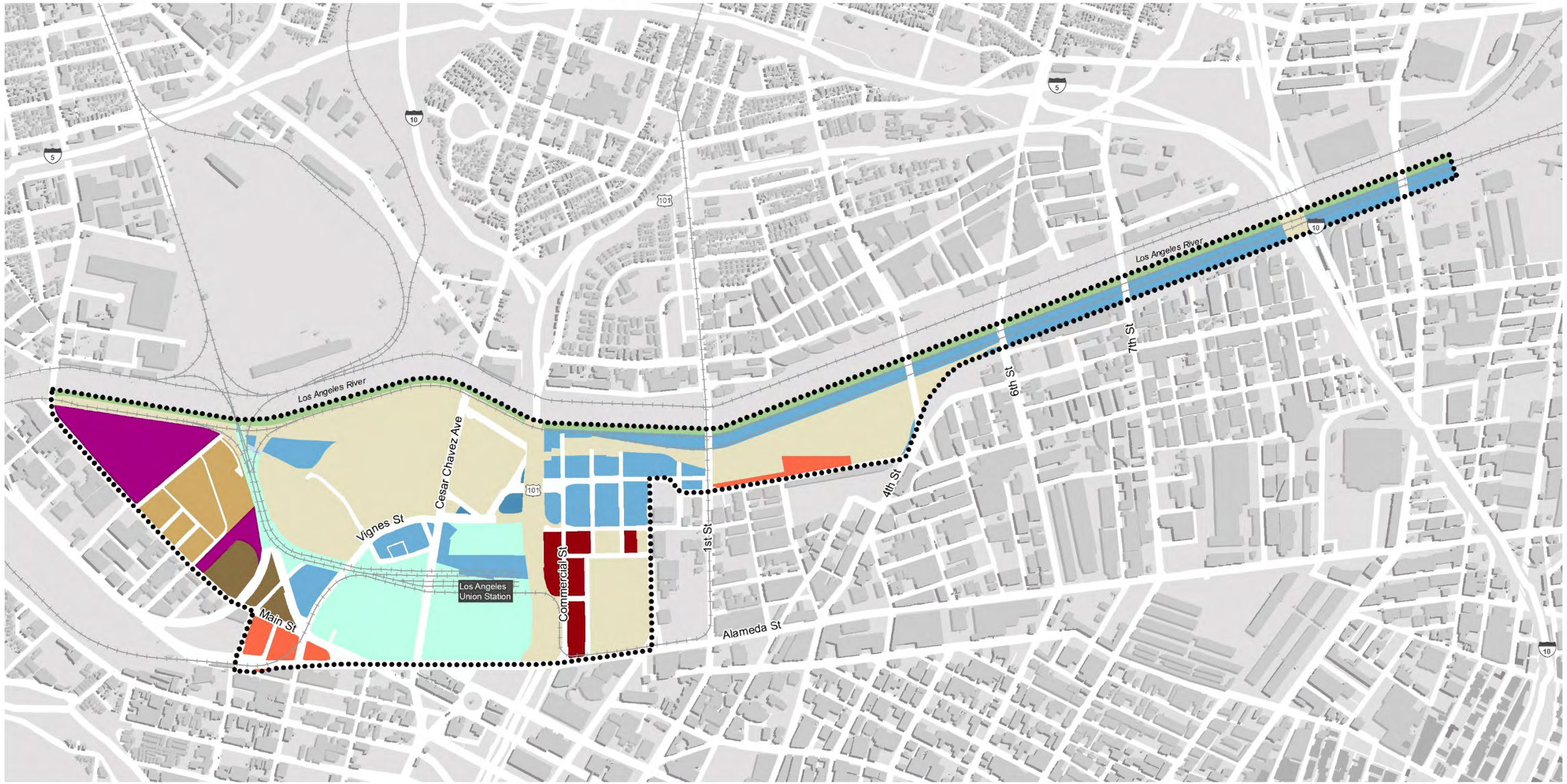
Figure 3.2-4. Zoning Designations



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3.2.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts on land use and planning would be considered significant if the project would:

A. Physically divide an established community

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

C. Conflict with any applicable habitat conservation plan or natural community conservation plan

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project.

B. Conflict with an Applicable Land Use Plan, Policy, or Regulation

- *Local Coastal Program* - The project study area is approximately 15 miles east of the Pacific coast and is, therefore, not in the coastal zone. A discussion of the project's impacts or potential conflicts with a local coastal program will not be carried forward in this analysis. No impact would occur under CEQA.

C. *Habitat Conservation Plan or Natural Community Conservation Plan* - There are no habitat conservation plans or natural community conservation plans that are applicable within the project study area. Therefore, no conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would result. No impact would occur under CEQA.

Analysis

THRESHOLD 3.2-A	Physically divide an established community

Direct Impacts – Construction

The proposed project is located in an urbanized environment with a heavy presence of existing transportation infrastructure, and commercial and industrial land uses. As described in Section 3.2.4, residential communities located in the project study area include the William Mead Homes complex (Segment 1: Throat Segment), Mozaic Apartments (Segment 2: Concourse Segment), and One Santa Fe Apartments (Segment 3: Run-through Segment). The proposed project would be constructed mostly within the existing railroad ROW, and none of these residential communities, or any other

established communities, are located within the project footprint. Therefore, the proposed project would not physically divide an established community. No impact would occur.

Direct Impacts – Operations

The project would be located in an urbanized environment with a heavy presence of existing transportation infrastructure, including the existing railroad ROW in Segment 1, the rail yard and LAUS facilities in Segment 2, and the US-101, BNSF West Bank Yard, and other rail-related infrastructure in Segment 3. In Segments 1 and 2 of the project study area. All proposed infrastructure would occur within the general limits of LAUS on agency-owned property in Segments 1 and 2 of the project study area; therefore, no impact would occur.

South of US-101 in Segment 3, run-through track infrastructure would be constructed in the interim condition outside of existing transportation ROW where vacant properties and commercial and manufacturing/industrial land uses are currently present. Run-through track infrastructure south of LAUS would require realignment of Commercial Street closer to US-101, where vacant property and staging areas currently exist. Realignment of Commercial Street is proposed to avoid large columns within the center of Commercial Street, and enhance opportunities for future redevelopment on parcels south of LAUS with adequate vehicular access and connectivity consistent with applicable community plans. Design elements integrated into the realignment of Commercial Street would also optimize public safety and fulfill complete streets initiatives for the affected portion of Commercial Street in Segment 3. Due to the existence of vacant properties adjacent to US-101, and because the proposed reconfiguration of Commercial Street is proposed in a manner that would maintain access and connectivity opportunities for future community development, the project would not physically divide established communities. Impacts are considered less than significant.

Indirect Impacts

After construction of run-through track infrastructure south of LAUS is complete, future redevelopment south of LAUS in Segment 3 would not be precluded. Unused space and staging areas could be converted to future development lots (with access thereto) in the interim and full build-out conditions. Therefore, no impact would occur.

THRESHOLD 3.2-B	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

Direct Impacts – Construction

Metro is authorized by the State of California to develop its property under its enabling legislation (AB 152) and Public Utilities Code 30631a. Construction would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over project facilities and/or site conditions. The project would be constructed in accordance with Metro's Green Construction Policy and is

consistent with the 2016 RTP/SCS that encourages sustainable design of public facilities, integrated expansion of new land uses with enhanced transportation options, and enhanced multimodal connectivity throughout the region. Therefore, impacts are considered less than significant.

Direct Impacts – Operations

The project is generally consistent with the plans and policies that encourage sustainable design of public facilities, expansion of existing transportation options, and increased rail service in the Southern California. In addition to supporting Metrolink's implementation of the SCORE Program, the project is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the following:

- California Transportation Plan 2040 (Caltrans 2016)
- 2016 RTP/SCS (SCAG 2016)
- 2018 California State Rail Plan (Caltrans 2018)
- 2018 Business Plan (CHSRA 2018)

As described in the 2016 RTP/SCS, the project would improve rail service and safety for Metrolink and the LOSSAN rail corridor, and it would also provide interconnectivity to the planned HSR system, making it an attractive alternative to congested highways. The 2016 RTP/SCS identifies improvements at LAUS as a critical first step in the implementation of regional transportation solutions. From a regional perspective, the project would expand existing transportation options, foster multimodal connectivity throughout the region, and accommodate the planned HSR system. LAUS is identified as a high-quality transit area and transit priority area within the 2016 RTP/SCS, and the project is specifically identified as the number one future transit improvement for the region.

At the local level, the project would achieve Purpose B of the ADSP by providing continued and expanded development of the site as a major transit hub for the region and a mixed-use development providing retail, tourism, and related uses. Likewise, the project would be consistent with Goal 10 of the CCNCP by developing a public transit system that improves mobility with convenient alternatives to automobile travel. The project may require the City of Los Angeles to implement certain discretionary actions and entitlements in accordance with adopted plans and policies to reflect the proposed modifications to the circulation network south of LAUS in the *City of Los Angeles Mobility Plan 2035*.

The following plans and policies include provisions for active transportation and connections from LAUS to the Los Angeles River:

- The Los Angeles River Revitalization Master Plan identifies Commercial Street between Alameda and Center Streets as a future primary local Green Street and neighborhood gateway portal to the Los Angeles River. Green Streets standards emphasize multimodal transportation infrastructure that accommodates the needs of pedestrians, bicyclists, other non-motorized transportation users.

- The Los Angeles River Design Guidebook establishes design recommendations for the neighborhoods identified in the Los Angeles River Revitalization Master Plan, including:
    - Providing safe pedestrian and bicyclist access to the Los Angeles River
    - Providing adequate sidewalks and buffers between pedestrians and vehicles/transit
    - Prioritizing pedestrian safety above other modes
- The City of Los Angeles Ordinance 183145 authorizes the River Improvement Overlay (RIO) Districts, within which LAUS is located. The RIO Districts are intended to:
    - Support the goals of the Los Angeles River Revitalization Master Plan
    - Establish a positive interface between river adjacent property and river parks and/or greenways
    - Promote pedestrian, bicycle and other multimodal connection between the river and its surrounding neighborhoods
    - Provide safe, convenient access to and circulation along the river
- The LAUS Sustainable Neighborhood Assessment objective is to improve the neighborhood's day-to-day sustainability and increase its resilience during future weather events, and contains recommendations with associated actions prepared for the purpose of addressing:
    - Long-standing connectivity issues with the station's surroundings
    - Connections to and the health of the Los Angeles River
    - Implementation of green building techniques in the project study area (portion of the LAUS study area considered in the LAUS Sustainable Neighborhood Assessment)

The proposed project does not include a non-motorized route from LAUS to the Los Angeles River, and proposed infrastructure would conflict with the vision of a neighborhood gateway portal to the Los Angeles River, as identified in the Los Angeles River Revitalization Master Plan. For this same reason, the proposed project would conflict with the RIO Overlay District guidelines, and two of the four recommendations and associated actions of the LAUS Sustainable Neighborhood Assessment, as summarized below:

- Recommendation 2 (Neighborhood Connectivity) – The project does not include pedestrian accommodations, cycling facilities, or linkages for pedestrians and cyclists in or around LAUS.
- Recommendation 3 (River Connections) – Although parcels south of LAUS would be acquired to facilitate construction of the run-through track infrastructure south of LAUS, the project does not provide a pedestrian linkage between the east side of LAUS to the Los Angeles River.

The proposed project would conflict with the *City of Los Angeles Mobility Plan 2035*, Policy 2.12 that includes recommendations to:

- Include walkway and bikeway facilities when installing a new bridge or exclusive transit ROW
- Provide safe connections between areas that are not directly accessible because of barriers such as rail lines and freeways

Based on these considerations, the project conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River. This is considered a significant impact. As described in Section 3.3, Traffic and Transportation, the project would also result in a significant impact due to the operational traffic delays anticipated at one intersection south of LAUS. LADOT Traffic Impact Study Guidelines (Appendix D of this EIR) require mitigation programs for impacts that are expected to be significant under CEQA to primarily aim to minimize the demand for trips by single-occupant vehicles by encouraging, promoting, and supporting the use of other sustainable modes of travel like public transit, walking, and bicycling. Consistent with LADOT Guidelines, Mitigation Measure LU-1 (described in Section 3.2.6) is proposed to improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. As identified in Mitigation Measure LU-1 and shown on Figure 3.2-5, future connections from LAUS to the Los Angeles River could include one or more of the following infrastructure improvements in the project study area:

- Dedicated bicycle/pedestrian bridge over US-101, from LAUS to the Los Angeles River
- New bicycle lanes along Commercial Street between Garey Street and Alameda Street

Upon implementation of Mitigation Measure LU-1, impacts would be reduced to a level less than significant.

Indirect Impacts

Once constructed, the project could encourage planned residential and commercial infill development by providing an economic driver for such development. Indirect impacts on surrounding land uses (induced growth) could also be beneficial by encouraging sustainable neighborhood development principles and other initiatives that would advance more efficient land use patterns and increased real estate values consistent with regional transportation and urban planning goals for the City of Los Angeles and the region as a whole. Therefore, no impact would occur.

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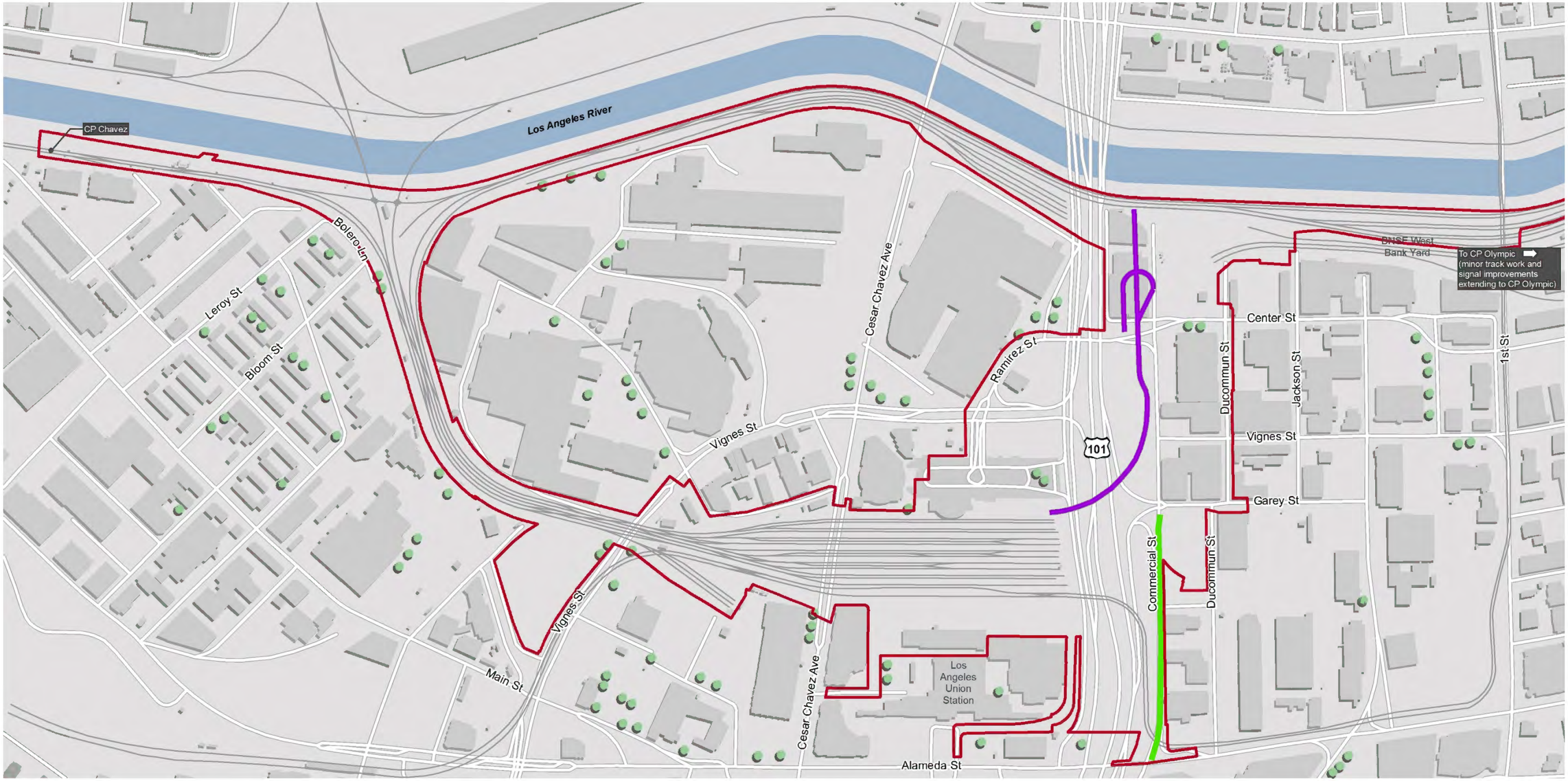
Figure 3.2-5. Active Transportation Improvement Options



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3.2.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to land use and planning.

LU-1 Implement Transportation Demand Management Measures to Enhance Neighborhood Connectivity: Metro shall implement a transportation demand management program to enhance neighborhood connectivity while also minimizing the demand for trips by single-occupant vehicles in the project study area. Metro, in coordination with the City of Los Angeles, shall provide future connections from LAUS to the Los Angeles River that could include one or more of the following infrastructure improvements in the project study area:

- Dedicated bicycle/pedestrian bridge over US-101 from LAUS to the Los Angeles River
- New bicycle lanes along Commercial Street between Garey Street and Alameda Street

Active transportation infrastructure shall be coordinated with the City of Los Angeles and designed and constructed to maximize non-motorized connectivity in the project study area.

3.2.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measure LU-1, significant impacts associated with conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River would be reduced to a level less than significant. During construction and/or operation of one or more of the two improvements identified in Mitigation Measure LU-1, there is a potential for a significant impact to occur. As depicted on Figure 3.2-5, the two active transportation improvement options identified as part of Mitigation Measure LU-1 physically occur within the Link US project footprint. Table 3.2-2 identifies the potential significant impacts associated with implementation of the active transportation improvement options and mitigation measure(s) required to reduce impacts to a level less than significant.

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Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.2, Land Use and Planning			
Threshold 3.2-A: Physically Divide an Established Community.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.2-B: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.2-C: Conflict with any applicable habitat conservation plan or natural community conservation plan	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Section 3.3, Transportation and Traffic			
Threshold 3.3-A: Impact Local Traffic Plans, Policies, or Ordinances.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Detours and street closures may require traffic to be diverted to nearby local roadways, and the LOS of adjacent intersections would be affected. **Commercial Street Restriping:** ***Potentially Significant.*** Lane closures may result in construction-related traffic delays.	**TR-1: Prepare a Construction TMP**	Less than Significant
Threshold 3.3- B. Conflict with an applicable congestion management program, including, but not limited to, LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.3-C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.3-D: Create or Increase Hazards from Project Design Features.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Construction activities would result in temporary construction-related roadway hazards in the project area. Existing roadways may be subject to temporary detours and lane blockages. **Commercial Street Restriping:** ***Potentially Significant.*** Existing roadways may be subject to temporary detours and lane blockages.	**TR-1: Prepare a Construction TMP**	Less than Significant
Threshold 3.3-E: Result in inadequate emergency access.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** US-101 is identified as a designated disaster route. The dedicated bicycle/pedestrian bridge would be constructed over US-101. Therefore, construction activities could interfere with emergency response and access. **Commercial Street Restriping:** ***No Impact***	**TR-1: Prepare a Construction TMP**	Less than Significant
Threshold 3.3-F: Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Section 3.4, Aesthetics			
Threshold 3.4-A: Have a substantial adverse effect on a scenic vista.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.4-B: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.4-C: Substantially degrade the existing visual character or quality of the site or its surroundings.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** The dedicated bicycle/pedestrian bridge would result in a substantial addition of a new transportation infrastructure element to the existing visual environment south of LAUS, but the proposed improvement would be in context with the existing conditions and visual character, as it is primarily a transportation corridor with multiple railroad-oriented uses. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.4-D: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** The dedicated bicycle/pedestrian bridge would require lighting, however the bridge would be located within a developed urban area where there is currently a large amount of lighting from transportation, commercial, and industrial uses. Impacts related to lighting would not be expected to substantially affect the surrounding area. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Section 3.5, Air Quality and Global Climate Change			
Threshold 3.5-A: Conflict with or obstruct implementation of the applicable air quality plan.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.5-B: Violate any air quality standard or contribute substantially to an existing or projected air quality violation. **Threshold 3.5-C: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors).**	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Construction of the dedicated bicycle/pedestrian bridge has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, material delivery trips, and heavy-duty haul truck trips. Construction of the dedicated bicycle/pedestrian bridge would generate air quality emissions that may exceed SCAQMD's significance thresholds (NO_x, PM_{10}, and $PM_{2.5}$). **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street is not anticipated to require a substantial amount of heavy-duty construction vehicles or worker trips. Furthermore, no excavation or grading is required. The restriping of Commercial Street is not anticipated to exceed SCAQMD's significance thresholds.	**AQ-1: Air Quality Protection and Fugitive Dust Control** **AQ-2: Compliance with EPA's Tier 4 Exhaust Emission Standards**	Less than significant
Threshold 3.5-D: Expose sensitive receptors to substantial pollutant concentrations.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Land uses in the area primarily consist of transportation uses, commercial manufacturing, and heavy industrial uses. There are no sensitive receptors located nearby. **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street is not anticipated to require a substantial amount of heavy-duty construction vehicles or worker trips. Furthermore, no excavation or grading is required. The restriping of Commercial Street would not expose sensitive receptors to substantial pollutant concentrations.	No mitigation is proposed.	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.5-E: Create objectionable odors affecting a substantial number of people.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Emission of odors during construction would be short-term and limited in extent at any given time. **Commercial Street Restriping:** ***Less than Significant.*** Emission of odors during construction would be short-term and limited in extent at any given time.	No mitigation is proposed.	Less than Significant
Threshold 3.5-F: Generate greenhouse gas emissions, either directly or indirectly, that may have an adverse effect on the environment.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Construction of the dedicated bicycle/pedestrian bridge would generate GHG emissions from on-site construction equipment. Once constructed, the bridge would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking the in the project study area. This would also minimize the demand for trips by single-occupant vehicles in the project study area, thereby contributing to a reduction in GHG emissions. **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. This would also minimize the demand for trips by single-occupant vehicles in the project study area, thereby contributing to a reduction in GHG emissions.	No mitigation is proposed.	Less than Significant
Threshold 3.5-G: Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant***. Once constructed, the dedicated bicycle/pedestrian bridge would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. This would also minimize the demand for trips by single-occupant vehicles in the project study area, thereby contributing to a reduction in GHG emissions. **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. This would also minimize the demand for trips by single-occupant vehicles in the project study area, thereby contributing to a reduction in GHG emissions.	No mitigation is proposed.	Less than Significant
Section 3.6, Noise and Vibration			
Threshold 3.6-A: A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	**Dedicated Bicycle/Pedestrian Bridge:** ***No impact*** **Commercial Street Restriping:** ***No impact***	No mitigation is proposed.	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.6-B: Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Construction of the dedicated bicycle/pedestrian bridge would result in temporary vibration from use of heavy equipment and machinery. The project area is mostly occupied by existing commercial and industrial buildings (warehouses and refrigerated storage facilities). There are no nearby sensitive receptors such as residences, schools, or hospitals. **Commercial Street Restriping:** ***No impact***	No mitigation is proposed.	Less than Significant
Threshold 3.6-C: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Construction of the dedicated bicycle/pedestrian bridge would result in a new source of project-related noise for land uses nearby. The project area is mostly occupied by existing commercial and industrial buildings (warehouses and refrigerated storage facilities). There are no nearby sensitive receptors such as residences, schools, or hospitals. **Commercial Street Restriping:** ***No impact***	No mitigation is proposed.	Less than Significant
Threshold 3.6-D: A substantial temporary or periodic increase in ambient noise levels existing without the project.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Construction of the dedicated bicycle/pedestrian bridge would result in a new source of project-related noise for land uses nearby. The project area is mostly occupied by existing commercial and industrial buildings (warehouses and refrigerated storage facilities). There are no nearby sensitive receptors such as residences, schools, or hospitals. **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street would not require excavation activities or the use of substantial construction equipment.	No mitigation is proposed.	Less than Significant
Threshold 3.6-E: Exposure of persons residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.6-F: Exposure of persons residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.7, Biological Resources			
Threshold 3.7-A: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** If construction occurs during the bat maternity season (May 1 through August 31), there is a potential for direct impacts (e.g., maternity site abandonment) to occur on western yellow bats as a result of removal of naturally occurring or planted (ornamental) trees, including palm trees. Construction may also interfere with MBTA-covered species during the nesting season. **Commercial Street Restriping:** ***No Impact***	**BIO-1: Bats** **BIO-2: MBTA Species**	Less than Significant
Threshold 3.7- B: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.7-C: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.7-D: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.7-E: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Construction of the dedicated bicycle/pedestrian bridge may require the removal or disturbance of one or more native tree species considered a Protected Tree under the City of Los Angeles Tree Ordinance. **Commercial Street Restriping:** ***No Impact***	**BIO-3: Protected Trees.**	Less than Significant
Threshold 3.7-F: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.8, Floodplains, Hydrology, and Water Quality			
Threshold 3.8-A: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than significant
Threshold 3.8-B: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, if not properly managed. During operation, the bridge would result in alterations to the existing drainage patterns in the project area. **Commercial Street Restriping:** ***No Impact***	**HWQ-3: Prepare and Implement a SWPPP** **HWQ-4: Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-6: Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-7: Long-Term Memorandum of Agreement**	Less than Significant
Threshold 3.8-C: Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During operation, an overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and capacity of some on-site drainage systems. **Commercial Street Restriping:** ***No Impact***	**HWQ-3: Prepare and Implement a SWPPP** **HWQ-4: Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-6: Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-7: Long-Term Memorandum of Agreement**	Less than Significant
Threshold 3.8-D: Expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact.
Threshold 3.8-E: Violate any water quality standards or waste discharge requirements.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation. Minor amounts of chemical pollutants and trash may enter into the existing drainage system into the existing drainage system along US-101. **Commercial Street Restriping:** ***No Impact***	**HWQ-3: Prepare and Implement a SWPPP** **HWQ-4: Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-6: Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-7: Long-Term Memorandum of Agreement**	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.8-F: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** During construction, it may be necessary for the contractor to re-route drainage around one or more construction areas, which, in turn, may concentrate runoff and/or direct it off-site, thereby resulting in substantial erosion on adjacent properties if not properly managed. During operation, an overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume and velocity of runoff during a storm event that transports pollutants to receiving waters and may lead to downstream erosion and increases in suspended particles and sediment. **Commercial Street Restriping:** ***No Impact***	**HWQ-3: Prepare and Implement a SWPPP** **HWQ-4: Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW)** **HWQ-6: Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA)** **HWQ-7: Long-Term Memorandum of Agreement**	Less than Significant
Threshold 3.8-G: Otherwise substantially degrade water quality.	**Dedicated Bicycle/Pedestrian Bridge:** **Potentially significant Impact.** Without mitigation, during construction and operation, the dedicated bicycle/pedestrian bridge could otherwise substantially degrade water quality. **Commercial Street Restriping:** ***No Impact***	**HWQ-3: Prepare and Implement a SWPPP**	Less than Significant
Threshold 3.8-H: Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary Map or FIRM or other flood hazard delineation map	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.8-I: Place within a 100-year flood hazard area structures which would impede or redirect flood flows.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.8-J: Inundation by seiche, tsunami, or mudflow.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.9, Geology and Soils			
Threshold 3.9-A: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: **i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state Geologist for the area or based on the other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42** **ii. Strong seismic ground shaking** **iii. Seismic-related ground failure, including liquefaction.** **iv. Landslides**	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** As described in Section 3.9, Geology and Soils, liquefaction is expected to occur at the project site. Because the dedicated bicycle/pedestrian bridge is located within the Link US project footprint, it may also be subject to liquefaction-related hazards. **Commercial Street Restriping:** ***No Impact***	**GEO-1: Prepare Final Geotechnical Report**	Less than Significant
Threshold 3.9-B: Result in substantial soil erosion or the loss of topsoil.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact
Threshold 3.9-C: Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** As described in Section 3.9, Geology and Soils, liquefaction is expected to occur at the project site. Because the dedicated bicycle/pedestrian bridge is located within the Link US project footprint, it may also be subject to liquefaction-related hazards. **Commercial Street Restriping:** ***No Impact***	**GEO-1: Prepare Final Geotechnical Report**	Less than Significant
Threshold 3.9-D: Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risk to life or property.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** The bridge would be constructed in accordance with standard engineering practices to minimize the adverse impacts of expansive soils, if any. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.9-E: Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.10, Hazards and Hazardous Materials			
Threshold 3.10-A: Create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Potential hazards generated by the routine transport, use, and disposal of hazardous materials, contaminated soils, and/or contaminated groundwater during construction could occur, if not adequately managed. **Commercial Street Restriping:** ***Potentially Significant.*** Potential hazards generated by the routine transport, use, and disposal of hazardous materials, contaminated soils, and/or contaminated groundwater during construction could occur, if not adequately managed.	**HAZ-1: Prepare a Construction HMMP**	Less than Significant
Threshold 3.10-B: Create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** As shown on Figure 3.10-2 (Section 3.10, Hazards and Hazardous Materials), REC sites are located along Commercial Street. The construction activities associated with the dedicated bicycle/pedestrian bridge could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater). Other potential impacts could include encountering soils contaminated with petroleum or petroleum products and exposure to accidental release of ACMs or lead. **Commercial Street Restriping:** ***Less than Significant Impact.*** The restriping of Commercial Street would not create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. The transport, use, and disposal of construction-related substances and materials would be subject to federal, state, and local regulations.	**HAZ-1: Prepare a Construction HMMP** **HAZ-2: Prepare Project-wide Phase II ESA (based on completed Phase I ESA).** **HAZ-3: Prepare a General Construction Soil Management Plan.** **HAZ-4: Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans.** **HAZ-5: Land Use Covenant Sites and Coordination with the Department of Toxic Substances Control** **HAZ-6: Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7: Compliance with the City of Los Angeles Methane Building Code Ordinances** **HAZ-8: Pre-Demolition Investigation**	Less than Significant
Threshold 3.10-C: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.10-D: Be located on a site which is included on a list of hazardous materials sites complies pursuant to Government Code Section 65962.5 and as a result, would create an adverse hazard to the public or the environment.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** As shown on Figure 3.10-2 (Section 3.10, Hazards and Hazardous Materials), REC sites are located along Commercial Street. The construction activities associated with the dedicated bicycle/pedestrian bridge could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater). There are also two land use covenant sites that are along Commercial Street: • Former Aliso Street Property - 718 E. Commercial Street • A&H Greenfield Sheet Metal/Viertel's Police - 830 E Commercial Street The potential to encounter undocumented sources of contamination exists and a significant impact could occur. **Commercial Street Restriping:** ***Less than Significant.*** The restriping of Commercial Street would not require excavation activities that could otherwise result in potential exposure to contaminated soil and/or groundwater.	**HAZ-2: Prepare Project-wide Phase II ESA (based on completed Phase I ESA)** **HAZ-3: Prepare a General Construction Soil Management Plan** **HAZ-4: Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans** **HAZ-5: Land Use Covenant Sites and Coordination with the Department of Toxic Substances Control** **HAZ-6: Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered**	Less than Significant
Threshold 3.10-E: Result in a safety hazard for people residing or working in the project area (for projects located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport);	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.10-F: Result in a safety hazard for people residing or working in the project area (for projects within the vicinity of a private airstrip);	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.10-G: Impair implementation of an adopted emergency response plan or emergency evacuation plan.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** US-101 is identified as a designated disaster route. The dedicated bicycle/pedestrian bridge would be constructed over US-101. Construction activities could interfere with emergency response and access. **Commercial Street Restriping:** ***No Impact***	**TR-1: Prepare a Construction TMP**	Less than Significant
Threshold 3.10-H: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.11, Utilities/Service Systems and Energy Conservation			
Threshold 3.11-A: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.11-B: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.11-C: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** New drainage infrastructure would be required to accommodate increased impervious surfaces and associated impacts resulting from runoff. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.11-D: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Sufficient water supplies are expected to be available for construction of the dedicated bicycle/pedestrian bridge. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.11-E: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No impact
Threshold 3.11-F: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Contractor would be required to comply with SB 1374 and the Los Angeles C&D Waste Recycling Ordinance regarding concrete, asphalt, scrap metal, wood, and gypsum/wallboard. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.11-G: Comply with Federal, State, and local statutes and regulations related to solid waste.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** All solid waste generated would be recycled or disposed of in compliance with applicable federal, state, and local statutes and regulations. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.11-H: Require or result in the construction of new gas or electric facilities or expansion of existing facilities.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Sufficient supplies of gas and electricity are available to construct the dedicated bicycle pedestrian bridge. Electricity would be required for lighting on the bridge. Operations-related energy use would not require or result in the construction of new gas or electric facilities or the expansion of existing facilities. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.11-I: Have insufficient gas or electricity supplies available to serve the project.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Sufficient supplies of gas and electricity are available to construct the dedicated bicycle pedestrian bridge. Electricity would be required for nighttime lighting on the bridge. Current supplies are expected to be sufficient for the bridge. **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	Less than Significant
Threshold 3.11-J: Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency.	**Dedicated Bicycle/Pedestrian Bridge:** ***Less than Significant.*** Energy in the form of fuels used for construction vehicles and other equipment would be used during site excavation, grading, and all other construction-related activity. Such fuel energy use would be temporary and would not represent a significant, permanent, or unnecessary commitment to the use of energy, including non-renewable sources. **Commercial Street Restriping:** ***Less than Significant.*** Energy in the form of fuels used for the construction vehicles and other equipment would be used to restripe Commercial Street. Such fuel energy use would be temporary and would not represent a significant, permanent, or unnecessary commitment to the use of energy, including non-renewable sources.	No mitigation is proposed.	Less than Significant
Section 3.12, Cultural, Historic, Tribal, and Paleontological Resources			
Threshold 3.12-A: Cause a substantial adverse change in the significance of a historical resource as defined in §150464.5.	**Dedicated Bicycle/Pedestrian Bridge:** ***No Impact*** **Commercial Street Restriping:** ***No Impact***	No mitigation is proposed.	No Impact

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Threshold 3.12-B: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Ground disturbance during construction has the potential to impact recorded and unrecorded archaeological resources. **Commercial Street Restriping:** ***No Impact***	**HIST-4: Archaeological Site CA-LAN-1575/H – Preparation of a Cultural Resource Mitigation and Monitoring Plan** **HIST-5: Development of a Public Participation or Outreach Plan**	Less than Significant
Threshold 3.12-C: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Deeper excavations for foundations and support piers to support the bridge structure may extend up to 100 feet below the surface and have the potential to impact paleontologically sensitive deposits of older Quaternary alluvium. **Commercial Street Restriping:** ***No Impact***	**PAL-1: Prepare a Paleontological Mitigation Plan** **PAL-2: WEAP Training** **PAL-3: Curation**	Less than Significant
Threshold 3.12-D: Disturb any human remains, including those interred outside of formal cemeteries.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** There is a potential to encounter human remains during ground-disturbing construction activities. **Commercial Street Restriping:** ***No Impact***	**HR-1: Human Remains**	Less than Significant
Threshold 3.12-E: Cause a substantial adverse change in the significance of a tribal cultural resources as defined in §21074.	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Ground-disturbing construction activities may have the potential to impact tribal cultural resources. **Commercial Street Restriping:** ***No Impact***	**HIST-4: Archaeological Site CA-LAN-1575/H – Preparation of a Cultural Resource Mitigation and Monitoring Plan** **HIST-5: Development of a Public Participation or Outreach Plan** **TCR-1: Native American Monitoring**	Less than Significant

Table 3.2-2. Potential Impacts Resulting from Active Transportation Infrastructure

Significance Threshold	Potential Impact(s) of Active Transportation Improvements	Proposed Mitigation Measures	Significance After Mitigation
Section 3.13, Public Services			
Threshold 3.13-C: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: **i. Fire Protection** **ii. Police Protection** **iii. Schools** **iv. Parks** **v. Other Public Facilities**	**Dedicated Bicycle/Pedestrian Bridge:** ***Potentially Significant.*** Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times. **Commercial Street Restriping:** ***No Impact***	**TR-1: Prepare a Construction TMP**	Less than Significant

Notes:
ACM=asbestos-containing materials; BMP=best management practice; C&D=Construction and demolition; CDFW=California Department of Fish and Wildlife; CHSRA=California High-Speed Rail Authority; CWA=Clean Water Act; EPA=Environmental Protection Agency; ESA=Environmental Site Assessment; FIRM=Flood Insurance Rate Map; GHG=greenhouse gas; HMMP=Hazardous Materials Management Plan; LAUS=Los Angeles Union Station; NO_X=nitrogen oxides; MBTA=Migratory Bird Treaty Act; PM_{10}=Particulate Matter Less than 10 microns; $PM_{2.5}$=Particulate Matter Less than 2.5 microns; REC=Recognized Environmental Condition; ROW=right-of-way; SB=Senate Bill; SCAQMD=South Coast Air Quality Management District; SWPP=stormwater pollution prevention plan; TMP=Traffic Management Plan; WEAP=Worker's Environmental Awareness Program Training

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3.3 Transportation and Traffic

3.3.1 Introduction

This section provides an analysis of the project's transportation related impacts. Information contained in this section is based on the *Link US Traffic Impact Assessment* (Appendix E of this EIR).

3.3.2 Regulatory Framework

Table 3.3-1 identifies and summarizes applicable laws, regulations, and plans relative to transportation.

Table 3.3-1. Applicable Laws, Regulations, and Plans for Transportation

Law, Regulation, or Plan	Description
Regional	
SCAG 2016-2040 RTP/SCS	The RTP/SCS is a long-range regional transportation plan that provides a blueprint to coordinate the regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs and help the region achieve state greenhouse gas emission reduction goals. SCAG prepared a Program Environmental Impact Report for the 2016-2040 RTP/SCS. The project is listed in the RTP/SCS as Federal Transportation Improvement Program #LA0G1051.
Local	
Los Angeles CMP	On October 28, 2010, the Metro Board adopted the 2010 CMP for Los Angeles County. The CMP was adopted primarily to monitor and maintain Level of Service standards across the network of all CMP facilities, including state highways and principal arterials within Los Angeles County. The CMP requires that potential project impacts on CMP monitoring locations are analyzed as part of proposed new development projects, if an EIR is prepared for the project. Per the 2010 CMP, a significant impact occurs when a project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02), causing LOS F (V/C > 1.00); if the facility is already at LOS F, a significant impact occurs when a project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02).
City of Los Angeles TDM Program	The City's TDM program is designed to decrease dependency on single occupancy vehicles. LADOT strongly encourages the development of a comprehensive TDM program to eliminate as many new project trips as possible. Consistent with LADOT Traffic Impact Study Guidelines (LADOT 2016), mitigation programs for impacts that are expected to be significant under CEQA should be developed to primarily aim to minimize the demand for trips by single-occupant vehicles by encouraging, promoting, and supporting the use of other sustainable modes of travel like public transit, walking, and bicycling. LADOT identifies mitigation categories, that should

Table 3.3-1. Applicable Laws, Regulations, and Plans for Transportation

Law, Regulation, or Plan	Description
	be considered when evaluating and proposing transportation mitigation measures.
City of Los Angeles Mobility Plan 2035	The Mobility Plan 2035 is the City of Los Angeles General Plan Transportation Element. The plan incorporates "Complete Streets" principles and lays the policy foundation for future City of Los Angeles roadways. The "Complete Streets" concept takes into account the many community needs that streets fulfill. The plan identifies goals, objectives, policies, and action items that serve as guiding tools for making sound transportation decisions.
City of Los Angeles 2010 Bicycle Plan	The purpose of the Bicycle Plan is to increase, improve, and enhance bicycling in the City, making it a safe, healthy, and enjoyable means of transportation and recreation. The Bicycle Plan, a part of the Mobility Element, establishes policies and programs to increase the number and types of bicyclists in the City and make every street in the City a safe place to ride a bicycle. The Bicycle Plan includes a continuous bicycle path along the south and west sides of the Los Angeles River and identifies connections to the river to enhance access to existing and future segments of the river path for non-motorized transportation and recreation. The following policies and programs are contained within the Bicycle Plan: • Policy 1.1.3, Program B Downtown Bikeways – Plan and implement series of interconnected bikeways within the downtown area to link bicyclists to employment, retail, residential, civic, cultural, and recreational destinations. Downtown bikeways should be integrated with the existing Downtown Street Standards • Policy 1.3.1, Program A Bikeways along Exclusive Transit Rights-of-Way - Continue to include Class I bicycle paths adjacent to new exclusive surface transit rights of-way. Identify all major transit projects under development and work with Metro and other appropriate agencies to incorporate bikeways in new transit projects. • Policy 2.3.1, Program B Bridge Design Program - Consider bicycle facilities when designing new or retrofitting bridges. Any modifications to an existing bridge that has been designated, or determined to be eligible, as a Historic Resource should avoid adversely impacting character-defining features. Particular attention should be made to bridge underpasses that cross existing or future bicycle paths to ensure that the paths are integrated into the design and construction of the facility. • Policy 3.1.3, Program C Standard Mitigation Measure Revision - Revise the standard mitigation measures to include contributions to the Bicycle Plan Trust Fund and/or the installation of bicycle facility improvements and/or bicycle amenities such as parking, internal bikeway paths, etc. • Policy 3.1.3, Program D Traffic Study Guidelines Revision – Revise the City's Traffic Study Guidelines to prioritize the installation of bicycle facility improvements as a trip reduction measure.

Table 3.3-1. Applicable Laws, Regulations, and Plans for Transportation

Law, Regulation, or Plan	Description
Connect US Action Plan	Metro's Connect US Action Plan includes a strategy for encouraging people to walk and bicycle to LAUS from surrounding historic and cultural neighborhoods, including El Pueblo, Chinatown, Cornfield Arroyo Seco, Boyle Heights, Arts District, Little Tokyo, and Civic Center.
Metro Complete Streets Policy	This policy outlines Metro's commitment to and integrated transportation network that serves all roadway users and supports environmental and sustainability initiatives.
Metro First Last Mile Strategic Plan	This plan identifies ways Metro and other agency partners can improve access and connections to public transit. This plan aims to expand the reach of transit through infrastructure improvements to areas where First/Last mile barriers exist with the ultimate goal of increasing ridership. Metro's First Last Mile Strategy was developed in conformance with the policies outlined in the Countywide Sustainability Policy and Implementation Plan.
Metro's Active Transportation Strategic Plan	The Active Transportation Strategic Plan was adopted by the Metro Board of Directors on May 26, 2016. The Active Transportation Strategic Plan is Metro's county-wide effort to identify strategies to increase walking, bicycling and transit use in Los Angeles County, focused on improving first and last mile access to transit with a regional network of active transportation facilities, including shared-use paths and on-street bikeways with funding strategies to implement improvements.

Notes:
CEQA=California Environmental Quality Act; CMP=Congestion Management Program; EIR=environmental impact report; LADOT=Los Angeles Department of Transportation; LOS= level of service; RTP/SCS=Regional Transportation Plan/Sustainable Communities Strategy; SCAG=Southern California Association of Governments; TDM=Transportation Demand Management; V/C=volume to capacity

3.3.3 Methods for Evaluating Environmental Impacts

Intersection Level of Service Standards and Methodology

Level of service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A, to overloaded conditions at LOS F. Acceptable LOS for intersections is LOS E[1].

In this analysis, minimum acceptable intersection operating conditions follow the City guidelines for all intersections. Intersections operating at LOS E or F are considered unsatisfactory. The definitions for the range of LOS for signalized and STOP sign-controlled intersections under the Highway Capacity Manual are listed in Table 3.3-2 and Table 3.3-3. Synchro software was used for calculating the intersection LOS for existing and "with project" conditions.

[1] Congestion Management Program

Table 3.3-2. Level of Service Definitions for Signalized Intersections

LOS	Definition/Interpretation	Signalized Intersection Delay (seconds per vehicle)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	≤10
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	>10 and ≤20
C	Good operation. Occasionally drivers may have to wait for more than 60 seconds and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20 and ≤35
D	Fair operation. Cars are sometimes required to wait for more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	>35 and ≤55
E	Poor operation. Some long-standing vehicular queues develop on critical approaches.	>55 and ≤80
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go type traffic flow.	>80

Source: Appendix E of this EIR

Notes:
LOS=level of service

Table 3.3-3. Level of Service Definition for STOP Sign-Controlled Intersections

LOS	Unsignalized Intersection Delay (seconds per vehicle)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	≥50

Source: Appendix E of this EIR

Notes:
LOS=level of service

According to LADOT guidelines, when utilizing Highway Capacity Manual methodology for signalized intersections on transportation infrastructure projects, a transportation impact shall be deemed significant, in accordance with Table 3.3-4. A project would have a significant impact on intersection capacity if the project traffic would result in the following delays at traffic study area intersections, under the with project condition:

- If final LOS is C, an increase in average delay of ≥6.0 seconds
- If final LOS is D, an increase in average delay of ≥4.0 seconds
- If final LOS is E or F, an increase in average delay of ≥2.5 seconds

"Final delay" means the future delay per vehicle at an intersection with consideration to impacts with project, ambient, and related project growth, but without proposed traffic mitigation. "Project-related increase in delay" means the change in delay between final delay and future delay, with ambient and project-related growth, but without proposed traffic mitigation.

Table 3.3-4. Significant Transportation Impact (Delay Methodology)

LOS	Final Delay (seconds)	Project-Related Increase in Delay (seconds)
C	>20 - 35	≥6.0
D	>35 - 55	≥4.0
E	>55 - 80	≥2.5
F	>80	≥2.5

Source: Appendix E of this EIR

Notes:
LOS=level of service

Freeway Level of Service Standards

Freeway main line LOS is estimated through calculation of the demand-to-capacity (D/C) ratio and associated LOS (Table 3.3-5), as per Caltrans standard. The traffic demand on a freeway segment is the number of vehicles passing through that segment during the peak hour. The capacity of a freeway segment is determined by multiplying the number of lanes in the segment by the capacity of each lane in the segment. The D/C ratio is determined by dividing the demand by capacity. Table 3.3-5 shows the correlations between D/C ratios and LOS for freeway main line segments.

Table 3.3-5. Level of Service Definitions for Freeway Main Line Segments

LOS	Demand/Capacity Ratio
A	0.00 - 0.35
B	>0.35 - 0.54
C	>0.54 - 0.77
D	>0.77 - 0.93
E	>0.93 - 1.00
F(0)	>1.00 - 1.25
F(1)	>1.25 - 1.35
F(2)	>1.35 - 1.45
F(3)	>1.45

Source: Appendix E of this EIR

Notes:
LOS=level of service

Traffic Impact Analysis

Traffic impacts were identified by determining the deterioration in the operations and performance of the study intersections and roadway segments due to the added traffic from the proposed project for two horizon years: 2031 and 2040. For the purposes of this EIR, the year 2031 corresponds to the "opening year," when construction of the elevated rail yard and passenger concourse are complete. This traffic impact analysis identifies potential project-generated traffic impacts on local streets and on the US-101 for the following six traffic scenarios (conditions):

1. Existing conditions (2016)
2. 2031 no project condition (existing conditions plus background traffic growth from 2016 to 2031)
3. 2040 no project condition (existing conditions plus background traffic growth from 2016 to 2040)
4. 2031 plus project construction condition (project-related traffic during concurrent construction of all major project elements including the lead tracks, above-grade passenger concourse with new expanded passageway, and run-through track infrastructure)
5. 2031 plus project condition (no build condition plus project-related traffic)
6. 2040 plus project condition (no build condition plus project-related traffic)

The "plus project" condition is compared to the "no project condition" to determine project-related traffic impacts in accordance with LADOT guidelines. The terminology used for the purposes of the traffic impact analysis is described below:

- The "no project condition" corresponds to the No Project Alternative includes projected growth forecasts that reflect traffic increases due to background growth in the region. Based on direction from LADOT, a 0.2 percent per year growth rate was applied to the 2016 (existing conditions) traffic volume to generate ambient traffic growth. The project-related traffic impacts are reported in this section in a comparative format with the no project condition for 2031 and 2040.
- The "plus project condition" corresponds to operation of the project, and includes projected growth forecasts that reflect the traffic under the no project condition plus expected traffic volume changes due to operation of the project in 2031 and 2040.
- The "plus project construction condition" corresponds to the timeframe when construction of the project with an above-grade passenger concourse with new expanded passageway is occurring. This scenario includes projected growth forecasts that reflect traffic under the no project condition plus expected traffic volume changes due to construction of the project. This analysis assumes that trucks would arrive and depart the construction site throughout the workday. For the proposed project, this analysis assumes that during the peak-hour of construction, 22 trucks would arrive or depart during the AM peak hour, and 8 trucks would arrive or depart during the PM peak hour.

The 2031 plus project and 2031 plus project construction scenarios identify the greatest potential for project-related traffic impacts associated with all major project components being constructed concurrently by 2031. Although early action/interim improvements (i.e., Phase A) may be implemented prior to 2031, this traffic impact evaluation is conservative, and addresses any potential traffic impacts associated with the interim condition because the detailed construction scenario prepared to support the environmental impact evaluation assumes all major project elements would be constructed concurrently. If run-through track infrastructure south of LAUS is constructed prior to the elevated rail yard and new passenger concourse (consistent with the project implementation approach in Section 2.0, Project Description), fewer construction related traffic impacts and associated truck trips are anticipated than reported herein because the greatest extent of potential impacts are addressed within this traffic analysis for both construction and operational scenarios.

Traffic Study Area Intersections

A traffic study area was developed (that expands beyond LAUS and the project study area) that covers all roads and intersections likely to be impacted by the project, including any early action/interim improvements. The traffic study area includes 32 intersections, and the project's direct impact on the local transportation network was assessed within the traffic study area.

Traffic counts were performed at 31 intersections by National Data and Surveying Services on September 9, 2015 and November 5, 2015. Two sets of counts were performed at Intersections 9 and 10 (the intersection of Alameda Street and El Monte Busway and the intersection of Alameda Street and Los

Angeles Street). Additional traffic counts at these two intersections were performed by National Data and Surveying Services on June 18, 2015 and November 19, 2015 in support of Metro's Link US Master Plan project. The second set of counts for these intersections are referred to as Intersections 109 and 110. The intersection at the Union Station North Driveway and Cesar Chavez Avenue was added during subsequent stages of the traffic impact analysis. Traffic counts at this intersection (Intersection 32) were conducted by Gibson Transportation Consulting, Inc. in August 2018, and were adjusted to reflect the full occupancy in the adjacent apartment buildings since they were partly unoccupied when the counts were conducted.

The traffic count data used in this traffic study is recent and reflective of current conditions. The counts conducted at the 32 intersections included average daily traffic (ADT) and intersection turn movements. Counts for vehicle classification, bicyclists, and pedestrians were also performed at the study intersections in the vicinity of the project. The traffic study intersections are listed below and depicted on Figure 3.3-1.

1. Alameda Street and Commercial Street
7. Garey Street and Commercial Street
8. Vignes Street and Commercial Street
9. Center Street and Commercial Street
10. Alameda Street and Temple Street
11. Vignes Street and Temple Street
12. Alameda Street and First Street
13. Vignes Street and First Street
14. Alameda Street and El Monte Busway (westbound)/Arcadia Street
15. Alameda Street and Los Angeles Street (westbound)
16. Alameda Street and Cesar Chavez Avenue
17. Alameda Street and Vignes Street/Alpine Street
18. Vignes Street and Cesar Chavez Avenue
19. Vignes Street and Ramirez Street
20. Vignes Street and Main Street
21. Alameda Street/Spring Street and College Street
22. Alameda Street and Main Street/Ord Street
23. Alameda Street and Main Street/Bauchet Street
24. Main Street and Cesar Chavez Avenue
25. Alameda Street at Northbound US-101 northbound on-ramp
26. Los Angeles Street and Arcadia Street

27. Los Angeles Street and Aliso Street
28. Los Angeles Street and Temple Street
29. Los Angeles Street and First Street
30. Judge John Aiso Street and Temple Street
31. Judge John Aiso Street/San Pedro Street and First Street
32. Mission Road and Cesar Chavez Avenue
33. Mission Road and First Street
34. Central Avenue and First Street
35. Vignes Street and Bauchet Street
36. Ramirez Street and Center Street
37. Cesar Chavez Avenue and Union Station North Driveway
109. Alameda Street and El Monte Busway (eastbound)
110. Alameda Street and Los Angeles Street (eastbound)

In addition, to document the 24-hour directional ADT, automatic counts were conducted at the following 12 locations:

1. Alameda Street north of Commercial Street
38. Hewitt Street south of Commercial Street
39. Commercial Street west of Garey Street
40. Garey Street south of Commercial Street
41. Commercial Street east of Garey Street
42. Vignes Street south of Commercial Street
43. Ducommun Street between Vignes Street and Center Street
44. Jackson Street between Vignes Street and Center Street
45. Temple Street between Vignes Street and Center Street
46. Center Street north of Commercial Street
47. Center Street south of Commercial Street
48. Cesar Chavez Avenue east of Alameda Street

Senate Bill 743 - Vehicles Miles Traveled

As discussed in the Traffic Impact Assessment (Appendix E of this EIR), the City of Los Angeles is in the process of developing methodologies and criteria for implementing VMT analyses for new development projects, which are anticipated to be adopted and in effect by January 2019. In anticipation of an adopted local policy, the proposed project was compared to the goals of Senate Bill (SB) 743. As the proposed project predominantly involves rail and passenger capacity improvements that would enhance regional accessibility to and through LAUS, the proposed project would increase transit ridership and reduce regional VMT; therefore, the proposed project would achieve the goals of SB 743.

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Figure 3.3-1.Traffic Study Area and Intersection Locations

Source: Appendix E of this EIR

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3.3.4 Existing Conditions

This section describes key roadway segments and intersections, reports existing daily roadway and peak-hour intersection traffic volume information, and presents the LOS analysis for existing conditions.

Existing Roadways

The primary street network in the traffic study area is described below.

East-West Roadways

Cesar Chavez Avenue is a major arterial north of LAUS with two through-lanes in each direction east of Alameda Street and three through lanes in each direction west of Alameda Street. It has one left-turn pocket at all major connecting intersections (Cesar Chavez Avenue intersects with the major streets Alameda Street and Vignes Street). Cesar Chavez Avenue crosses the Los Angeles River via a bridge. North of Cesar Chavez Avenue, there are no river-crossing east-west roadways until Main Street, which is 0.8 mile away. Cesar Chavez Avenue crosses underneath the northern section of the rail yard at LAUS. No on-street parking is allowed on Cesar Chavez Avenue.

El Monte Busway runs just north of US-101 and abuts the south side of LAUS. It connects to both US-101 and I-10 and terminates with on- and off-ramps at Alameda Street. The El Monte Busway off-ramp also provides exits for westbound traffic from US-101. The on-ramp can be used only by buses and vehicles with a FasTrak transponder (carpools of three or more can use the busway free of charge).

US-101 is the closest freeway to the project. In general, it has a north–south orientation; however, it runs east-west through the traffic study area, with four lanes in each direction. There are two sets of southbound on- and off-ramps in the traffic study area. The first set of southbound on- and off-ramps are the recently completed reconfiguration of the US-101/Commercial Street ramp, located at the intersection of Commercial Street and Garey Street. The other set of southbound on- and off-ramps are located to the west of the project, at the intersection of Los Angeles Street and Aliso Street. With respect to the northbound on- and off-ramps, there are three on-ramps and two off-ramp locations. A set of northbound on- and off-ramps are located at Vignes Street, south of Ramirez Street. The other two on-ramps are located on Los Angeles Street and Alameda Street, respectively.

Arcadia Street is one half of a one-way street coupled with Aliso Street. Arcadia Street is aligned as the westbound extension of the El Monte Busway; it distributes US-101 traffic to Downtown through Los Angeles Street, Main Street, Spring Street, Broadway, and Hill Street. Aliso Street terminates at North Broadway.

Aliso Street is one half of a one-way street coupled with Arcadia Street. Aliso Street runs eastbound, merging into Commercial Street and terminating at its intersection with Alameda Street/Commercial Street. Aliso Street is located south of US-101 and operates as the frontage road for on- and off-ramp traffic collection and distribution through local streets that connect to Downtown, such as Los Angeles Street, Main Street, Spring Street, Broadway, and Hill Street.

Commercial Street, a two–way street, runs south of LAUS. West of Garey Street and the US-101 ramps, Commercial Street is classified as a major collector and has two through lanes in each direction. Commercial Street becomes Aliso Street west of Alameda Street. East of Garey Street and the US-101 ramps, Commercial Street narrows to one through-lane in each direction. Commercial Street serves as an on- and off–ramp for the US-101 and intersects with the major streets - Alameda Street and Center Street. No on-street parking is allowed on Commercial Street.

Temple Street is a major arterial and has two through lanes in each direction west of Alameda Street, but narrows down to one through lane in each direction east of Alameda Street. Temple Street terminates at the railroad yard by the Los Angeles River.

First Street is a major arterial with two through lanes in each direction and intersects with Alameda Street. The Metro Gold Line operates in the median of First Street. No on-street parking is allowed on First Street.

North-South Roadways

Because both US-101 and the El Monte Busway traverse the traffic study area in an east–west orientation, only a limited number of north-south oriented roadways are able to provide north-south access through overcrossing or undercrossing bridges. For example, San Pedro Street, Central Avenue, and Garey Street terminate south of US-101. Vignes Street terminates on either side of US-101.

Alameda Street is a major arterial bordering the west side of LAUS. It has three through lanes and a left-turn pocket in each direction. It intersects with Cesar Chavez Avenue, LAUS, a northbound US-101 on-ramp, the US-101/Arcadia Street off-ramp, Aliso Street, Commercial Street, Temple Street, and First Street. Further north, Alameda Street becomes Spring Street and curves northeast towards the Lincoln Heights community. No on-street parking is allowed on Alameda Street within the traffic study area.

Los Angeles Street is a major arterial west of Alameda Street with two through lanes and one left-turn pocket in each direction. It has interchanges with both US-101 northbound and southbound, and also intersects with First Street and with Alameda Street at LAUS. No on-street parking is allowed on Los Angeles Street.

Center Street/Ramirez Street is a major arterial that runs east of LAUS with one through lane in each direction. Center Street intersects with Commercial Street. North of Commercial Street, Center Street becomes Ramirez Street and then joins Vignes Street at LAUS. On-street parking is allowed on Center Street, south of Commercial Street.

Vignes Street provides access to LAUS and terminates as on- and off–ramps to US-101. It then resumes as a major collector at Commercial Street, south of US-101, to beyond First Street.

Mission Road is the first arterial east of the Los Angeles River that connects the communities east of the Los Angeles River to LAUS via Cesar Chavez Avenue.

Existing Traffic Volumes and Operating Conditions

Arterial Average Daily Traffic

Alameda Street: The ADT shows 32,542 vehicles travelling daily on Alameda Street, north of Commercial Street, comprised of a northbound volume of 17,107 vehicles and a southbound volume of 15,435 vehicles. It should be noted that there is a significant difference between the AM and PM periods, with the AM period (12 midnight to 12 noon) having a volume of 13,760 (42.3 percent ADT) vehicles and the PM period having a volume of 18,782 (57.7 percent ADT) vehicles.

Commercial Street: The ADT for Commercial Street, west of Garey Street, total is 11,841 vehicles, of which the eastbound ADT is 6,319 vehicles and the westbound ADT is 5,522 vehicles. The ADT shows 8,427 vehicles on Commercial Street, east of Garey Street, comprised of 4,077 vehicles heading eastbound and 4,350 vehicles heading westbound. Garey Street, south of Commercial Street, has an ADT of 2,993 vehicles, consisting of 2,084 vehicles heading northbound and 909 vehicles heading southbound. The reduction on Commercial Street from 11,841 vehicles west of Garey Street to 8,427 vehicles east of Garey Street indicates that many motorists who use Commercial Street turn at the US-101 "eastbound" (US-101 southbound) on-ramp or onto Garey Street.

Hewitt Street: The ADT on the north-south oriented Hewitt Street, between Commercial Street and Ducommun Street, is 1,463 vehicles, of which the northbound ADT is 642 vehicles and the southbound ADT is 821 vehicles. It is likely that Hewitt Street is used by motorists to avoid heavier traffic volumes at the intersection of Commercial Street and Garey Street.

Center Street: The ADT north of Commercial Street is 11,985 vehicles, which consists of 6,916 vehicles northbound and 5,069 vehicles southbound. The ADT shows 15,636 vehicles south of Commercial Street, comprised of 7,595 vehicles northbound and 8,041 vehicles southbound. The reduction from an ADT of 15,636 vehicles south of Commercial Street to an ADT of 11,985 vehicles north of Commercial Street indicates that Commercial Street is accessed by motorists from Center Street.

Vignes Street: The ADT on Vignes Street between Ducommun Street and Commercial Street is 3,404 vehicles, which consists of 2,026 vehicles northbound and 1,378 vehicles southbound. This segment is likely used by motorists as an alternative route to Center Street or Garey Street.

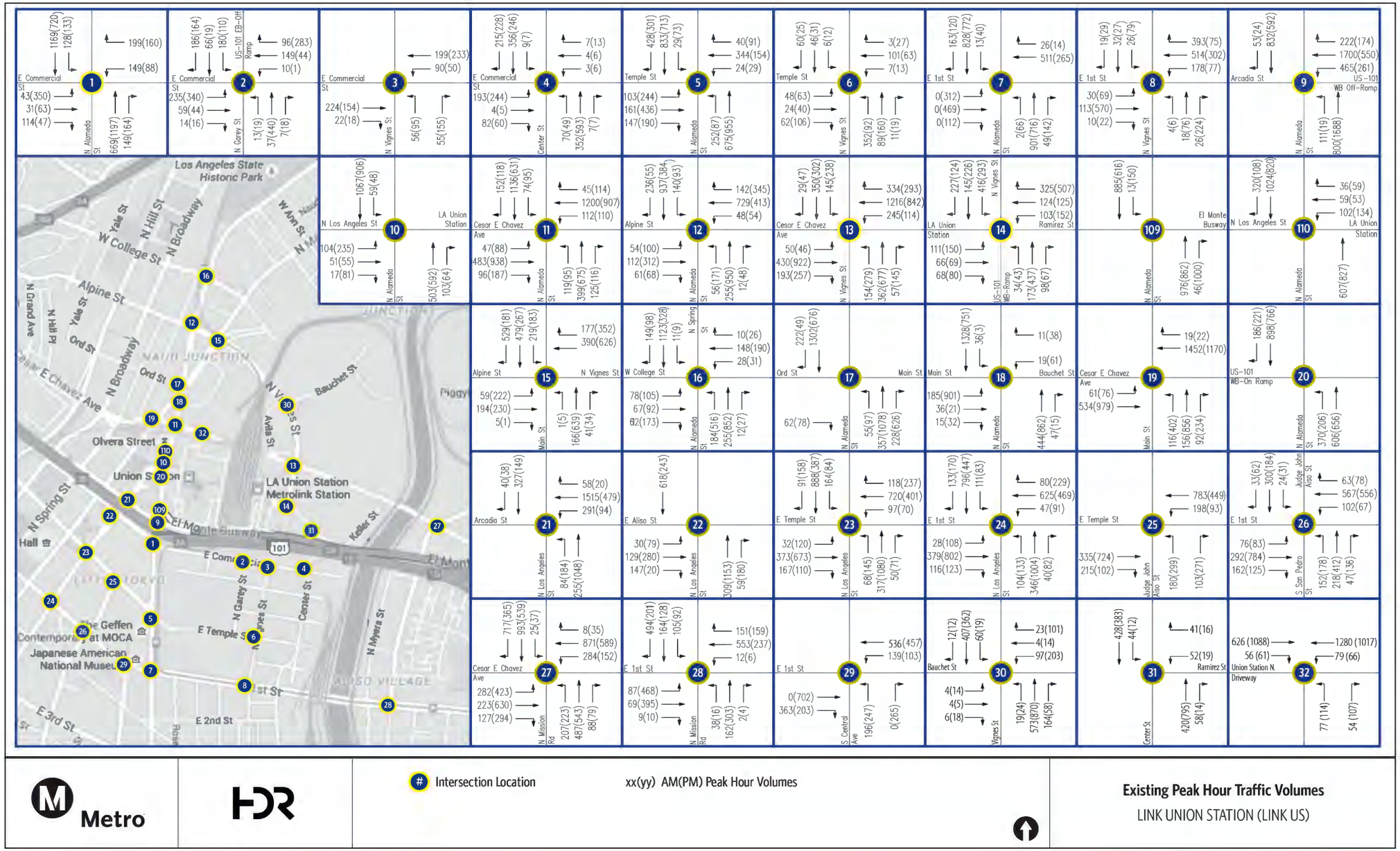
Temple, Jackson, and Ducommun Streets: Roadway segments along Temple, Jackson, and Ducommun Streets, between Vignes Street and Center Street, have an ADT of 1,176 vehicles on Temple Street, 232 vehicles on Jackson Street, and 317 vehicles on Ducommun Street. These low traffic volumes indicate that these segments serve as minor streets in the local roadway network.

Cesar Chavez Avenue: ADT on Cesar Chavez Avenue totals 26,094 vehicles east of Alameda Street, comprised of an ADT of 11,981 vehicles eastbound and an ADT of 14,113 vehicles westbound, which is a 45 percent to 55 percent split.

Existing Peak-Hour Traffic Volumes

Figure 3.3-2 depicts the AM and PM peak-hour intersection turn movements. The existing peak-hour volumes depicted on Figure 3.3-2 were balanced between adjacent intersections and adjusted accordingly.

Figure 3.3-2. Existing Peak Hour Traffic Volumes



Source: Appendix E of this EIR

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Vehicle Classification and Truck Percentages

Vehicle classification counts were conducted through both ADT (automatic counts dated September 9, 2015 and September 17, 2015) and intersection turn movement counts (manual counts dated June 18, 2015, September 9, 2015, November 5, 2015, and November 19, 2015). Manual counts were used to ensure accuracy, particularly for identifying the number of axles on a truck during AM and PM peak hours. ADT counts were used for their ability to cover a 24–hour period.

Vehicle classification counts were conducted at all the intersections in the traffic study area. The following four intersections are in the direct vicinity of the project and were also included in the automatic counts for ADT on Alameda Street south of Commercial Street:

- Intersection #1: Alameda Street and Commercial Street
- Intersection #2: Garey Street/US-101 southbound ramps at Commercial Street
- Intersection #3: Vignes Street at Commercial Street
- Intersection #4: Center Street and Commercial Street

Vehicles classified include cars, trucks, buses, and two-axle trucks. The two-axle truck and bus percentages of the four intersections during AM and PM peak hours are depicted in Table 3.3-6. Additional information, including turn movements and ADT truck and bus percentages, is provided in the Traffic Impact Assessment (Appendix E of this EIR).

Table 3.3-6. Vehicle Classification on Commercial Street		
Peak Period	**Car (percent)**	**Truck and Bus (percent)**
AM Peak		
At Alameda Street	92	8
At Garey Street/US-101 southbound ramp	89.6	10.4
At Vignes Street	91	9
At Center Street	84.6	15.4
PM Peak		
At Alameda Street	95.3	4.7
At Garey Street/US-101 southbound ramp	96.5	3.5
At Vignes Street	89.2	10.8
At Center Street	89.9	10.1

Source: Appendix E of this EIR

During both AM and PM peak hours, the combined truck and bus percentages on Commercial Street are generally less than 10 percent. An exception is the intersection at Garey Street/US-101 southbound ramp in the AM peak hour (Intersection #2), the intersection at Vignes Street in the PM peak hour (Intersection #3), and the Center Street/Commercial Street intersection (Intersection #4), where the truck percentage is higher than 10 percent during both AM and PM peak hours.

Existing Intersection Level of Service

Table 3.3-7 summarizes the existing LOS during the AM and PM peak hours for the intersections analyzed. As depicted in Table 3.3-7, all study intersections operate at acceptable LOS D or better, during both AM and PM peak hours.

Table 3.3-7. Existing Peak Hour Intersection Level of Service

Intersection	Intersection	AM Peak			PM Peak		
		Delay (second)	V/C	LOS	Delay (second)	V/C	LOS
1	Alameda Street and Commercial Street	29.9	0.56	C	33.9	0.84	C
2	Garey Street and Commercial Street	31.4	0.38	C	34.2	0.47	C
3	Vignes Street and Commercial Street[a]	9.6	0.37	A	9.9	0.39	A
4	Center Street and Commercial Street[a]	16.0	0.68	C	33.0	1.00	D
5	Alameda Street and Temple Street	13.9	0.65	B	15.4	0.71	B
6	Vignes Street and Temple Street	14.5	0.69	B	9.7	0.40	A
7	Alameda Street and First Street	17.8	0.53	B	17.3	0.59	B
8	Vignes Street and First Street	21.7	0.49	C	27.4	0.56	C
9	Alameda Street and El Monte Busway/Arcadia Street	19.5	0.83	B	14.5	0.60	B
10	Alameda Street and Los Angeles Street WB	12.4	0.31	B	12.7	0.33	B
110	Alameda Street and Los Angeles Street EB	4.2	0.33	A	5.6	0.29	A
11	Alameda Street and Cesar Chavez Avenue	15.3	0.74	B	14.9	0.67	B
12	Alameda Street and Vignes Street/Alpine Street	11.8	0.56	B	14.1	0.60	B
13	Vignes Street and Cesar Chavez Avenue	19.0	0.75	B	20.4	0.85	C
14	Vignes Street and Ramirez Street	23.4	0.41	C	25.9	0.51	C
15	Vignes Street and Main Street	17.5	0.57	B	41.9	0.97	D
16	Alameda Street/Spring Street and College Street	16.0	0.59	B	17.0	0.68	B
17	Alameda Street and Main Street/Ord Street[a]	0.6	0.33	A	0.7	0.40	A
18	Alameda Street and Main Street/Bauchet Street	5.7	0.40	A	8.8	0.56	A
19	Main Street and Cesar Chavez Avenue	7.6	0.42	A	19.0	0.62	B
20	Alameda Street and Northbound US-101[b]	—	—	—	—	—	—

Table 3.3-7. Existing Peak Hour Intersection Level of Service

Intersection	Intersection	AM Peak			PM Peak		
		Delay (second)	V/C	LOS	Delay (second)	V/C	LOS
21	Los Angeles Street and Arcadia Street	7.2	0.57	A	5.1	0.50	A
22	Los Angeles Street and Aliso Street	9.4	0.29	A	11.3	0.59	B
23	Los Angeles Street and Temple Street	15.0	0.59	B	16.5	0.70	B
24	Los Angeles Street and First Street	14.8	0.53	B	19.4	0.80	B
25	Judge John Aiso Street and Temple Street	8.2	0.38	A	7.9	0.41	A
26	Judge John Aiso Street/San Pedro Street and First Street	15.6	0.42	B	15.0	0.63	B
27	Mission Road and Cesar Chavez Avenue	46.4	1.08	D	23.9	0.85	C
28	Mission Road and First Street	28.3	0.77	C	31.1	0.83	C
29	Central Avenue and First Street	8.9	0.32	A	11.0	0.48	B
30	Vignes Street and Bauchet Street	10.7	0.28	B	19.1	0.48	B
31	Ramirez Street and Center Street	1.8	0.19	A	0.6	0.34	A
32	Union Station North Driveway and Cesar Chavez Avenue	13.5	0.53	B	14.2	0.50	B

Source: Appendix E of this EIR

Notes:
[a] ***Non-signalized intersection***
[b] ***Freeway on-ramp, neither signalized nor STOP-sign controlled***

EB=eastbound; LOS=level of service; V/C=volume to capacity; WB=westbound

Existing Volumes and Traffic Conditions on US-101

For consistency with the 2010 Congestion Management Program (CMP), freeway traffic data from the 2010 CMP was utilized for this analysis to assess the existing operating conditions on US-101, north of Vignes Street (post mile [PM] 0.46). D/C ratios were estimated assuming a capacity of 2,000 vehicles per hour per lane. As depicted in Table 3.3-8, this freeway segment operates at an unacceptable LOS of LOS E or worse, during both AM and PM peak hours.

Table 3.3-8. Existing Freeway Main Line Level of Service

Freeway Analysis Location	Peak	Northbound				Southbound			
		Demand	Capacity	D/C	LOS	Demand	Capacity	D/C	LOS
US-101 North of Vignes St (PM 0.45)	AM	10,900	8,000	1.36	F(2)	7,500	8,000	0.94	E
	PM	10,800	8,000	1.35	F(1)	11,000	8,000	1.38	F(2)

Source: Appendix E of this EIR

Notes:
D/C=demand-to-capacity; LOS=level of service; PM=Post Mile

Public Transit

The study area is currently served by an extensive transit system including bus, rail, and high-occupancy vehicle facilities. The project is situated in and around the Patsaouras Transit Plaza, which is a major hub of transit activity in Downtown Los Angeles. Numerous bus routes start, stop, or terminate at the Patsaouras Transit Plaza, currently located on the east side of LAUS. These include long-haul, express, and local municipal buses provided by LADOT, Metro, and other agencies. Buses include the Los Angeles International Airport FlyAway provided by Los Angeles World Airports with scheduled ground transportation between Los Angeles International Airport and LAUS. Express buses are provided by Orange County Transportation Authority, Foothill Transit, LADOT, and other surrounding agencies. Local buses include LADOT Downtown Area Short Hop and other local service providers. Along with bus routes, the Patsaouras Transit Plaza provides connection to Metro Red and Purple Lines, Gold Line, Metrolink, and Amtrak trains.

On weekdays, approximately 1,046 buses are dispatched from the Patsaouras Transit Plaza. On Saturdays and Sundays, approximately 556 and 655 buses are dispatched, respectively. In a week, a total of 6,441 buses are dispatched. Under the estimation that each bus carries approximately 30 passengers, the Patsaouras Transit Plaza accommodates approximately 190,000 individual trips per week, approximately 31,000 individual trips per weekday, and approximately 17,000 individual trips per weekend, which as a whole, reduces the number of motorists using roadways in the project vicinity.

In the traffic study area, LADOT Downtown Area Short Hop Route D is the only bus route using Center Street. Other Downtown Area Short Hop bus routes that traverse the project study area include Routes A and B. Bus schedule and detailed information is provided in the Traffic Impact Assessment (Appendix E of this EIR). Additionally, El Monte Busway is a shared used bus corridor and high-occupancy vehicle lane, which travels west along the US-101.

Amtrak

As of April 2016, Amtrak operates 28 revenue trains per weekday into and out of LAUS, which includes 13 Pacific Surfliner trains originating or terminating at LAUS; 10 Pacific Surfliner "through trains" that travel

the entire extent of the Pacific Surfliner route (LOSSAN corridor) north and south of LAUS (counted as 10 total trains); and an average of 5 long-distance trains including the Coast Starlight (2 trains daily), the Southwest Chief (2 trains daily), and the Texas Eagle/Sunset Limited, which is a combined train that operates 3 times per week. Amtrak/LOSSAN also operate 11 non-revenue trains between LAUS and Amtrak's Los Angeles Maintenance Facility (6 Pacific Surfliner and 5 Amtrak long-distance trains). During the two 3-hour AM and PM peak operating periods (AM and PM combined), 12 (6 in the AM and 6 in the PM) Amtrak/LOSSAN revenue and non-revenue train movements pass through LAUS.

Metrolink

SCRRA or Metrolink is a joint powers authority established in 1991 to plan, design, build, and operate passenger rail service in the Southern California region. Metrolink provides regional passenger rail service in Los Angeles, Riverside, San Bernardino, and Ventura counties and the City of Oceanside in San Diego County. LAUS is the hub for Metrolink regional rail operations and provides connections between six of Metrolink's seven lines that connect at LAUS:

- 91/Perris Valley Line
- Antelope Valley Line
- Orange County Line
- Riverside Line
- San Bernardino Line
- Ventura County Line

As of April 2016, Metrolink operates 139 revenue trains per weekday into and out of LAUS on several train lines, including the Ventura County Line (31 trains per weekday), Antelope Valley Line (30), San Bernardino Line (38), Riverside Line (12), 91/Perris Valley Line (9), and Orange County Line (19). Metrolink also operates 46 non-revenue trains between LAUS and the CMF. During the 3 hour peak period, 80 Metrolink trains (39 in the AM and 41 in the PM) pass through LAUS.

Pedestrians and Bicyclists

Within the traffic study area, there are three existing bicycle lane facilities:

1. A buffered bicycle lane along Los Angeles Street, from Alameda Street to East First Street
2. A buffered bicycle lane along Main Street, from Cesar Chavez Avenue to East 16th Street
3. A buffered bicycle lane along Third Street, from San Pedro Street to Santa Fe Avenue

The traffic study area intersections currently experience a high number of pedestrian and bicyclist activity during both AM and PM peak hours. As part of the traffic study, pedestrian and bicyclist counts were collected and included in the intersection analysis, as applicable. Pedestrian and bicyclist activity was observed at each study intersection while conducting manual counts during AM and PM peak periods for the following intersections.

- Alameda Street/Commercial Street – The amount of pedestrian activity was notably high on each crosswalk of the intersection during both AM and PM peak hours. During the AM peak hours, the number of pedestrians ranged from 0 to 224, with the south leg having the highest volume. During the PM peak hours, the counts for each movement ranged from 0 to 144 pedestrians, with the south leg again having the highest volume. Bicyclists were observed at this intersection and counts were similar for both AM and PM peak hours; the counts for each movement ranged from 0 to 9 bicyclists.
- Garey Street/Commercial Street – There were few pedestrians during both AM and PM peak hours. Of the observed pedestrians, only the south leg had volumes ranging from 7 to 15 pedestrians during the morning and evening peak periods. Bicyclists were observed at each approach for morning and evening peak hours; however, only one bicyclist was observed at the westbound approach.
- Center Street/Commercial Street – The amount of pedestrian activity was low on all legs, for morning and evening peak hours. The pedestrian counts for all the legs that have crosswalks included 11 pedestrians during the morning peak hour and 28 pedestrians during the evening peak hour. Bicyclists were observed at this intersection and numbers were similar during morning and evening peak hours; the counts for each movement ranged from 5 to 26 bicyclists.

The above pedestrian and bicyclist volumes demonstrate that the intersection of Alameda Street and Commercial Street experiences higher pedestrian and bicyclist volumes and is used during AM and PM peak hours. Pedestrian and bicyclist count data is provided in the Traffic Impact Assessment (Appendix E of this EIR).

Parking

Existing on-street parking in the traffic study area was inventoried in September 2014 and is presented herein for informational purposes. CEQA does not require an evaluation of parking impacts. As shown in Table 3.3-9, a total of 274 general spaces and 12 loading spaces were identified. Most parking within the traffic study area is metered (242 spaces are metered and 8 are open space parking). The meters and 10-hour parking limit are effective weekdays between 6:00 AM and 4:00. In addition to the existing parking spaces shown in Table 3.3-9, on-street parking is also located on Bolero Lane, Leroy Street, and Bloom Street, which primarily serves the residents of the William Mead Homes.

Table 3.3-9. Existing On-Street Parking

Location	Existing Parking Spaces		
	Metered	Open	Loading
Commercial Street (between Alameda Street and east of Center Street)	7	0	3
Ducommun Street (between Alameda Street and east of Center Street)	79	8	2
Jackson Street (between Alameda Street and east of Center Street)	32	0	0
Temple Street (between Alameda Street and east of Center Street)	19	0	5
Hewitt Street (between Commercial Street and Ducommun Street)	14	0	0
Garey Street (between Commercial Street and Temple Street)	27	0	0
Vignes Street (between Commercial Street and First Street)	51	0	2
Center Street (between Commercial Street and Temple Street)	13	0	0
Bolero Lane (between Bloom Street and Leroy Street)	0	24	0
Total	242	32	12

Source: Appendix E of this EIR

3.3.5 Environmental Impacts

Thresholds of Significance

The proposed project would result in a significant impact on transportation facilities if they would:

A. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

B. Conflict with an applicable CMP, including, but not limited to, LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

D. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

E. Result in inadequate emergency access

F. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Each of these thresholds are analyzed in detail below.

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project:

B. *CMP* – Based on the project-related trip assignments identified in the traffic impact assessment, the project-related traffic would not exceed the arterial intersection analysis threshold or the freeway analysis threshold at the nearest monitoring locations or at any location (Appendix E of this EIR). Since traffic during either AM or PM peak hours is projected to be less than the minimum threshold of 50 vehicles per hour for arterial intersections and 150 vehicles per hour for freeway locations, no further analysis of CMP arterial monitoring intersections or freeway monitoring locations is required. Therefore, no significant impact would occur.

C. *Air Traffic Patterns* – The project would not include the construction of any structural facilities that would create a runway hazard. Likewise, the project does not include expansion of airport facilities or increase air traffic. The project would not require a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, no significant impact would occur.

Analysis

THRESHOLD 3.3-A	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

Direct Impacts – Construction

Construction of the project would require a large number of construction workers, the import and export of materials and equipment, and the localized movement of equipment to and from multiple locations within the traffic study area. The additional traffic generated during construction would consist of construction equipment, construction employee vehicles, and construction material deliveries in trucks. A detailed construction scenario was prepared for the project to identify AM and PM peak hour traffic estimates.

As previously discussed, construction of early action/interim improvements may be implemented in advance of 2031. This traffic impact evaluation adequately addresses any potential traffic impacts associated with the interim condition because the construction scenario assumes all major project elements would be constructed concurrently. If run-through track infrastructure is implemented prior to construction of the elevated rail yard and new passenger concourse, less construction related traffic would be required to complete construction of the early action/interim improvements than if all infrastructure were constructed together as evaluated in the Traffic Impact Assessment.

Construction Detours and Local Street Closures

Construction of the project would occur in multiple phases and stages. Staging activities would be distributed at up to nine different locations within the traffic study area based on parcel availability. The anticipated location of construction detours and street closures are depicted on Figure 3.3-3 and discussed below in the context of the three primary project segments.

- Segment 1: Throat Segment – The Vignes Street Bridge would be reconstructed in two portions, the westerly and easterly portions, resulting in closure of Vignes Street during the reconstruction of either the easterly or westerly portion. During this duration, traffic along Vignes Street would have to be rerouted along Cesar Chavez Avenue and Alameda Street. These construction impacts would require a detailed traffic management plan (TMP) to be prepared to identify site-specific mitigation for localized traffic impacts.
- Segment 2: Concourse Segment – Closure of Cesar Chavez Avenue is required during demolition of the existing bridge. During this closure, traffic along Cesar Chavez Avenue would be rerouted along Vignes Street and Alameda Street. These construction impacts would require a detailed TMP to be prepared to identify site-specific mitigation for localized traffic impacts.
- Segment 3: Run-Through Segment – All existing traffic lanes along the El Monte Busway and US-101 would be maintained during the peak hour throughout construction of run-through track infrastructure. Short term overnight closures of the busway, freeway, and the southbound ramps at Commercial Street would be necessary to erect and dismantle falsework during construction of the US-101 viaduct. Access to southbound US-101 from Commercial Street may be either partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off-ramps. The local street reconstruction south of US-101 would require the full closure of existing Commercial Street, between Garey and Vignes Streets, for an extended period to construct the new Commercial Street alignment. After the new alignment is constructed, the roadway would be opened to traffic, and the existing roadway between Garey and Center Streets would be removed. The reconstruction of Center Street between US-101 and Ducommun Street could be completed in halves, such that one lane in each direction is continuously maintained. The construction of run-through track infrastructure over Center Street may require short-term overnight or weekend closures of the roadway.

Figure 3.3-3. Construction Detours and Street Closures

Source: Appendix E of this EIR

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Study Intersections - 2031 plus Project Construction

Project-related construction activities are estimated to generate 643 daily trips (in passenger car equivalent). Table 3.3-10 summarizes peak hour LOS for traffic impact assessment intersections impacted in the 2031 plus project construction condition.

As shown in Table 3.3-10, in the 2031 plus project construction condition, significant delays would occur at the following three intersections per LADOT guidelines:

- Intersection #2: Garey Street and Commercial Street (LOS E - AM peak hour, LOS D – PM peak hour)
- Intersection #10: Alameda Street and Los Angeles Street (WB) (LOS C - PM peak hour)
- Intersection #15: Vignes Street and Main Street (LOS E - PM peak hour)

Based on the anticipated construction-related traffic delays, impacts are considered significant. Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to reduce impacts to a level less than significant.

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Table 3.3-10. Peak Hour Level of Service for Impacted Intersections – 2031 with Project Construction

Intersection	Intersection	AM Peak						PM Peak					
		2031 (No Project)		2031 (with Project Construction)		Delta Delay (second)	Significant Impact?	2031 (No Project)		2031 (with Project Construction)		Delta Delay (second)	Significant Impact?
		Delay (second)	LOS	Delay (second)	LOS			Delay (second)	LOS	Delay (second)	LOS		
2	Garey Street and Commercial Street	31.3	C	63.5	E	32.2	Yes	34.1	C	38.2	D	4.1	Yes
10	Alameda Street and Los Angeles Street WB	12.1	B	12.7	B	0.6	No	12.4	B	31.0	C	18.6	Yes
15	Vignes Street and Main Street	27.2	C	23.9	C	-3.3	No	74.6	E	78.9	E	4.3	Yes

Source: Appendix E of this EIR

Notes:
2031 plus construction peak hour LOS for all other intersections are provided in the Traffic Impact Assessment (Appendix E of this EIR).

LOS=level of service; WB=westbound

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US-101 Main Line

Construction activities would generate additional construction traffic on US-101 and result in temporary closure of portions of US-101. US-101 would be closed temporarily during the night (10:00 PM to 6:00 AM) in one direction at a time during construction of the bridge superstructure. These night closures are expected to last up to 20-consecutive days. The southbound ramps at Commercial Street may be either partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off-ramps. The project would not increase the traffic demand by more than 2 percent of the capacity (Appendix E, Table 8-7); therefore, impacts are considered less than significant. However as discussed below under Threshold 3.3-D, due to the required closures and potential for other hazardous situations associated with the freeway closures along the US 101, Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to maintain capacity along the US-101 during construction to the maximum extent practicable.

Direct Impacts – Operations

Project Trip Generation

Project-related operational traffic is based on the trip generation assumptions approved by LADOT. The trip generation methodology is made up of the following:

1. Growth in background traffic due to increased non-project related activity at LAUS – The first element of the trip generation methodology takes into consideration non-project related background traffic that would already be in place if the project were not implemented. With a background traffic growth rate of 0.2 percent per year, a 4.8 growth in traffic levels is anticipated between 2016 and 2040; thereby resulting in an additional 78 trips that are anticipated to come in and out of LAUS in the AM peak hour, and 79 additional trips that would come in and out in the PM peak hour. These trips are background traffic through the traffic study area intersections because they are related to the increased non project-related activities that would occur in the future.

2. Traffic growth due to new retail and office/commercial square footage – The proposed project includes up to 160,000 square feet of transit-oriented retail space and approximately 30,400 square feet of office/commercial space within the new passenger concourse. Based on the Memorandum of Understanding (MOU) submitted to and approved by LADOT, 80 percent of trips generated by proposed retail and office/commercial square footage are assumed to be transit trips, with the remaining 20 percent assumed to be non-transit trips. This is a moderately conservative assumption based on 2011 surveys done by Metro on traveler's mode of transportation. Project-related traffic is anticipated to occur from vendors, deliveries, and employees serving the retail and office/commercial space. The scale and size of the proposed retail and office space within the new passenger concourse at LAUS are based on a 2016 market study conducted for Metro. The market study (Appendix E of this EIR) indicated that up to 189,800 square feet of retail and commercial space could be supported by the transit passengers coming through LAUS; it further identified the types of retail and commercial uses that could be supported without generating

outside visitors who could result in additional vehicular traffic to and from LAUS. Therefore, all customers using the proposed 160,000 square feet of retail space and 30,400 square feet of office/commercial space are assumed to be traveling to and from LAUS using bus or transit, and their trips would not be made by automobiles. The employees in the retail and office/commercial space would arrive by automobile, but customers would be transit passengers coming to and from LAUS. The 80 percent transit mode split for the employees in the retail and office/commercial space is a reasonable assumption for the project, given the results of the 2016 market study and the mode split surveys conducted at LAUS as discussed below.

The addition of approximately 160,000 square feet of transit-oriented retail space and approximately 30,400 square feet of office/commercial space within the new passenger concourse would result in a total project-generated daily traffic estimate of 1,428 trips per day.

3. Traffic growth due to project-related capacity enhancements/increased ridership – In 2011, Metro conducted a system wide on-board survey of passengers at LAUS to determine the mode splits of the ridership. A total of 20,200 passengers in the AM peak period, 24,400 passengers in the midday peak period and 26,600 passengers in the PM peak period were surveyed. The results of the survey indicate the vast majority of passengers did not use an automobile to and from LAUS because 93-97 percent of the AM trips, 94-90 percent of the midday trips, and 94-95 percent of the PM trips in and out of LAUS consist of riders that transfer from one form of transit to another. The remaining 10 percent of trips in and out of the LAUS consist of passengers walking. This indicates that the majority of passengers that arrive at LAUS transfer from one mode of transit to another. Therefore, the vehicular trips generated due to the increased ridership resulting from project-related capacity enhancements at LAUS are negligible.

Existing plus Project

Based on the significant impact criteria as per LADOT's transportation impact study guidelines (Table 3.3-4), the project related impacts and deterioration in the operational performance of study intersections due to the added delay are measured by the difference in delay between the with project and the 'no project' conditions during the "opening year" of a project. Because the project related traffic would be generated only after the project is constructed and fully operational, the 'baseline' conditions is during the "opening year" of a project and not the "existing year." The existing year is not the baseline since the project would not be built and operational during the existing year. The traffic counts were conducted in 2015 and were used to estimate the baseline volumes for the opening year by adding annual growth rate and traffic from the other planned projects located in the vicinity of the proposed project to the traffic counts.

In order to fulfill the existing plus project condition as part of the traffic impact analysis of the project, the LOS analysis for all study intersections for the existing plus project scenario was included in the Traffic Impact Assessment (Appendix E of this EIR). As shown in Table 3.3-11, in the existing plus project condition, significant impacts would occur at two intersections due to project-related increase in traffic delays that would exceed LADOT guidelines (Table 3.3-4):

- Intersection #2: Garey Street and Commercial Street (LOS E – AM peak hour, LOS E – PM peak hour) – The project would result in an increased delay of 26.3 seconds during the AM peak hour and 25.5 seconds during the PM peak hour.
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour) - The project would result in an increased delay of 56.5 seconds during the AM peak hour and 112.3 seconds during the PM peak hour.

The results of the analysis for the existing plus project condition would not result in any new significant impacts or substantially greater project related impacts as those identified utilizing LADOT's transportation impact study guidelines and the opening year of the project as the analysis baseline (see analysis below for the 2031 with project conditions).

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Table 3.3-11. Peak Hour Level of Service for Impacted Intersections – Existing plus Project

Intersection	AM Peak						PM Peak					
	Existing		Existing plus Project		Delta	Significant Impact?	Existing		Existing plus Project		Delta	Significant Impact?
	Delay (second)	LOS	Delay (second)	LOS	Delay (second)		Delay (second)	LOS	Delay (second)	LOS	Delay (second)	
#2: Garey Street and Commercial Street	31.4	C	57.7	E	26.3	Yes	34.2	C	59.7	E	25.5	Yes
#4: Center Street and Commercial Street	16.0	C	72.5	F	56.5	Yes	33.0	D	145.3	F	112.3	Yes

Source: Appendix E of this EIR

Notes:
Existing plus project peak hour LOS for all other intersections are provided in the Traffic Impact Assessment (Appendix E of this EIR).

LOS=level of service

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Study Intersections –2031 with Project

As shown in Table 3.3-12, under the 2031 with project condition, significant impacts would occur at two intersections due to project-related increase in traffic delays that would exceed LADOT guidelines (Table 3.3-4):

- Intersection #2: Garey Street and Commercial Street (LOS E – AM peak hour, LOS E – PM peak hour) – The project would result in an increased delay of 31.6 seconds during the AM peak hour and 28.8 seconds during the PM peak hour.
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour) - The project would result in an increased delay of 65.8 seconds during the AM peak hour and 99.9 seconds during the PM peak hour.

In recognition of the significant impacts associated with project-related operational traffic delays, in addition to the project-related conflicts with applicable plans, policies, and regulations related to neighborhood connectivity and active transportation in the traffic study area, Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to further reduce the demand for trips by single-occupant vehicles, while maximizing multi-modal connectivity and access for transit riders via the planning, design, and construction of new multi-modal active transportation infrastructure in the traffic study area. Mitigation Measure LU-1 is consistent with LADOT Guidelines, and aligns with the City's sustainability, smart growth, and greenhouse gas reduction objectives.

Mitigation Measure TR-2 (described in Section 3.3.6) is proposed to mitigate impacts associated with project-related increased delays at Intersection #4: Center Street and Commercial Street. A new traffic signal at this location would reduce the delay by 69.8 seconds in the AM peak period and 142.4 seconds in PM peak period to LOS B. Signal controlled intersections often provide more capacity due to the platooning effect that they create. This results in more efficient traffic operations at the intersection and lowers vehicular delay. Implementation of Mitigation Measure TR-2 would reduce impacts at Intersection #4 to a level less than significant.

There are no feasible mitigation measures to minimize the impacts at Intersection #2: Garey Street and Commercial Street, and the increased project-related operational traffic delay would continue to exceed LADOT guidelines in 2031. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to reduce the impact; however, impacts would remain significant and unavoidable.

Study Intersections –2040 with Project

As shown in Table 3.3-13, for the 2040 with project condition, significant impacts would occur at two intersections due to project-related operational traffic delays that would exceed LADOT guidelines (Table 3.3-4).

- Intersection #2: Garey Street and Commercial Street (LOS D – AM and PM peak hour) –The project would result in an increased delay of 24.2 seconds during the AM peak hour and 7.7 seconds during the PM peak hour.

- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour) – The project would result in an increased delay of 72.7 seconds during the AM peak hour and 104.0 seconds during the PM peak hour.

Mitigation Measure TR-2 (described in Section 3.3.6) is proposed to mitigate impacts associated with project-related increased delays at Intersection #4: Center Street and Commercial Street to a level less than significant. A new traffic signal at this location would reduce the delay by 77 seconds in the AM peak period and 151 seconds in the PM peak period, which results in LOS B. Implementation of Mitigation Measure TR-2 would reduce impacts at Intersection #4 to a level less than significant. As discussed above for the 2031 with project condition, there are no feasible mitigation measures to minimize the operational traffic delay at Intersection #2: Garey Street and Commercial Street to a level less than significant, and the project-related increased delays would continue to exceed LADOT guidelines in 2040. Although Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed, impacts would remain significant and unavoidable.

Table 3.3-12. Peak Hour Level of Service for Impacted Intersections – 2031

Intersection	AM Peak						PM Peak					
	2031 No Project		2031 with Project		Delta		2031 No Project		2031 with Project		Delta	
	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Significant Impact?	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Significant Impact?
#2: Garey Street and Commercial Street	31.3	C	62.9	E	31.6	Yes	34.1	C	62.9	E	28.8	Yes
#4: Center Street and Commercial Street	17.2	C	83.0	F	65.8	Yes	57.5	F	157.4	F	99.9	Yes

Source: Appendix E of this EIR

Notes:
2031 peak hour LOS for all other intersections are provided in the Traffic Impact Assessment (Appendix E of this EIR).

LOS=level of service

Table 3.3-13. Peak Hour Level of Service for Impacted Intersections – 2040

Intersection	AM Peak						PM Peak					
	2040 No Project		2040 with Project		Delta		2040 No Project		2040 with Project		Delta	
	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Significant Impact?	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Significant Impact?
#2: Garey Street and Commercial Street	31.3	C	55.5	D	24.2	Yes	34.6	C	42.3	D	7.7	Yes
#4: Center Street and Commercial Street	18.0	C	90.7	F	72.7	Yes	62.5	F	166.5	F	104.0	Yes

Source: Appendix E of this EIR

Notes:
2040 peak hour LOS for all other intersections are provided in the Traffic Impact Assessment (Appendix E of this EIR).

LOS=level of service

US-101 Main Line –2031 with Project

Future operating conditions on the US-101 main line in 2031 are summarized in Table 3.3-14. As provided, northbound US-101 operates at LOS F(3) during both AM and PM peak hours. Southbound US-101 operates at LOS F(0) and LOS F(3) during AM and PM peak hours, respectively. These LOS apply to both 2031 No project and 2031 with project conditions. No volume to capacity increase attributable to the project would occur. Traffic generated by the project would not have an impact on US-101 operating conditions during the peak hours, and no impact would occur.

US-101 Main Line –2040 with Project

Future operating conditions on the US-101 main line in 2040 are summarized in Table 3.3-15. In 2040, northbound US-101 operates at LOS F(3) during both AM and PM peak hours. Southbound US-101 operates at LOS F(0) and LOS F(3) during AM and PM peak hours, respectively. These LOS apply to both 2040 No Project and 2040 with project conditions. Traffic generated by the project would not have an impact on US-101 operating conditions during the peak hours in 2040, and no impact would occur.

Indirect Impacts

The project would support statewide and regional mandates for a more efficient and robust transit system in Southern California, thereby supporting multiple plans, ordinances, and policies with measures for enhanced rail operational capacity at LAUS. The project is the centerpiece of the SCORE Program and would facilitate region-wide capacity enhancements across the Metrolink system and new HSR service to Southern California. No impact would occur.

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Table 3.3-14. Freeway Main Line Level of Service – 2031

Freeway Analysis Location	Peak	Northbound				Southbound			
		Demand	Capacity	D/C	LOS	Demand	Capacity	D/C	LOS
2031 No Project									
US-101 North of Vignes Street	AM	13,298	8,000	1.66	F(3)	9,150	8,000	1.14	F(0)
(PM 0.45)	PM	13,176	8,000	1.65	F(3)	13,420	8,000	1.68	F(3)
2031 with Project									
US-101 North of Vignes Street	AM	13,300	8,000	1.66	F(3)	9,150	8,000	1.14	F(0)
(PM 0.45)	PM	13,188	8,000	1.65	F(3)	13,420	8,000	1.68	F(3)

Source: Appendix E of this EIR

Notes:
D/C=demand-to-capacity; LOS=level of service; PM=Post Mile

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Table 3.3-15. Freeway Main Line Level of Service – 2040

Freeway Analysis Location	Peak	Northbound				Southbound			
		Demand	Capacity	D/C	LOS	Demand	Capacity	D/C	LOS
2040 No Project									
US-101 North of Vignes Street	AM	14,279	8,000	1.78	F(3)	9,825	8,000	1.23	F(0)
(PM 0.45)	PM	14,148	8,000	1.77	F(3)	14,410	8,000	1.80	F(3)
2040 with Project									
US-101 North of Vignes Street	AM	14,281	8,000	1.79	F(3)	9,825	8,000	1.23	F(0)
(PM 0.45)	PM	14,160	8,000	1.77	F(3)	14,410	8,000	1.80	F(3)

Source: Appendix E of this EIR

Notes:
D/C=demand-to-capacity; LOS=level of service; PM=Post Mile

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THRESHOLD 3.3-D	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Direct Impacts – Construction

Construction activities would result in temporary construction-related roadway hazards in the traffic study area. Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations throughout the traffic study area. The US-101 main line and on- and off-ramps at Commercial Street would be also be subject to temporary lane width reductions. Additionally, short-radius curves and/or short sight distances may occur during construction. This is considered a significant impact. Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to mitigate impacts related to roadway hazards during construction to a level less than significant.

Direct Impacts – Operations

The project-related infrastructure improvements would not create sharp curves or dangerous intersections in the traffic study area. The design and construction of project-related roadway and bridge improvements, including the realignment of Commercial Street, run-through track infrastructure over the US-101, and new roadways east of Center Street are being designed and coordinated with local agencies: including the City's Bureau of Transportation and Engineering, Caltrans, Metrolink, and CHSRA, as applicable.

All project features, including new roadway intersections and pedestrian connections, would be designed and constructed to comply with applicable agency standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. Therefore, impacts are considered less than significant.

Indirect Impacts

The project would not fundamentally change the existing uses at LAUS or the roadway system in the traffic study area, and no long-term, indirect transportation-related impacts within the surrounding area would result. Therefore, no impact would occur.

THRESHOLD 3.3-E	Result in inadequate emergency access

Direct Impacts – Construction

Based on a review of disaster route maps for the Los Angeles County Operational Area, the project would be located within Area H of the Los Angeles Central Evacuation Map, of which Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway (Appendix E of this EIR).

Modifications to the Vignes Street Bridge and the Cesar Chavez Bridge would result in temporary closure of one lane in each direction for both roadways; although, a minimum of one lane would be maintained

throughout the duration of construction. A full closure would occur along Commercial Street between the US-101 ramp at Garey Street and Center Street to construct the run-through track infrastructure south of US-101. Closures would require traffic detouring. Given that traffic would be diverted to local roadways, the LOS of these adjacent intersections would be affected. As previously indicated above, significant delays anticipated at three intersections during construction would affect traffic along Commercial, Alameda, and Vignes Streets.

Construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could interfere with emergency response and access. Although construction would require some temporary roadway closures, not all of the roadway closures would occur at the same time, and other roadways would be available for evacuation. Notwithstanding these circumstances, this is considered a significant impact. Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to mitigate impacts during construction to a level less than significant.

Direct Impacts – Operations

As previously discussed, under 2031 and 2040 with project conditions, minimal project-related increase delays are expected at intersections within the traffic study area. Planned internal roadway reconfiguration and associated modifications to fire lanes and access roads would not significantly affect emergency access, primarily because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained from Patsaouras Transit Plaza which would provide emergency and fire lane access to the eastern side of LAUS. Planned internal roadway reconfigurations and associated modifications would be coordinated and approved by the Fire Marshal to ensure the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the identified evacuation routes as identified by the City.

New VCEs in the new passenger concourse (stairways, escalators, and elevators) would improve passenger egress and ADA accessibility throughout LAUS. In addition, the new passenger concourse and new expanded passageway would designed to meet all applicable NFPA codes and requirements for passenger egress and emergency evacuations. Based on these considerations, impacts are considered less than significant.

Indirect Impacts

No indirect impacts related to emergency routes and limited access to the surrounding area would occur. Therefore, no impact would occur.

THRESHOLD 3.3-F	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Direct Impacts – Construction

Public Transit

LAUS is a central feature within Southern California's public transit network. For this reason, maintaining rail/transit service and minimizing disruption to commuters during construction to the maximum extent feasible is a key project objective. Metro and the Southern California Integrated Service Planning Working Group (Working Group), comprised of representatives from CHSRA, Caltrans, FRA, CHSRA, LOSSAN, Amtrak, Metrolink and Metro, are conducting ongoing coordination to develop a project implementation approach to minimize temporary disruptions to regional/intercity rail service during construction. At this preliminary stage of engineering design, detailed construction phasing plans that correspond to means and methods to maintain on-time performance for rail operators at LAUS is not available. Although it is anticipated, construction of the lead tracks, the elevated rail yard, and associated platform improvements would cause potential schedule delays and increased dwell times at LAUS, and potentially other station locations, because not all lead tracks and rail yard tracks and platforms would be in service at one time. Decreased performance for rail operators at LAUS and temporary disruptions to commuters daily travel patterns may occur. Passengers may also be affected by construction of the above-grade passenger concourse and new expanded passageway due to detours and temporary accessibility disruptions to Gold Line, Red Line, and Purple Line platforms. This is considered a significant impact. Implementation of Mitigation Measure TR-3 (described in Section 3.3.6) would reduce this impact to a level less than significant.

LADOT's Dash Route D, which uses Center Street, would also be affected by construction of the project. During construction of the run-through track structures south of LAUS, a full closure of Commercial Street between US-101 ramp/Garey Street and Center Street is required. As a result, the proposed project has the potential to affect the bus schedule for this route through a combination of detours, temporary road closures, and changes in scheduling. This is considered a significant impact. Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to mitigate impacts on bus service operators during construction to a level less than significant.

Bicycle and Pedestrian Facilities

Access to and from the existing Amtrak and Metrolink boarding platforms would be modified to facilitate construction of the proposed project. Appropriate safety provisions would be required to be in place to minimize disruptions to pedestrian ingress and egress through LAUS. This includes sequencing construction within the rail yard (and passenger concourse) and maintaining safe and accessible access to platforms for the Gold Line and regional/intercity trains. Pedestrian and bicycle access to and from LAUS would also be temporarily affected, and bicyclists could be subject to hazardous conditions near work zones during the construction of bridge improvements (e.g., Cesar Chavez Avenue and Vignes Street) and

modifications to local streets (including potential street closures and vacations). This is considered a significant impact. Mitigation Measure TR-1 (described in Section 3.3.6) is proposed to mitigate impacts on bicyclists and pedestrians during construction to a level less than significant.

Direct Impacts – Operations

Public Transit

As described in Section 3.2, Land Use and Planning, the project is consistent with the plans and policies relative to expansion of existing transportation options and increased rail service in the Southern California. In addition to supporting Metrolink's implementation of the SCORE Program, the project is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the following:

- California Transportation Plan 2040 (Appendix E of this EIR) – The *California Transportation Plan 2040* vision calls for a transportation system that is safe, sustainable, universally accessible, and globally competitive while meeting the State's greenhouse gas emission reduction goals. The project-related capacity enhancements would allow for future train operations to address this vision.
- 2016 RTP/SCS (Appendix E of this EIR) – The 2016 RTP/SCS was prepared pursuant to SB 375, to reduce GHG emissions from vehicles through better-integrated regional transportation, land use, and housing planning strategies to provide more access to jobs, services, public transit and active transportation options. The project would indirectly contribute to cumulative benefits for the region, including a regional reduction of GHG emissions and VMT, as demonstrated by the operational analysis provided in the 2016 RTP/SCS (Program EIR Table 3.3.4-4) (Appendix E of this EIR). As described in the 2016 RTP/SCS, the project would improve rail service and safety for Metrolink and the LOSSAN rail corridor, and it would also provide interconnectivity to the planned HSR system, making it an attractive alternative to congested highways. The 2016 RTP/SCS identifies improvements at LAUS as a critical first step in the implementation of regional transportation solutions. From a regional perspective, the project would expand existing transportation options, foster multi-modal connectivity throughout the region, and accommodate the planned HSR system. LAUS is identified as a high-quality transit area and transit priority area within the 2016 RTP/SCS, and the project is specifically identified as the number one future transit improvement for the region.
- 2018 California State Rail Plan – The project-related capacity enhancements correlate with the improvements for the Los Angeles Urban Mobility Corridor, and estimated train movements that could occur coincide with the 2027 mid-term plan statewide goals
- 2018 Business Plan – The project-related capacity enhancements accommodate the planned HSR system in alignment with the vision of the *2018 Business Plan* (Appendix E of this EIR).

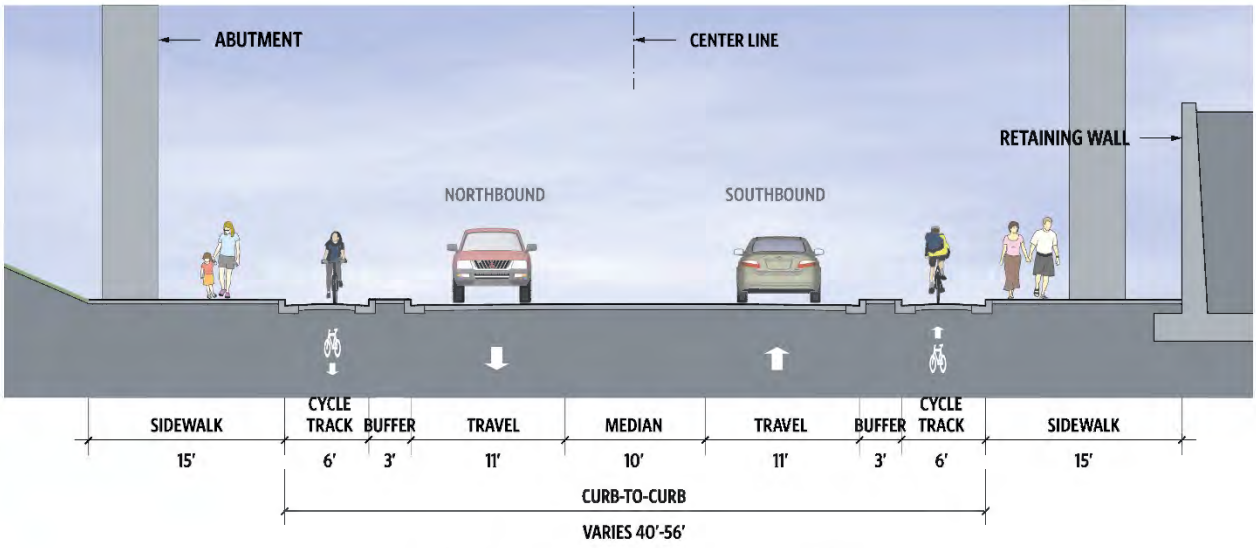
These impacts are considered beneficial.

Bicycle and Pedestrian Facilities

Center Street – As part of the project, roadway improvements on Center Street from Ducommun Street to US-101 would be constructed consistent with the Connect US Action Plan, and would include the following elements, as depicted on Figure 3.3-4:

- 6-foot-wide cycle tracks with 3-foot buffers in both directions
- 15-foot sidewalks with street trees and landscaping to enhance pedestrian accessibility

Figure 3.3-4. Center Street Cross Section (Commercial Street to Ducommun Street Looking South)



CENTER ST. (Commerical St. to Ducommun St.)

Commercial Street – Commercial Street would be realigned to the north, away from the run-through track embankment south of LAUS. Columns supporting the US-101 viaduct would be located within the median and sidewalks of the realigned portion of Commercial Street at the location of the crossing. The realigned portion of Commercial Street would accommodate 5-foot-wide Class II bicycle lanes and 13-foot-wide sidewalks and intersect with Center Street just south of US-101.

Vignes Street – As part of the reconstruction of the Vignes Street Bridge, the existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's Mobility Plan 2035. The Vignes Street bridge structure would be constructed with sufficient width to accommodate the following per the City's Mobility Plan 2035:

- ROW width: 100 feet
- Roadway width: 70 feet

Cesar Chavez Avenue – The Cesar Chavez Avenue Bridge would be replaced as part of the throat reconstruction in Phase A. The existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's Mobility Plan 2035 and the City's vision for future comprehensive treatments. The Cesar Chavez Avenue bridge structure would be constructed with sufficient width to accommodate the following per the City's Mobility Plan 2035 and DTLA Community Plan updates currently in process:

- ROW width: 100 feet
- Roadway width: 70 feet

Although Metro is committed to not precluding future active transportation infrastructure to be implemented by the City of Los Angeles, and achieving compatibility with other planned or completed projects, including the Connect US Action Plan and the Los Angeles River Path project, as described in Section 3.2, Land Use and Planning, the proposed project would conflict with the City's Mobility Plan 2035 Policy 2.12. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to improve connectivity between LAUS and neighborhoods surrounding LAUS and facilitate cycling and walking the in the project study area. Upon implementation of Mitigation Measure LU-1, impacts would be reduced to a level less than significant.

Indirect Impacts

The project would accommodate a substantial increase in rail operational capacity for the region, reducing train idling (dwell) time and improving on-time performance for trains using LAUS. The project would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of greenhouse gas emissions and vehicle miles traveled, as demonstrated by the operational analysis provided in the 2016 RTP/SCS (Program EIR Table 3.3.4-4).

As discussed above, the project also includes design elements consistent with Metro's *Connect US Plan*, which is intended to encourage people to walk and bicycle between LAUS, First Street/Central Street Station, and the surrounding neighborhoods. Therefore, no impact would occur.

3.3.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to transportation.

TR-1 Prepare a Construction TMP: During the final engineering phase and at least 30 days prior to construction, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro, LADOT, and Caltrans, where applicable.

The street closure schedules in the construction TMP shall be coordinated between the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. During planned closures,

traffic shall be re-routed to adjacent streets via clearly marked detours and notice shall be provided in advance to applicable parties (nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours so as to avoid heavily congested areas during peak hours, where feasible. The following provisions shall be included in the TMP:

- Traffic flow shall be maintained, particularly during peak hours, to the degree feasible.
- Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, and residences at all times, as feasible.
- Metro or the contractor shall post advance notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction.
- Metro shall notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions.
- Metro shall coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to mitigate detoured traffic volumes.
- Closed-circuit television cameras shall be installed at some of the impacted intersections (as approved by LADOT) to monitor traffic in real-time by the Automated Traffic Surveillance and Control department of LADOT during construction. This would allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements.

TR-2 Install Traffic Signal: Metro shall install a new traffic signal at the intersection of Center Street and Commercial Street.

TR-3 Prepare Rail Operations Agreements and Temporary Construction Service Plan: During final engineering design and prior to construction, Metro shall establish rail operating agreements and/or memorandums with each current rail operator, including but not limited to Metrolink and Amtrak, to outline mutually agreed upon on-time performance objectives to be achieved throughout construction, and how construction sequencing and railroad operational protocols would be incorporated into applicable construction documents (plans and specifications) and implemented to maintain the mutually agreed upon on-time performance during construction.

Prior to construction, Metro and the construction contractor shall prepare detailed construction phasing plans for each phase of construction that identify appropriate means and methods to maintain mutually agreed upon on-time performance objectives while minimizing impacts on pedestrians and passengers at LAUS. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to establish temporary

construction detours for passengers that correspond to detailed construction phasing plans to minimize impacts on passenger transfer times. Detailed construction phasing plans shall be deemed acceptable by the current rail operators prior to commencement of construction activities that could reduce on-time performance.

Throughout the duration of construction, Metrolink shall participate in weekly construction coordination meetings to evaluate the efficiency of the measures in place to achieve the mutually agreed upon on-time performance, and shall coordinate with Metro and the construction contractor to implement changes to means and methods during construction to ensure the performance objectives are maintained at an acceptable level throughout construction of the project.

LU-1 Implement Transportation Demand Management Measures to Enhance Neighborhood Connectivity (as described in Section 3.2, Land Use and Planning).

3.3.7 CEQA Significance Conclusions

As shown in Table 3.3-16, Implementation of Mitigation Measure TR-1 (described in Section 3.3.6) would decrease the average delay at Intersections #2, #10, and #15; thereby reducing the significant construction-related transportation impacts to a level less than significant.

As shown in Table 3.3-17 and Table 3.3-18, upon implementation of Mitigation Measure TR-2 (described in Section 3.3.6), the LOS at Intersection #4 would operate at acceptable LOS B (AM and PM peak hours) in the 2031 and 2040 with project conditions. Implementation of Mitigation Measure TR-2 would improve operations at Intersection #4 to better than pre-project conditions, and would minimize the operational traffic delay at Intersection #4; thereby reducing the significant operational traffic impact at Intersection #4 to a level less than significant.

Due to the limitation of signal timing, phasing, and coordination, no additional feasible mitigation measures are proposed to minimize the operational traffic delay at Intersection #2 in the 2031 and 2040 with project conditions. The project-related increased delays would continue to exceed LADOT guidelines for Intersection #2. Therefore, the operational traffic impacts at Intersection #2 would be significant and unavoidable.

Upon implementation of Mitigation Measure TR-3 (described in Section 3.3.6), significant impacts on train operations during construction would be reduced to a level less than significant.

Upon implementation of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning), significant impacts associated with conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River would be reduced to a level less than significant.

Table 3.3-16. 2031 Project Plus Construction - Level of Service After Mitigation

Node	Intersection	AM Peak						PM Peak					
		2031 with Project Construction		2031 with Project Construction (Mitigated)		Delta Delay (second)	Significant Impact after Mitigation?	2031 with Project Construction		2031 with Project Construction (Mitigated)		Delta Delay (second)	Significant Impact after Mitigation?
		Delay (second)	LOS	Delay (second)	LOS			Delay (second)	LOS	Delay (second)	LOS		
1	Alameda Street and Commercial Street	34.0	C	19.9	B	-14.1	No	39.5	D	33.8	C	-5.7	No
2	Garey Street and Commercial Street	60.0	E	34.5	C	-26.1	No	37.8	D	36.0	D	-1.8	No
10	Alameda Street and Los Angeles Street WB	12.7	B	6.5	A	-6.2	No	31.1	C	16.3	B	-14.8	No
15	Vignes Street and Main Street	25.0	C	19.5	B	-5.5	No	90.8	F	78.2	E	-12.6	No
27	Mission Road and Cesar Chavez Avenue	62.0	E	55.3	D	-6.7	No	26.3	C	26.0	C	-0.3	No

Source: Appendix E of this EIR

Notes:
LOS=level of service; WB=westbound

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Table 3.3-17. 2031 with Project - Level of Service After Mitigation

Node	Intersection	AM Peak						PM Peak					
		2031 with Project		2031 with Project (Mitigated)		Delta	Significant Impact after Mitigation?	2031 with Project		2031 with Project (Mitigated)		Delta	Significant Impact after Mitigation?
		Delay (second)	LOS	Delay (second)	LOS	Delay (second)		Delay (second)	LOS	Delay (second)	LOS	Delay (second)	
4	Center Street and Commercial Street	83.0	F	13.2	B	-69.8	No	157.4	F	15.0	B	-142.4	No

Source: Appendix E of this EIR

Notes:
LOS=level of service

Table 3.3-18. 2040 with Project - Level of Service After Mitigation

Node	Intersection	AM Peak						PM Peak					
		2040 with Project		2040 with Project (Mitigated)		Delta	Significant Impact after Mitigation?	2040 with Project		2040 with Project (Mitigated)		Delta	Significant Impact after Mitigation?
		Delay (second)	LOS	Delay (second)	LOS	Delay (second)		Delay (second)	LOS	Delay (second)	LOS	Delay (second)	
4	Center Street and Commercial Street	90.7	F	13.7	B	-77.0	No	166.5	F	15.5	B	-151.0	No

Source: Appendix E of this EIR

Notes:
LOS=level of service

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3.4 Aesthetics

3.4.1 Introduction

This section provides an evaluation of the proposed project and aesthetic conditions within the project study area. Information contained in this section is summarized from the *Link US Visual Impact Assessment* (Appendix F of this EIR) in combination with published sources.

3.4.2 Regulatory Framework

Table 3.4-1 identifies and summarizes applicable laws, regulations, and plans relative to visual quality and aesthetic conditions.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics

Law, Regulation, or Plan	Description
Local	
City of Los Angeles General Plan	The City of Los Angeles General Plan includes the following policies that may be applicable to visual impacts. *Framework Element* Chapter 9 of the General Plan, Framework Element, Infrastructure, and Public Services, includes the following policies relating to lighting: • Policy 9.40.1: Require lighting on private streets, pedestrian-oriented areas, and pedestrian walks to meet minimum City standards for street and sidewalk lighting • Policy 9.40.2: Require parking lot lighting and related pedestrian lighting to meet recognized national standards • Policy 9.40.3: Develop regulations to ensure quality lighting to minimize or eliminate the adverse impact of lighting due to light pollution, light trespass, and glare for facade lighting, security lighting, and advertising lighting, including billboards • Policy 9.40.4: Establish regulations and standards which eliminate the adverse impacts due to light pollution, light trespass, and glare for the area lighting of rail yards, transit yards, trucking facilities, and similar facilities • Policy 9.40.6: Coordinate placement and location of street trees with the placement of street lights *Conservation Element* • Section 15: Land Form and Scenic Vistas aims to protect and reinforce natural and scenic vistas as irreplaceable resources and for the aesthetic enjoyment of present and future generations. *Mobility Plan (Transportation Element)* • Policy 2.16: Ensure that future modifications to any scenic highway do not impact the unique identity or characteristic of that scenic highway. • Policy 3.4: Provide all residents, workers, and visitors with affordable, efficient, convenient, and attractive transit services.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics

Law, Regulation, or Plan	Description
Los Angeles Municipal Code	Ordinance Number 185472 • Clarifies Historic-Cultural Monument designation criteria, enhances due process and notification procedures affecting property owners, and provides for extensions of time limits. Ordinance Number 177404 • All existing protected trees and relocation and replacement trees specified by the Advisory Agency in accordance with Sections 17.02, 17.05, 17.06, 17.51, and 17.52 of this Code will be indicated on a plot plan attached to the building permit issued pursuant to this Code. Chapter 9, Article 3, Sec. 93.0117 • No exterior light source may cause more than two footcandles (21.5 lx) of lighting intensity or generate direct glare onto exterior glazed windows or glass doors; elevated habitable porch, deck, or balcony; or any ground surface intended for uses such as recreation, barbecue or lawn areas, or any other property containing a residential unit or units. Chapter 1, Article 2, Sec. 12.21 A5(k) • All lights used to illuminate a parking area will be designed, located, and arranged so as to reflect the light away from any streets and any adjacent premises. Chapter 1, Article 7, Sec. 17.08C • Plans for street lighting system will be submitted to and approved by the Bureau of Street Lighting. Division 62, Sec. 91.6205M • No sign will be arranged and illuminated in such a manner as to produce a light intensity of greater than three footcandles above ambient lighting, as measured at the property line of the nearest residentially zoned property.
Cornfield Arroyo Seco Specific Plan	The Cornfield Arroyo Seco Specific Plan includes requirements that may be applicable to visual impacts • Lighting will be provided along all vehicular access ways and pedestrian walkways. • Lighting (exterior building and landscape) will be directed away from properties and roadways, and shielded as necessary. In particular, no lighting will be directed at the window of a residential unit located either within or adjacent to a project.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics

Law, Regulation, or Plan	Description
CCNCP	The following policies are related to visual quality and aesthetics: • Policy 2-1.4: Require that projects be designed and developed to achieve a high level of quality, distinctive character, and compatibility with existing uses and development • Policy 2-4.1: Require that any proposed development be designed to enhance and be compatible with adjacent development • Policy 2-4.2: Preserve community character, scale, and architectural diversity • Policy 2-4.3: Improve safety and aesthetics of parking areas in commercial areas • Policy 2-4.4: create landscaped corridors and enhance through the planting of street trees along segments with no building setbacks and through median plantings • Policy 3-1.2: Achieve adequate compatibility through design treatments, compliance with environmental protection standards and health and safety requirements for industrial uses where they adjoin residential neighborhoods and commercial uses • Policy 3-1.3: Require that any proposed development be designed to enhance and be compatible with adjacent development. • Policy 3-2.1/18-1.1: Support the existing artists-in-residence in Central City North as a cultural resource for the community. • Policy 5-1.1: Encourage the retention of passive and visual open space which provides a balance to the urban development of the Plan Area. • Policy 8-2.2: Ensure that landscaping around buildings be placed so as not to impede visibility • Policy 8-2.3: Ensure adequate lighting around residential, commercial, and industrial buildings in order to improve security • Policy 10-1.2: Encourage the provision of safe, attractive and clearly identifiable transit stops with user friendly design amenities The community plan also includes urban design policies and standards to ensure that residential, commercial, industrial projects, and public spaces and rights of way incorporate specific elements of good design. For commercial areas, the plan includes requirements for building height and design as well as parking. Community design and landscaping policies and standards are also provided for entryways, streetscape, street trees, street furniture, street lighting, sidewalks and paving, and signage.
ADSP	The ADSP was established to manage continued and expanded development of the specific plan area as a major transit hub for the region and mixed-use development area providing office, hotel, retail, entertainment, tourism, residential, and related uses, in conformance with the goals and objectives of local and regional plans and policies. The plan includes policies regarding allowable and prohibited land uses, building height requirements, historic preservation requirements, open space, pedestrian, and landscaping requirements, transportation, and other policies pertaining to the planning area. The plan also includes significance thresholds, which there are no aesthetic/visual thresholds, and mitigation measures for resource topics, including lighting.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics

Law, Regulation, or Plan	Description
City of Los Angeles CEQA Thresholds Guide	The Los Angeles CEQA Thresholds Guide provides more specific guidance not only to determine the potential for significance, but also to establish thresholds by which a potential aesthetic impact can be measured. The Los Angeles CEQA Thresholds Guide recognizes the subjectivity brought to such an analysis and states that a determination of significance is to be made on a case-by-case basis based on the following considerations: • The amount of relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished • The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image • The degree to which the project would contribute to the area's aesthetic value

Notes:
ADSP=Alameda District Specific Plan; CCNCP= Central City North Community Plan; CEQA=California Environmental Quality Act

3.4.3 Methods for Evaluating Environmental Impacts

The *Link US Visual Impact Assessment* was prepared to follow guidance outlined in the publication *Guidelines for the Visual Impact Assessment of Highway Projects* published by the Federal Highway Administration in January 2015. The following steps were followed to assess the potential aesthetic impacts of the project:

- The project location and setting were defined.
- Existing visual resources and key viewers were identified.
- Visual assessment units and key viewpoints were identified.
- Resource change and viewer response were assessed.
- The visual appearance of the project at key viewpoints was simulated.
- Visual impacts resulting from the project were analyzed.
- Measures to offset visual impacts were developed.

Defining Project Location and Setting

The project study area for aesthetics was identified by considering the existing landscape constraints (landform and land cover) and physiological limits of human sight, and by reviewing initial plans and simulation models to identify the visual elements of the project. Visual quality within the project study area was then described based on existing visual character, viewer groups, and expected community preferences.

Identifying Existing Visual Resources and Key Viewers

Existing Visual Resources

Visual resources are defined and described below by assessing visual character and visual quality in the project study area.

Visual Character

Visual character includes attributes such as form, line, color, and texture, and is used to describe, not evaluate. These attributes are considered neither good nor bad; however, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be quantified by identifying how visually compatible a project would be with the existing condition by using visual character attributes as an indicator. For the project, the following attributes were considered:

- Form – visual mass and shape
- Line – edges or linear definition
- Color – reflective brightness (light, dark) and hue (red, green)
- Texture – surface coarseness
- Dominance – position, size, or contrast
- Scale – apparent size as it relates to the surroundings
- Diversity – a variety of visual patterns
- Continuity – uninterrupted flow of form, line, color, or textural pattern

Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project study area. Public attitudes validate the assessed level of quality and predict how changes to the project study area can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the proposed project. The three criteria for evaluating visual quality are:

- *Vividness* – the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- *Intactness* – the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- *Unity* – the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Narrative ratings have been used to assess the visual quality within each visual assessment unit. Narrative ratings ranging from low (poor), moderately low (fair), moderate (good), moderately high (very good), and high (excellent) have been given for each of the individual criteria—vividness, intactness, and unity—and the rating for the overall visual quality has been assigned based on an average of the individual ratings. If the average rating was between ratings, the higher of the two ratings was assigned.

Key Viewers

The population affected by the project is composed of "viewers." Viewers are people whose view of the landscape may be altered by the project, either because the landscape itself has changed or their perception of the landscape has changed. Viewers, or more specifically the response that viewers have to changes in their visual environment, are one of two variables that determine the extent of visual impacts that would result from the project.

Visual Assessment Units and Key Viewpoints

The project study area was divided into a series of "visual assessment units." Each visual assessment unit has its own visual character and visual quality, defined by boundaries in visual characteristics. Because it is not feasible to analyze all of the views from which the project would be seen, it is necessary to select a number of key views associated with visual assessment units that would most clearly illustrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the project, considering exposure and sensitivity. For this project, six visual assessment units and 14 key viewpoints or "key views" have been identified (Table 3.4-2). These visual assessment units are focused on the most visually dominant features of the project in Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment of the project study area. These visual assessment units and key views are shown on Figure 3.4-1.

Preliminary identification of key views was conducted using aerial mapping and project plans. Preliminary viewpoints were identified based on the anticipated viewers and visual changes at these locations. Appropriate viewpoint locations were verified and finalized in the field during a site visit on July 11, 2016, and multiple photographs were taken at each viewpoint location. Photographs were evaluated against project plans, and final photograph locations and angles were selected by the project team for their overall representation of key views, key viewers, and potential visual changes.

Assessing Resource Change and Viewer Response

Resource Change

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project study area before and after the construction of the project. Resource change is one of the two major variables that determine visual impacts. The overall level of resource change has been qualitatively assessed for each alternative by assigning one of five resource change levels: low, moderately low, moderate, moderately high, or high.

Viewer Response

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. Location relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure. Quantity refers to how many people see the object. The more people who can see an object or the greater frequency with which an object is seen, the more exposure the object has to viewers. Duration refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers would have a response to a visual change.

Narrative ratings have been used to assess viewer exposure. Narrative ratings range from low (larger distance, fewer viewers, and/or short duration), to moderate (moderate distance, moderate number of viewers, and/or moderate duration), to high (proximal location, high number of viewers, and/or long duration of exposure).

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Table 3.4-2. Visual Assessment Units and Key Views

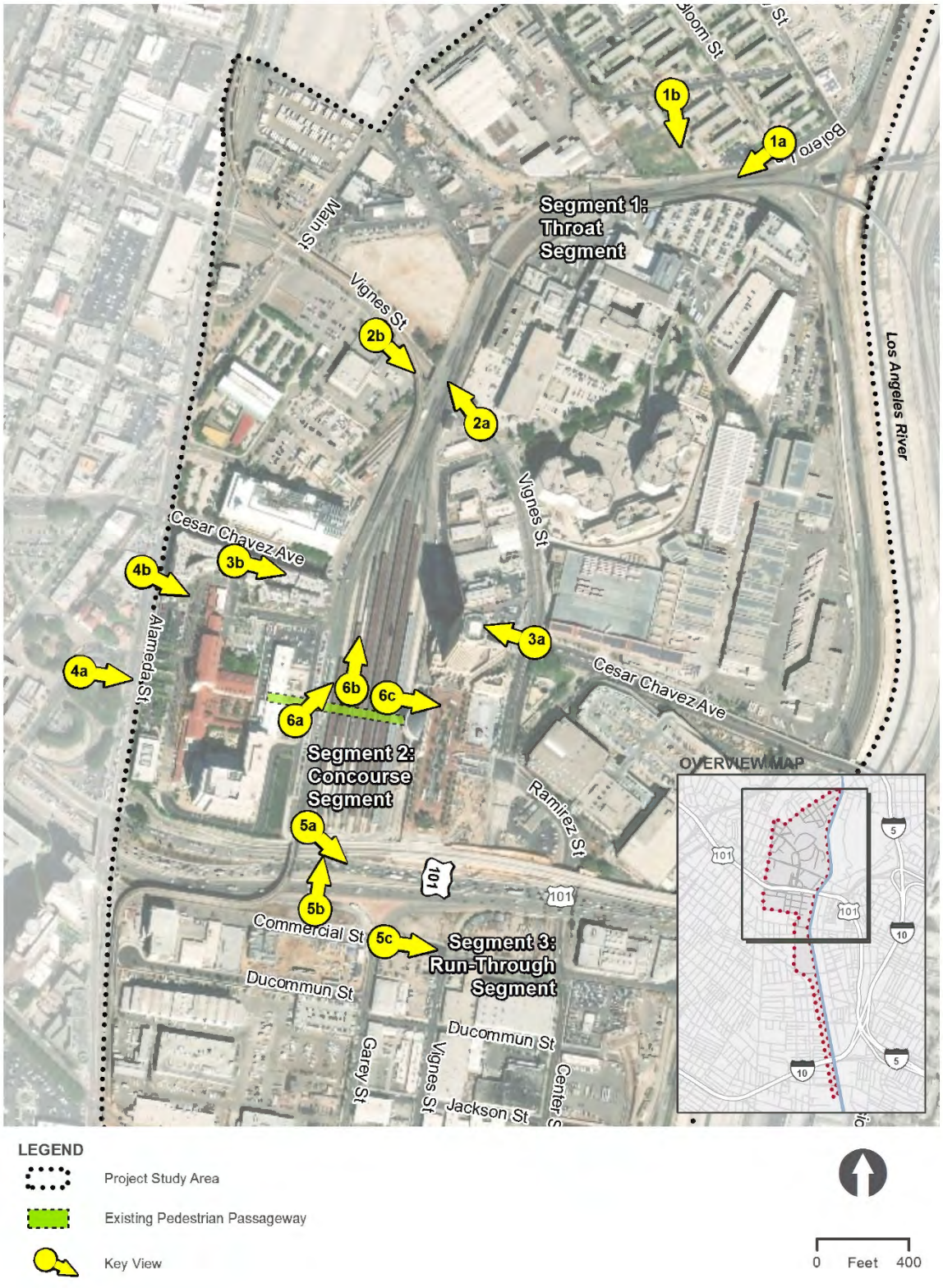
Figure #	Visual Assessment Unit	Key View #	Key View Description
Figure 3.4-2	#1 - William Mead Homes	1a	William Mead Homes (view looking southwest from corner of Bolero Lane/Bloom Street toward railroad ROW)
Figure 3.4-3		1b	William Mead Homes (view looking south from East Elmira Street toward railroad ROW)
Figure 3.4-4	#2 - Vignes Street Corridor	2a	Vignes Street (view looking north from road toward bridge)
Figure 3.4-5		2b	Vignes Street (view looking south from road toward bridge)
Figure 3.4-6	#3 - Cesar Chavez Avenue Corridor/Mozaic Apartments	3a	Cesar Chavez Avenue (view looking west from road toward bridge)
Figure 3.4-7		3b	Cesar Chavez Avenue (view looking east from road toward bridge)
Figure 3.4-8	#4 - Alameda Street Corridor/Father Serra Park	4a	LAUS entrance (view looking southeast from Alameda Street toward LAUS)
Figure 3.4-9		4b	LAUS entrance (view looking east from Father Serra Park toward LAUS)
Figure 3.4-10	#5 - Commercial Street/US-101 Corridor	5a	US-101/Commercial Street (view looking southeast from LAUS Southern Platform Limit toward US-101/Commercial Street)
Figure 3.4-11		5b	Commercial Street (view looking north from Commercial Street toward US-101 and LAUS)
Figure 3.4-12		5c	Commercial Street (view looking east from US-101 on-/off-ramps)

Table 3.4-2. Visual Assessment Units and Key Views

Figure #	Visual Assessment Unit	Key View #	Key View Description
Figure 3.4-13	#6 - LAUS	6a	LAUS rail yard (view looking northeast toward platform area)
Figure 3.4-14		6b	LAUS platform access (view looking north toward pedestrian ramp)
Figure 3.4-15		6c	LAUS pedestrian passageway

Notes:
LAUS=Los Angeles Union Station; ROW=right-of-way

Figure 3.4-1. Visual Assessment Units and Key Views



Source: Appendix F of this EIR

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Viewer Groups

RESIDENTS

This viewer group includes residents in the William Mead Homes residential development, the Mozaic Apartments, and the One Santa Fe Apartments. Residents in the William Mead Homes development would have views of the retaining wall and sound wall along the reconstructed lead tracks in Segment 1: Throat Segment. Residents in the Mozaic Apartments would have variable views of the elevated rail yard and new above-grade passenger concourse in Segment 2: Concourse Segment. Residents of the One Santa Fe Apartments on Santa Fe Street, south of First Street in Segment 3: Run-Through Segment, would have views of the proposed run-through track structures south of LAUS, but from a substantial distance. Given this distance from the project, focus is placed on residents in the William Mead Homes and the Mozaic Apartments.

BUSINESS OWNERS/EMPLOYEES

This viewer group includes business owners, employees, and patrons at commercial, industrial, and institutional land uses in the project study area, including those along Alameda Street, Cesar Chavez Avenue, and Commercial Street. This viewer group would have views that would be relatively close to different elements of the project in all visual assessment units, with the exception of Visual Assessment Unit #1. There would be a high number of viewers in this viewer group because the project would be visible from several commercial/industrial corridors, including Vignes Street (Visual Assessment Unit #2), Cesar Chavez Avenue (Visual Assessment Unit #3), Alameda Street (Visual Assessment Unit #4), Commercial Street and US-101 (Visual Assessment Unit #5), and buildings surrounding LAUS (Visual Assessment Unit #6). Some project elements would also be visible from high-rise buildings and other elevated areas in a larger surrounding area. Most viewers would have short-term exposure to views in the project study area when arriving and leaving businesses; however, exposure would be often and potentially daily. Some business owners and/or employees may have a longer period of exposure if they have views of the project from their places of business. Overall exposure of this viewer group is considered moderately high.

COMMUTERS

This viewer group includes commuters or residents traveling along roadways or transit-ways within the project study area, including the railroad tracks, US-101, Alameda Street, Cesar Chavez Avenue, and Commercial Street. This viewer group would have views that would be relatively close to certain project elements in all visual assessment units, with the exception of Visual Assessment Unit #1. Commuters along Vignes Street (Visual Assessment Unit #2) would have views of the new bridge; commuters along Cesar Chavez Avenue (Visual Assessment Unit #3) would have views of the new bridge, elevated rail yard, and canopies; viewers along Alameda Street (Visual Assessment Unit #4), Commercial Street, and US-101 (Visual Assessment Unit #5) would have views of the run-through track structures south of LAUS. Viewers using LAUS would have views of the railroad tracks and LAUS (Visual Assessment Unit #6). There would be many viewers in this viewer group, since the project is located along several main roadways, highways, and transit corridors. This viewer group would have short-term exposure to views in the project

study area; however, exposure would be often and potentially daily. Overall exposure of this viewer group is considered moderate.

VISITORS/TOURISTS

This viewer group would have views that would be relatively close to different elements of the project in all visual assessment units, with the exception of Visual Assessment Unit #1. Visitors at LAUS (Visual Assessment Unit #6) would have views of the new above-grade passenger concourse, and train riders would have views of the tracks and concourse. Visitors traveling along local roadways and US-101 (Visual Assessment Unit #2 through Visual Assessment Unit #5) would have views of certain project elements, depending on location. There would be many viewers in this viewer group because the project is located in Downtown Los Angeles, near Chinatown, Olvera Street, and other cultural points of interest, and at LAUS. Some viewers would have short-term exposure to views in the project study area when passing through or visiting the area, and exposure would be intermittent. Overall exposure of this viewer group is considered moderate.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. Viewer sensitivity has three attributes: activity, awareness, and local values.

- Activity relates to the pre-occupation of viewers, whether they are preoccupied, thinking of something else, or are truly engaged in observing their surroundings. The more they are actually observing their surroundings, the more sensitivity viewers will have of changes to visual resources.
- Awareness relates to the focus of view. Whether the focus is wide and the view general, or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.
- Local values and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict if viewers would have a high concern for any visual change.

RESIDENTS

Most viewers in this group would be arriving at or leaving their homes, or spending time in their homes or patios (Visual Assessment Unit #1 and Visual Assessment Unit #3). Awareness of existing visual setting and sensitivity to visual changes would be high for these viewers because they would be more focused on their surroundings. Therefore, overall sensitivity of this viewer group to visual changes in the project study area is considered high.

BUSINESS OWNERS/EMPLOYEES

Most viewers in this group would be at or near work (Visual Assessment Unit #2 through Visual Assessment Unit #6). Awareness of the visual setting would be moderate for business employees and

patrons who would be more focused on their business, but may be higher for business owners who are concerned with the visual surroundings of their businesses. Therefore, overall sensitivity of this viewer group to visual changes in the project study area is considered moderately high.

COMMUTERS

Most viewers in this group would be traveling to or from work or home (Visual Assessment Unit #2 through Visual Assessment Unit #6). Awareness of the visual setting would be moderately low to moderate for drivers, who would be more focused on driving during periods of light roadway congestion, but may be able to focus on the surrounding views during periods of heavy roadway congestion when vehicles are moving more slowly. Awareness of the visual setting would range from moderate to moderately high for passengers, bicyclists, and pedestrians who would be able to focus on their surroundings, but may be accustomed to the views. Therefore, overall sensitivity of this viewer group to visual changes in the project study area is considered moderate.

VISITORS/TOURISTS

Most viewers in this group would be traveling to local businesses or points of cultural interest or traveling through the area (Visual Assessment Unit #2 through Visual Assessment Unit #6). Awareness of the visual setting would be moderate for drivers, because they would be more focused on driving, but would be high for passengers, bicyclists, and pedestrians who would be engaged in passive activities and, as visitors, would be more focused on their surroundings. Therefore, the sensitivity of this viewer group to visual changes in the project study area would be considered moderately high.

Simulating Visual Appearance of the Project at Key Viewpoints

To create a visual representation of the project, photo-realistic simulations were created by combining photographs of existing conditions and computer aided design files. A 3-dimensional model was generated using known match points in both the photographs and the virtual model. Images were then duplicated within the simulation, and multi-media elements were added as an overlay with attention paid to location and size of objects. Artist renderings were also prepared to depict the elements of the new above-grade passenger concourse.

3.4.4 Existing Conditions

Visual Assessment Unit #1: William Mead Homes

Key Views

Visual Assessment Unit #1 is in the William Mead Homes public housing development and represents residential viewers. Two key views were chosen within the development to illustrate visual changes resulting from the project.

- Key View #1a is located at the corner of Bolero Lane and Bloom Street, in front of one of the apartment buildings, facing southwest (Figure 3.4-2).

- Key View #1b is located at Elmira Street, between two of the apartment buildings, facing south (Figure 3.4-3).

These key views were chosen to illustrate views of the track and structural improvements within Segment 1: Throat Segment of the project study area from two vantage points that residents within William Mead Homes would experience.

Visual Character

Visual Assessment Unit #1 consists of the William Mead Homes, an 8-acre residential development that provides housing to low-income households. The William Mead Homes property consists of 449 units in 24 buildings in the northern portion of the project study area. These units are clustered together in a distinct neighborhood and are bordered by railroad tracks to the east, commercial/industrial properties to the south, Main Street to the west, and Leroy Street to the north. This residential community is surrounded by industrial, commercial, and transportation uses.

Figure 3.4-2. Key View #1a – William Mead Homes (View Looking Southwest from Corner of Bolero Lane/Bloom Street toward Railroad Right-of-Way)

Source: Appendix F of this EIR

Figure 3.4-3. Key View #1b – William Mead Homes (View Looking South from Elmira Street toward Railroad Right-of-Way)

Source: Appendix F of this EIR

Buildings in Visual Assessment Unit #1 are brick buildings, two to three stories high, with ornamental landscaping (trees, bushes, and lawn) surrounding the units. Paved sidewalks and roadways connect the buildings. Some of the units have laundry lines set on cement slabs adjacent to the buildings. There are telephone poles and overhead power lines that traverse this Visual Assessment Unit. Recreational facilities include a baseball diamond, basketball court, and handball court located at the southwestern corner of the property.

The visual character of Visual Assessment Unit #1 is that of an established high-density residential development within an urban industrial setting. The residential buildings, rectangular in shape and brick red with green trim, are the dominant physical components. These buildings provide continuity in form, line, and color. The surrounding streets, power lines, commercial/industrial buildings, and train tracks are also linear in form. Landscaping surrounding the buildings, including trees, shrubs, lawns, and individual ornamental plantings, add diversity in form, line, color, and texture to the landscape. Within the property, the buildings are relatively close together, and the streets are narrow, creating a pedestrian-scale environment.

Visual Quality

Within the internal units of the property, the primary views from the two-story buildings are of other buildings. On the south edge of the property, near Bolero Lane, there are views of the railroad tracks, power lines, correctional facilities along Vignes Street, and surrounding industrial development. The Los Angeles River, a concrete-lined channel, is located east of the rail yard and tracks, and is not visible from the street elevation. On the west side of the property, along Elmyra Street, views are of commercial/industrial buildings immediately adjacent to the roadway. These buildings are all taller than the apartment buildings; therefore, there are very few spaces through which there are views beyond these buildings. On the north side of the development, along North Main Street, views are of single-story commercial/industrial buildings. On the east side of the development, along Leroy Street, views are of commercial/industrial buildings, most of which have been painted with murals. There are also large plane trees (*Platanus* species) along the residential side of Leroy Street.

Overall, the visual quality of Visual Assessment Unit #1 is rated as moderately low. Appendix F of this EIR provides additional details.

Visual Assessment Unit #2: Vignes Street Corridor

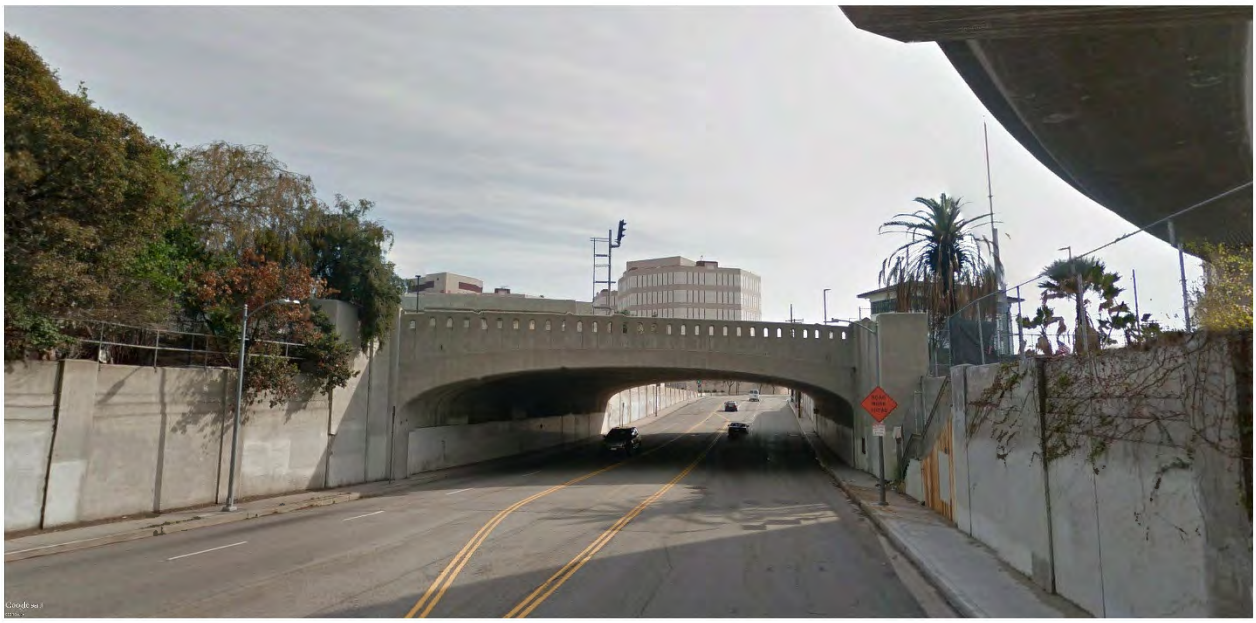
Key Views

This visual assessment unit is along Vignes Street, and represents commuters and visitors. Two key views were chosen to illustrate visual changes resulting from the project (Figure 3.4-4 and Figure 3.4-5). Both key views are of the historic Vignes Street Bridge looking north (Key View #2a) and looking south (Key View #2b). These key views were chosen to illustrate views of the new bridge that would support the elevated tracks through the throat segment.

Figure 3.4-4. Key View #2a – Vignes Street (View Looking North from Road toward Bridge)

Source: Appendix F of this EIR

Figure 3.4-5. Key View #2b – Vignes Street (View Looking South from Road toward Bridge)



Source: Appendix F of this EIR

Visual Character

Visual Assessment Unit #2 consists of Vignes Street from Bauchet Street to Alameda Street. This segment is typically two vehicle lanes in each direction. The street has sidewalks, but no bus stops, bicycle lanes, or street parking. The existing Vignes Street Bridge supports the lead tracks that approach the rail yard.

Land uses in Visual Assessment Unit #2 along the Vignes Street corridor consist of institutional, governmental uses dominated by correctional facilities and some low-scale commercial uses. The visual character of Visual Assessment Unit #2 is that of an urban setting with buildings up to sidewalks, limited vegetation, and the use of retaining walls and fences to define properties.

Visual Quality

The primary views within Visual Assessment Unit #2 are of other buildings and the streetscape. To the east, along Vignes Street the views are of governmental, transit maintenance, and correctional facilities. There are views of the roadway corridor, the City of Los Angeles Police Department Erwin Piper Technical Center, the LAUS subterranean parking entrance, the Metro Bus Operations and Maintenance Facility, low-scale commercial, the Twin Towers and Los Angeles County Men's Central Jail Correctional Facilities, and the roadway undercrossing. To the north of the bridge is the overhead concrete Gold Line structure, vacant lots, and parking lots.

Overall, the visual quality of Visual Assessment Unit #2 is rated as low. Appendix F of this EIR provides additional details.

Visual Assessment Unit #3: Cesar Chavez Avenue Corridor/Mozaic Apartments

Key Views

This visual assessment unit is along Cesar Chavez Avenue, near the Mozaic Apartments and Metro Headquarters, and represents residential viewers, commuters, and visitors. Two key views were chosen to illustrate visual changes resulting from the project (Figure 3.4-6 and Figure 3.4-7). Both key views are of the historic Cesar Chavez Avenue Bridge looking west (Key View #3a) and looking east (Key View #3b). These key views were chosen to illustrate views of the new bridge that would support the elevated tracks leading to the LAUS rail yard and the proposed canopies, which would be visible from the Mozaic Apartments, as well as other viewpoints in this corridor, including roadway travelers.

Visual Character

Visual Assessment Unit #3 consists of Cesar Chavez Avenue from Alameda Street to Vignes Street. This corridor is characterized by an urban setting consisting of a mix of land uses such as the Mozaic Apartments, the historic U.S. Post Office Terminal Annex, and institutional uses at Vignes Street and Cesar Chavez Avenue. Adjacent to the Mozaic Apartments and the U.S. Post Office Terminal Annex are two travel lanes with a bicycle lane in each direction, but the roadway is reduced approaching the roadway bridge, eliminating the bicycle lanes on each side to Vignes Street. Under the existing railroad bridge, the sidewalk is further reduced to a minimal width.

Figure 3.4-6. Key View #3a – Cesar Chavez Avenue (View Looking West from Road toward Bridge)

Source: Appendix F of this EIR

Figure 3.4-7. Key View #3b – Cesar Chavez Avenue (View Looking East from Road toward Bridge)

Source: Appendix F of this EIR

Visual Quality

The primary views within Visual Assessment Unit #3 are of other buildings and the streetscape. Along Cesar Chavez Avenue, there are views of the roadway corridor, the U.S. Post Office Terminal Annex, the Mozaic Apartments, the Metro Headquarters Building, and the Cesar Chavez Avenue Undercrossing. To the south, there are views of Alameda Street and Olvera Street, the Mozaic Apartments, LAUS, El Pueblo Park, and Downtown Los Angeles in the background. To the west, along Cesar Chavez Avenue, views are of the Olvera Street district, a Chevron gas station, the Metro Plaza Hotel, and other single-story commercial buildings. North of Cesar Chavez Avenue, there are views of various commercial buildings, and hills in the background.

Overall, the visual quality of Visual Assessment Unit #3 is rated as moderate. Appendix F of this EIR provides additional details.

Visual Assessment Unit #4: Alameda Street Corridor/Father Serra Park

This visual assessment unit is on Alameda Street in front of the historic LAUS station entrance, and represents commuters, visitors, tourists, travelers, and workers across Alameda Street from LAUS. Two key views were chosen to illustrate visual changes of the project (Figure 3.4-8 and Figure 3.4-9). Key View #4a is from the sidewalk across from the historic LAUS entrance, and Key View #4b is from Father Serra Park. These key views were chosen to illustrate views of the new above-grade passenger concourse.

Visual Character

Visual Assessment Unit #4 consists of Alameda Street between Cesar Chavez Avenue and US-101. In this segment of the corridor, Alameda Street is three vehicle lanes in each direction. Land uses in Visual Assessment Unit #4 consist of commercial businesses, retail shops, offices, and warehouses; the Father Serra Park; as well as Olvera Street and the adjacent El Pueblo Historic Park, which includes the plaza with gazebo, the Los Angeles Chinese American Museum, and Los Angeles' first fire station. This is a highly active pedestrian area, with which LAUS interfaces directly, and represents the most critical viewshed of the analysis.

Visual Quality

The primary views within Visual Assessment Unit #4 are of the Alameda Street corridor in front of LAUS, a highly pedestrian-active area with commuters, travelers, tourists, residents, and workers. North of Cesar Chavez Avenue, Alameda Street is characterized by an urban commercial corridor with mixed aesthetics and uses. To the north, along Alameda Street, views are of the U.S. Post Office Terminal Annex, various commercial buildings, and hills in the background. South of Cesar Chavez Avenue are views of El Pueblo de Los Angeles Historic Park, Olvera Street buildings, the Mozaic Apartments, and the historic LAUS entrance. There are views are of the Olvera Street district, a Chevron gas station, the Metro Plaza Hotel, and other single-story commercial buildings.

Overall, the visual quality of Visual Assessment Unit #4 is rated as moderately high. Appendix F of this EIR provides additional details.

Figure 3.4-8. Key View #4a – Los Angeles Union Station Entrance (View Looking Southeast from Alameda Street toward Los Angeles Union Station)

Source: Appendix F of this EIR

Figure 3.4-9. Key View #4b – Los Angeles Union Station Entrance (View Looking East from Father Serra Park toward Los Angeles Union Station)

Source: Appendix F of this EIR

Visual Assessment Unit #5: Commercial Street Corridor

Key Views

Visual Assessment Unit #5 is of the US-101 and the Commercial Street corridor and represents commuters and visitors. Three key views were chosen to illustrate visual changes of the project (Figure 3.4-10, Figure 3.4-11, and Figure 3.4-12). Key View #5a, is from the LAUS rail yard looking southeast toward US-101 and Commercial Street. Key View #5b is from Commercial Street looking north toward US-101 and LAUS. Key View #5c is from the corner of Commercial Street and Garey Street looking east toward Center Street. These key views were chosen to illustrate views of the run-through track structures south of LAUS in Segment 3: Run-Through Segment. Key View #5b was also chosen to illustrate views of the elevated portion of the above-grade passenger concourse visible from south of LAUS.

Visual Character

Visual Assessment Unit #5 consists of the US-101 corridor south of LAUS and also includes the El Monte Busway and Commercial Street. Alameda Street, on the west side of this assessment unit between Arcadia Street/El Monte Busway and Commercial Street over US-101, is three vehicle lanes in each direction, and is characterized by standard concrete sidewalks and chain-link fencing. In this segment of the corridor, US-101 is at grade and consists of four lanes with an exit lane in the southern direction and four lanes in the northern direction. There is a 3-foot-tall concrete median dividing southbound and northbound lanes.

Along Commercial Street between Alameda Street and Center Street, this corridor consists of two vehicle lanes in each direction. There is a sidewalk on the south side of the roadway, and the north side of the roadway is partially landscaped with crape myrtle trees (*Lagerstroemia* species), Indian hawthorn (*Rhaphiolepis indica*), and silver carpet (*Dymondia margaretae*). There is no street parking or bicycle lanes along this segment of the roadway. This assessment unit has little pedestrian activity.

Land uses in Visual Assessment Unit #5 consist primarily of transportation uses (public facilities), commercial manufacturing, and heavy industrial uses, with many vacant lots/parking lots. Land on both sides of this segment of the US-101 corridor contains light poles and roadway signs, and is landscaped with weedy vegetation, including Mexican fan palms (*Washingtonia robusta*) and date palms (*Phoenix dactylifera*). The Metro Gold Line crosses over the US-101 corridor with a modern concrete viaduct bridge structure. There are telephone poles, overhead power lines, and street lights within this segment of the corridor. High-voltage transmission lines are visible in the background over the Los Angeles River.

The visual character of Visual Assessment Unit #5 is that of an urban transportation corridor lined by urban industrial uses to the south. Several existing roadway corridors, including Alameda Street, US-101, Arcadia Street, Aliso Street, Commercial Street, and the El Monte Busway, are all within this assessment unit, and they are the dominant visual elements of the area. These roadway corridors are linear features crossing the landscape, and are constructed of asphalt and concrete, creating a moderate level of continuity in form, line, color, and texture. Beyond the roadways, there are intermittent buildings associated with downtown and LAUS that are varied in shape and height, but are mainly similar in color to the roadway corridors. Landscaping, including street trees and shrubs, adds some diversity in form, line, color, and texture to the

landscape. The streets are relatively wide, and some of the buildings are tall, which creates a more open and grand-scale environment.

Visual Quality

The primary views within Visual Assessment Unit #5 are of the US-101, Commercial Street, and other roadway corridors and buildings. To the east, views are of railroad infrastructure near the west bank of the Los Angeles River, overhead power lines, and buildings adjacent to Commercial Street and US-101. To the south, views are of commercial/industrial buildings, parking areas, and vacant lots. To the west, views are of the Gold Line viaduct overcrossing, overhead power lines, and Downtown Los Angeles buildings. To the north, views are of LAUS. There are no scenic highways within Visual Assessment Unit #5.

Overall, the visual quality of Visual Assessment Unit #5 is rated as low. Appendix F of this EIR provides additional details.

Figure 3.4-10. Key View #5a – US-101/Commercial Street (View Looking Southeast from Los Angeles Union Station Southern Platform Limit toward US-101/Commercial Street)

Source: Appendix F of this EIR

Figure 3.4-11. Key View #5b – Commercial Street (View looking North from Commercial Street toward US-101 and Los Angeles Union Station)

Source: Appendix F of this EIR

Figure 3.4-12. Key View #5c – Commercial Street (View Looking East from US-101 On/Off-Ramps)

Source: Appendix F of this EIR

Visual Assessment Unit #6: Los Angeles Union Station

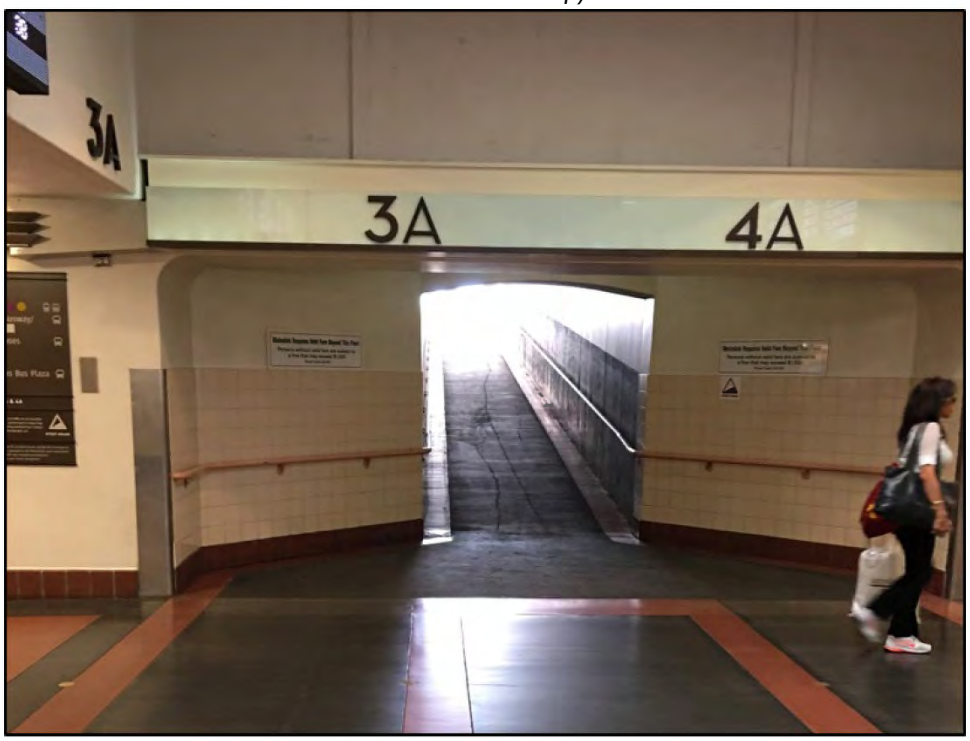
Key Views

This visual assessment unit is within LAUS, and represents station users, employees, commuters, and visitors. For this particular visual assessment unit, three key views were chosen to illustrate the existing conditions of the LAUS rail yard and pedestrian passageway (Figure 3.4-13, Figure 3.4-14, and Figure 3.4-15), and multiple artist renderings were chosen to illustrate the visual changes of the project. Key View #6a is from the parking lot adjacent to the baggage handling building, facing northeast toward the platforms. Key Views #6b and #6c are located within the 28-foot-wide pedestrian passageway looking toward the ramps to the platforms (Key View #6b) and looking west toward the passageway entrance (Key View #6c).

Figure 3.4-13. Key View #6a – Los Angeles Union Station Rail Yard (View Looking Northeast toward Platform Area)

Source: Appendix F of this EIR

Figure 3.4-14. Key View #6b – Los Angeles Union Station Platform Access (View Looking North toward Pedestrian Ramp)



Source: Appendix F of this EIR

Figure 3.4-15. Key View #6c – Los Angeles Union Station Pedestrian Passageway (View Looking West toward Passageway Entrance)

Source: Appendix F of this EIR

Visual Character

Visual Assessment Unit #6 consists of LAUS bounded by Cesar Chavez Avenue on the north, Alameda Street on the west, Vignes Street on the east, and US-101 on the south. The main components of LAUS are the historic building waiting walls, pedestrian passageway, passenger platforms, butterfly canopies over the platforms, rail yard retaining wall facing US-101, car supply repair workshop and associated retaining wall (current maintenance building), terminal tower, railroad tracks, transit plaza, and ramps. There are parking lots at the entrance to LAUS off Alameda Street and east of the station. There are rows of fan palm trees at the entrance to LAUS adjacent to Alameda Street and along the sidewalks adjacent to the parking lots. Land uses in the assessment unit consist of public transportation uses supporting retail and office buildings.

The visual character of Visual Assessment Unit #6 is that of a multimodal transportation center and tourist destination. The architectural design of LAUS is a combination of Art Deco, Mission Revival, and Streamline-Moderne styles. LAUS is known as the "Last of the Great Railway Stations" built in the U.S., and listed in the National Register of Historic Places (NRHP) in 1980. The assessment unit's architectural character is a unique blend of both historic and modern styles, reflecting the historic character of Los Angeles and the evolution of railroad technology from steam to diesel power. The station's structural elements are varied because of function in shape, height, and color.

The station platforms, canopies, railroad tracks, overhead lines, and trains are the dominant physical components in the assessment unit. Although these are all linear features, there is a high diversity in color and pattern. There is no landscaping on the platforms, and landscaping along the west side of the platforms is minimal and low to the ground. The scale on the platforms is pedestrian-oriented, with the platforms defined by the small-scale platform canopies, lighting, and benches. At the Patsaouras Transit Plaza, there are formal rows of palms that provide continuity in form, line, and color. This area also has architectural features, decorative paving, streetscape elements, and sculptures. There is a consistent and formal visual character and scale in the Patsaouras Transit Plaza; however, there is pedestrian-scale, highlighted by the larger scale of the surrounding buildings.

Visual Quality

The primary views within Visual Assessment Unit #6 are of the platforms and surrounding buildings. To the east, views are of buildings adjacent to the rail yard, including the Metro headquarters and the MWD building. To the south, views are of US-101 and buildings beyond. To the west, views are of the LAUS historic buildings. To the north, views are of the railroad tracks, Mozaic Apartments, and hills in the background.

Overall, the visual quality of Visual Assessment Unit #6 is rated as moderate to moderately high. Appendix F of this EIR provides additional details.

3.4.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts related to aesthetics would be considered significant if the project would:

A. Have a substantial adverse effect on a scenic vista

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

C. Substantially degrade the existing visual character or quality of the site or its surroundings

D. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the project:

A. *Scenic Vistas and Resources* – There are no scenic vistas or designated scenic resources that would be obstructed by the project. No impact would occur.

B. *Scenic Highways* – There are no designated state scenic highways in the project study area. Therefore, the project would not substantially damage scenic resources within a state scenic highway. No impact would occur.

Impact Analysis

THRESHOLD 3.4-C	Substantially degrade the existing visual character or quality of the site or its surroundings

Direct Impacts – Construction

During construction of the project, vehicle and equipment use would be visible from surrounding land uses, including William Mead Homes, the Mozaic Apartments, and Father Serra Park (minimal views). Vehicles and equipment would be contained within the project footprint; however, some construction areas would be directly adjacent to residential buildings. Construction activities would also extend into the road during replacement of the Vignes Street and Cesar Chavez Avenue Bridges Due to the temporary nature of construction activities, impacts are considered less than significant.

Direct and Indirect Impacts – Operations

Visual Assessment Unit #1 (William Mead Homes)

Although the visual quality of Visual Assessment Unit #1 is low, the proposed project would introduce new, noticeable infrastructure elements and attributes to the visual landscape that would contribute to a substantial degradation to existing visual character:

- Form (visual mass and shape)
- Dominance (position, size, or contrast)
- Scale (apparent size as it relates to the surroundings)

Views from Key View #1a and Key View #1b would consist of a retaining wall supporting new lead tracks that would run alongside the William Mead Homes complex. The retaining wall would present new linear infrastructure elements that would be a dominant feature substantially larger than any of the current surroundings within the residential community. This is considered a significant impact.

Construction of a sound wall on top of the retaining wall would further contribute to the form, dominance, and scale of these key views because a higher wall would be constructed at the William Mead Homes complex, resulting in a moderately high change to visual quality. Viewer response would be high; therefore, visual impacts would be high. This is considered a significant impact. Mitigation Measure AES-1 (described in Section 3.4.6) is proposed to reduce impacts to a level less than significant.

Figure 3.4-16 through Figure 3.4-21 depict Key Views #1a and #1b in the existing and post-project conditions with a new retaining wall and with a new sound wall adjacent to the William Mead Homes complex. The visual simulations for Key Views #1a and #1b were prepared to illustrate the potential visual impacts resulting from a new retaining wall and sound wall at these locations.

Figure 3.4-16. Key View #1a – Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-17. Key View #1a – Post-Project Conditions (Retaining Wall and Sound Wall)

Source: Appendix F of this EIR

Figure 3.4-18. Key View #1b – Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-19. Key View #1b – Post-Project Conditions (Retaining Wall)

Source: Appendix F of this EIR

Figure 3.4-20. Key View #1b – Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-21. Key View #1b – Post-Project Conditions (Retaining Wall and Sound Wall)

Source: Appendix F of this EIR

Visual Assessment Unit #2 (Vignes Street Corridor)

Views from Key Views #2a and #2b would consist of a new railroad bridge façade on the crossing over Vignes Street, and retaining walls to support new lead tracks in the throat segment (Figure 3.4-22 through Figure 3.4-25). The new bridge would increase the scale of vertical elements in the visual landscape; however, within much of the corridor, the change would not substantially affect existing views in the full build-out condition due to the presence of existing infrastructure. Commuters on Vignes Street would have more proximal views as they approach the bridge.

The bridge would be placed in the same location as the existing bridge. The change in the height of the bridge over Vignes Street would result in a low change to visual character. Viewer response would be low for business owners/employees and visitors; therefore, impacts would be low for these viewer groups. Viewer response would be moderate for commuters; therefore, impacts would be moderately low for this viewer group. Impacts are considered less than significant.

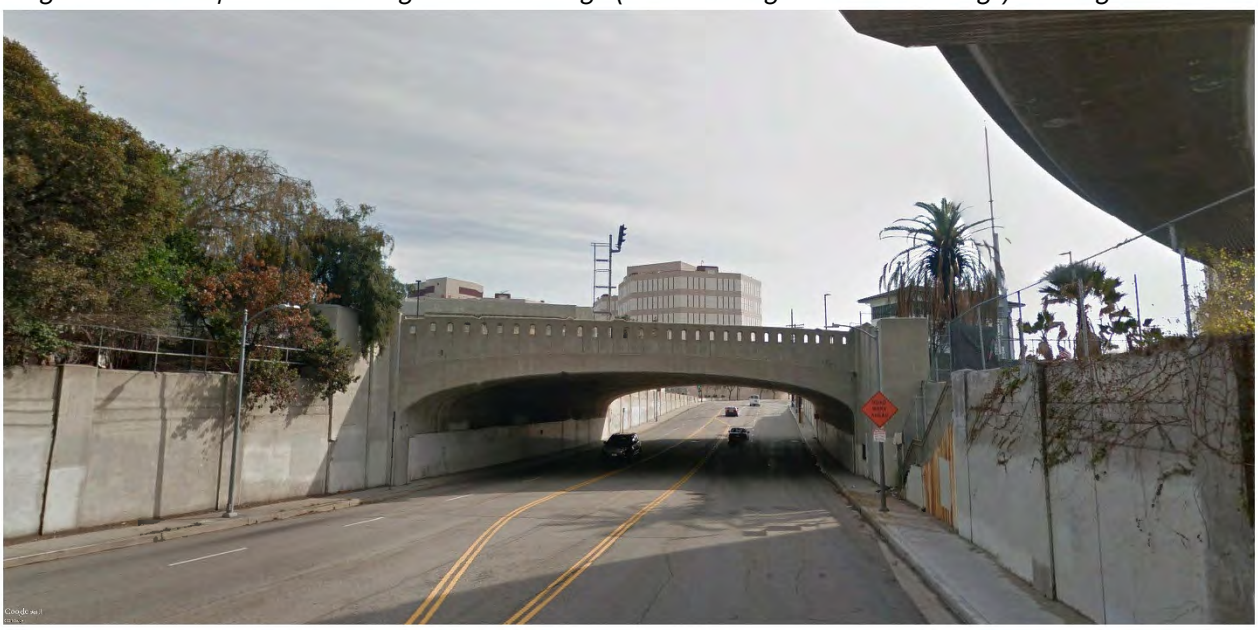
Figure 3.4-22. Key View #2a – Vignes Street Bridge (View Looking West toward Bridge) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-23. Key View #2a – Vignes Street Bridge (View Looking West toward Bridge) Post-Project Conditions

Source: Appendix F of this EIR

Figure 3.4-24. Key View #2b – Vignes Street Bridge (View Looking East toward Bridge) Existing Conditions



Source: Appendix F of this EIR

Figure 3.4-25. Key View #2b – Vignes Street Bridge (View Looking East toward Bridge) Post-Project Conditions

Source: Appendix F of this EIR

Visual Assessment Unit #3 (Cesar Chavez Avenue Corridor/Mozaic Apartments)

Views from Key Views #3a and #3b in the full build-out condition would consist of a new railroad bridge façade on the crossing over Cesar Chavez Avenue, retaining walls to support the new lead tracks and elevated rail yard, and platform canopies (Figure 3.4-26 through Figure 3.4-29). The new bridge would support tracks that would be elevated 10- to 15-feet higher than the existing top of rail at this location. Canopies would be constructed over each platform, and some of the canopies would also be visible from viewers along Cesar Chavez Avenue and residents of the Mozaic Apartments.

The new bridge would be replaced in the same location as the existing bridge, although the new canopies would introduce a more modern element into the railroad ROW. The new bridge and retaining walls to support elevated tracks would increase the scale of vertical and horizontal infrastructure elements in the visual landscape; however, the change would not substantially affect existing views. Commuters on Cesar Chavez Avenue would have more proximal views as they approach the bridge.

The change in the height and span of the bridge over Cesar Chavez Avenue, along with the introduction of new retaining walls, would result in a low change to visual character. Viewer response would be low for business owners/employees and visitors; therefore, impacts would be low for these viewer groups. Viewer response would be moderate for commuters; therefore, impacts would be moderately low for this viewer group. Impacts are considered less than significant.

Figure 3.4-26. Key View #3a – Cesar Chavez Avenue (View Looking West toward Bridge) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-27. Key View #3a – Cesar Chavez Avenue (View Looking West toward Bridge) Post-Project Conditions

Source: Appendix F of this EIR

Figure 3.4-28. Key View #3b – Cesar Chavez Avenue (View Looking East toward Bridge) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-29. Key View #3b – Cesar Chavez Avenue (View Looking East toward Bridge) Post-Project Conditions

Source: Appendix F of this EIR

Visual Assessment Unit #4 (Alameda Street Corridor/Father Serra Park)

From Key Views #4a and #4b (Figure 3.4-30 through Figure 3.4-33), views from the Alameda Street corridor and Father Serra Park looking east toward LAUS would include a small segment of the elevated portion of the above-grade passenger concourse. Views of the elevated portion of the new passenger concourse are expected to take place intermittently for short durations of time as viewers pass LAUS along Alameda Street or utilize the public spaces in the vicinity. The elevated portion of the above-grade passenger concourse would introduce new infrastructure behind the historic LAUS entrance that would include design elements consistent with other transportation-related infrastructure and development in the project study area. The primary viewers would be commuters, tourists, business persons, and nearby residents. Figure 3.4-30 through Figure 3.4-33 depict the new above-grade passenger concourse that would be visible to primary viewers in this visual assessment unit.

As depicted in the simulations, the elevated portion of the above-grade passenger concourse visible from portions of Father Serra Park and the adjacent Plaza area would result in a moderately high change to visual character. Views looking east from Key Views #4a and #4b have changed substantially over time, and the visual landscape has changed dramatically over the last 8 decades due to construction of LAUS; modernization of Alameda and Los Angeles Streets; and construction of US-101 and the El Monte Busway, high-rise condominium buildings, Gateway Plaza, and the MWD Headquarters. While vantage points would be limited because of the topography and existing development within the study area, viewer response would be moderately high for commuters, business persons, and nearby residents due to the historic integrity of LAUS. No changes to the visual quality of LAUS would occur due to the preservation of the historic main building (e.g., tile roof, stucco wall cladding, arched main entrance, decorated beams, and tile floors) and other features, such as the ticketing halls, arcades, clock tower, and patios. The new expanded passageway is located under the rail yard and would not be visible from Key Views #4a and #4b. Therefore, these impacts are considered less than significant.

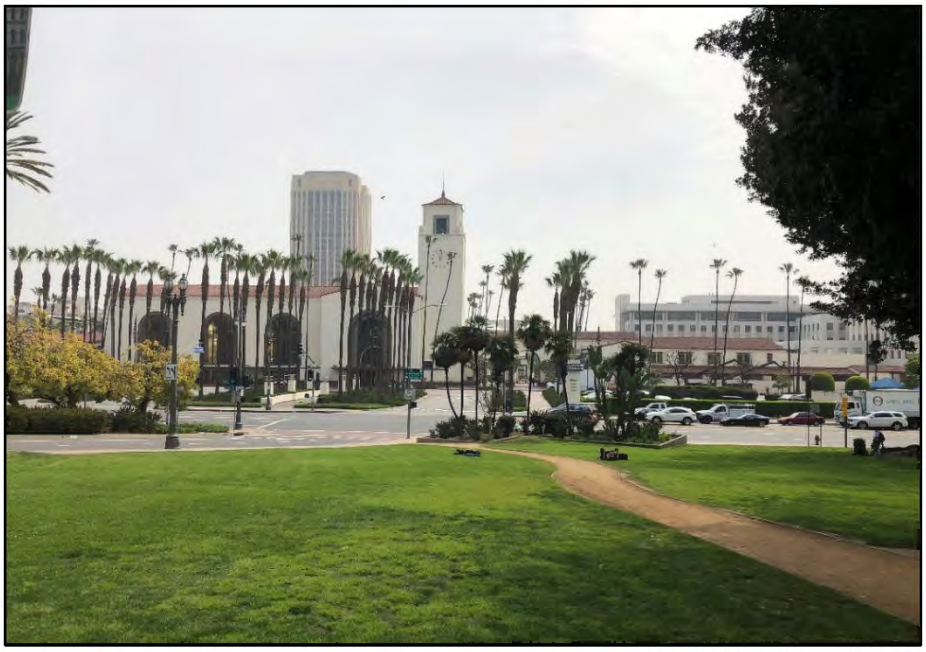
Figure 3.4-30. Key View #4a – Los Angeles Union Station Entrance (View Looking Southeast from Alameda Street toward Los Angeles Union Station) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-31. Key View #4a – Los Angeles Union Station Entrance (View Looking Southeast from Alameda Street toward Los Angeles Union Station) Post-Project Conditions

Source: Appendix F of this EIR

Figure 3.4-32. Key View #4b – Los Angeles Union Station Entrance (View Looking East from Father Serra Park toward Los Angeles Union Station) Existing Conditions



Source: Appendix F of this EIR

Figure 3.4-33. Key View #4b – Los Angeles Union Station Entrance (View Looking East from Father Serra Park toward Los Angeles Union Station) Post-Project Conditions

Source: Appendix F of this EIR

Visual Assessment Unit #5 (Commercial Street/US-101 Corridor)

Views from Key Views #5a, #5b, and #5c would consist of new run-through structures south of LAUS, including the common viaduct/deck that would be constructed over US-101 in the interim condition (Figure 3.4-34 through Figure 3.4-39). Portions of the new above-grade passenger concourse would also be visible along Commercial Street from Key View #5b (Figure 3.4-37) and other similar viewpoints south of US-101. The new expanded passageway is located under the rail yard and would not be visible from Key Views #5a, #5b, and #5c.

The run-through track structures would be highly visible south of LAUS following construction in the interim condition. The viaduct over US-101 would be constructed of materials similar to those used in the Alameda Street overhead crossing and the Gold Line viaduct, but it would be a more prominent structure than the existing Gold Line viaduct over US-101 due to the width of the structure required to accommodate up to 10 run-through tracks. The project would result in a substantial addition of new transportation infrastructure elements to the existing visual environment south of LAUS, but the proposed improvements would be in context with the existing transportation infrastructure in this assessment unit, as it is primarily a transportation corridor with multiple highway and railroad-oriented uses. The scale of the highway corridor and surrounding development is linear and large; therefore, the addition of the run-through track viaduct structure and embankment would not significantly impact the low visual character of this visual assessment unit.

- From Key View #5a, looking southeast from LAUS toward Commercial Street, the run-through track structures would present a new, dominant feature in the foreground landscape and would reduce the visibility of aging industrial buildings and overhead power lines in the background (Figure 3.4-34 and Figure 3.4-35).
- From Key View #5b, looking north from Commercial Street toward US-101 and LAUS, the run-through track structure over US-101 and the elevated portion of the above-grade passenger concourse would dominate the views from Commercial Street looking toward LAUS, the MWD building, and the Metro Headquarters Building (Figure 3.4-36 and Figure 3.4-37).
- From Key View #5c, introduction of the run-through track structure would require placement of outrigger bents over the intersection of Commercial Street and the US-101 on-/off-ramps and would result in potential shadow impacts on Commercial Street below. Overhead bridges with associated bents and abutments within public ROW and at freeway on-and off-ramp locations are a common infrastructure element within and adjacent to Caltrans ROW. There are no scenic resources, residential land uses, or other sensitive land uses that would be significantly impacted by the run-through track structures at this location in Segment 3 (Figure 3.4-38 and Figure 3.4-39).

The changes in views and scale from the run-through track structures would be moderately high, although in context with the surrounding transportation infrastructure and industrial land uses, the proposed project would result in a low change to visual character and quality (resource change). As there are no scenic highways, residential land uses, or other sensitive land uses at this location, viewer response would vary from moderately high for business owners/employees experiencing new, large structures, while the visual response of visitors and commuters on US-101 (northbound and southbound travelers) would be moderately low, as there would be minimal disruption to their visual expectations.

Travelers along northbound and southbound US-101 would be subject to the greatest duration of views of the US-101 viaduct structure, primarily because they would be traveling toward and under the viaduct, and, in some cases, slowly during heavy traffic. Views are anticipated to be no different than any other overhead crossings within Caltrans ROW. Although travelers along US-101 may be subject to a visual change with introduction of new run-through track infrastructure, the aesthetics of the proposed abutments and bents to support the US-101 viaduct would be designed consistent with other overhead crossings within Caltrans ROW. This portion of US-101 is not a protected scenic highway.

US-101 travelers would have limited views of the elevated portion of the new passenger concourse (northbound travelers especially) primarily because the portion of US-101 south of LAUS is at a lower elevation than the rail yard. Views of the new passenger concourse would be perpendicular to the direction travelers would be facing, and the existing retaining wall at the south end of LAUS is the primary visible feature in this area. Upon implementation of the proposed project, the rail yard would be elevated up to 15 feet higher than the existing condition, the southern retaining wall would be expanded, and the above-grade passenger concourse would be constructed in the center of the rail yard, located on average 550 feet – and no closer than 360 feet – north of the US-101 ROW, further reducing the visibility of the concourse to travelers along US-101. Therefore, impacts would be moderate for business persons and low for visitors and commuters. Based on these considerations, impacts are considered less than significant.

Figure 3.4-34. Key View #5a – US-101/Commercial Street (View Looking Southeast from Los Angeles Union Station toward US-101/Commercial Street) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-35. Key View #5a – US-101/Commercial Street (View Looking Southeast from Los Angeles Union Station toward US-101/Commercial Street) Post-Project Conditions

Source: Appendix F of this EIR

Figure 3.4-36. Key View #5b – Commercial Street (View Looking North from Commercial Street toward US-101 and Los Angeles Union Station) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-37. Key View #5b – Commercial Street (View Looking North from Commercial Street toward US-101 and Los Angeles Union Station) Post-Project Conditions

Source: Appendix F of this EIR

Figure 3.4-38. Key View #5c – Commercial Street (View Looking East from US-101 On-/Off-Ramps toward Embankment) Existing Conditions

Source: Appendix F of this EIR

Figure 3.4-39. Key View #5c – Commercial Street (View Looking East from US-101 On-/Off-Ramps toward Embankment) Post-Project Conditions

Source: Appendix F of this EIR

Visual Assessment Unit #6

Within Visual Assessment Unit #6, the proposed project would include the construction of a new above-grade passenger concourse with new expanded passageway. As part of the new passenger concourse, new VCEs and standard amenities, including benches, variable message signs, new lighting, closed-circuit television security cameras, ticket vending machines, passenger waiting areas, and trash receptacles, would be distributed throughout the concourse. Similar to existing conditions, the rail yard would be within an exterior environment, although it would be elevated approximately 15 feet within this visual assessment unit, and the elevated portion of the above-grade passenger concourse would be visible above the tracks. The elevated rail yard would block some existing views of commercial/industrial developments in this visual assessment unit.

The above-grade passenger concourse with new expanded passenger concourse would introduce new, noticeable visual elements in the landscape that would be larger in scale and more modern than the existing visual elements. The elevated portion of the above-grade passenger concourse would present a new, dominant feature in the landscape and would introduce new vertical building elements above the rail yard that would provide prominent views within and outside of LAUS. As a result, viewers would have panoramic views of Downtown Los Angeles. The scale and modern architectural style of the passenger concourse would result in changes to the character of the visual assessment unit; however, the design of the new above-grade passenger concourse would be compatible with the surrounding visual landscape in Downtown Los Angeles, would include sustainable design features consistent with the vision for LAUS, and would improve upon the aesthetics in the existing rail yard, ramp areas, and pedestrian passageway.

The expanded passageway is a minor element to the new above-grade passenger concourse directed at reducing passenger travel times for connection between transit modes. The new expanded passageway is located under the rail yard and is not a primary visual feature compared with the above-grade portion of the passenger concourse.

Views of New Passenger Concourse within Visual Assessment Unit #6

Architectural representations of the above-grade passenger concourse with new expanded passageway depicting the interior and exterior views from within Visual Assessment Unit #6 were prepared. Figure 3.4-40 depicts the viewpoint locations that were selected to depict the concourse. Figure 3.4-41 through Figure 3.4-48 depict views of and within the West Plaza, East Plaza, ingress/egress areas, waiting areas, VCEs, platforms areas, and new expanded passageway (Views A through H). The renderings are conceptual, subject to change, and provided to illustrate the extent of architectural expansion and renovation proposed for LAUS.

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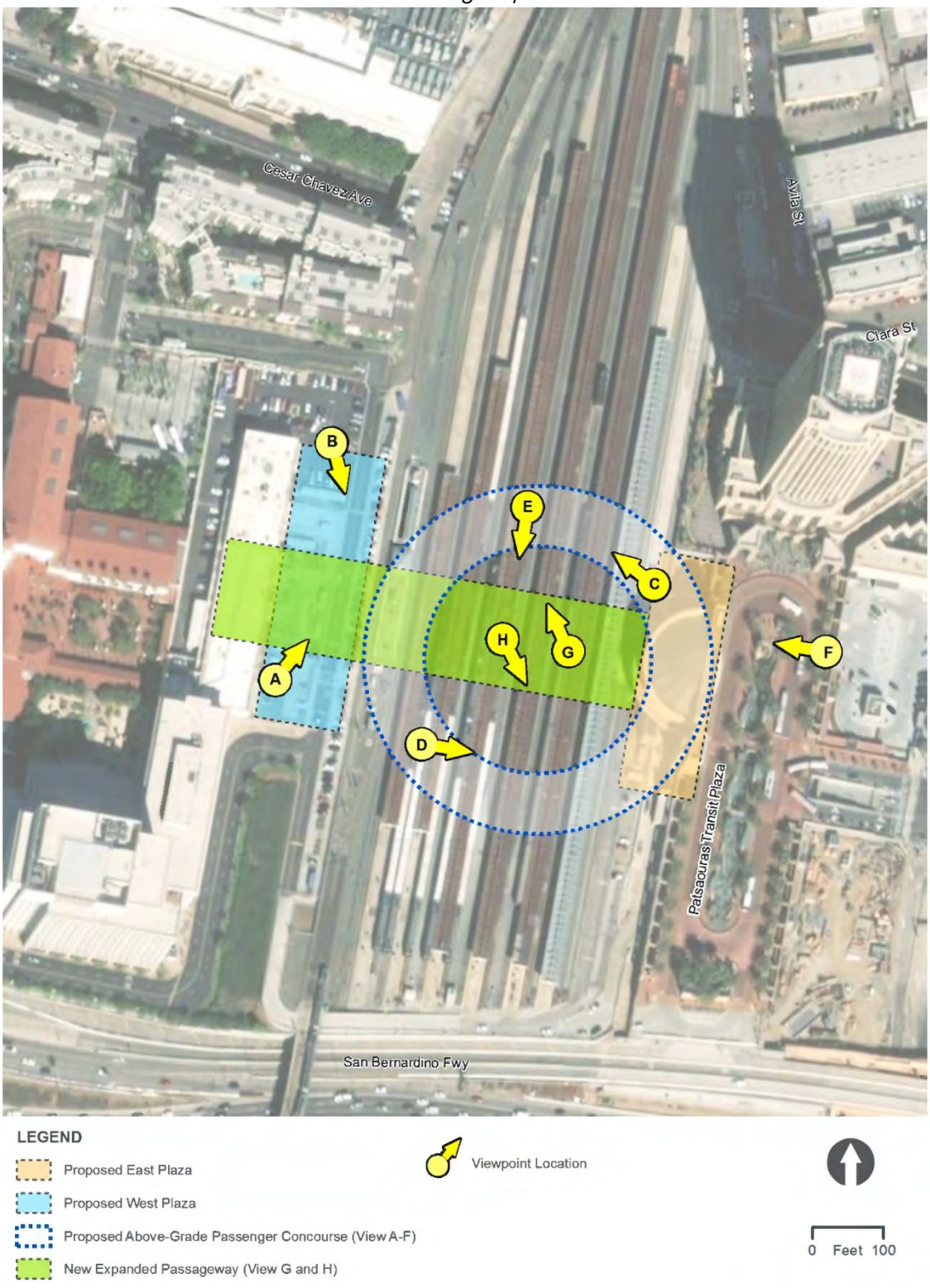
Figure 3.4-40. Viewpoint Locations of the New Above-Grade Passenger Concourse with New Expanded Passageway



Source: Appendix F of this EIR

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Figure 3.4-41 View A – Exterior View of West Plaza Looking North

Figure 3.4-42. View B – Exterior View of West Plaza Looking South

Figure 3.4-43. View C – Interior View of Vertical Circulation Elements Looking Northwest

Figure 3.4-44. View D – Interior View of Retail Space and Waiting Areas Looking East

Figure 3.4-45. View E – Exterior View of Platforms Looking North

Figure 3.4-46. View F – Exterior View of East Plaza Looking Southwest

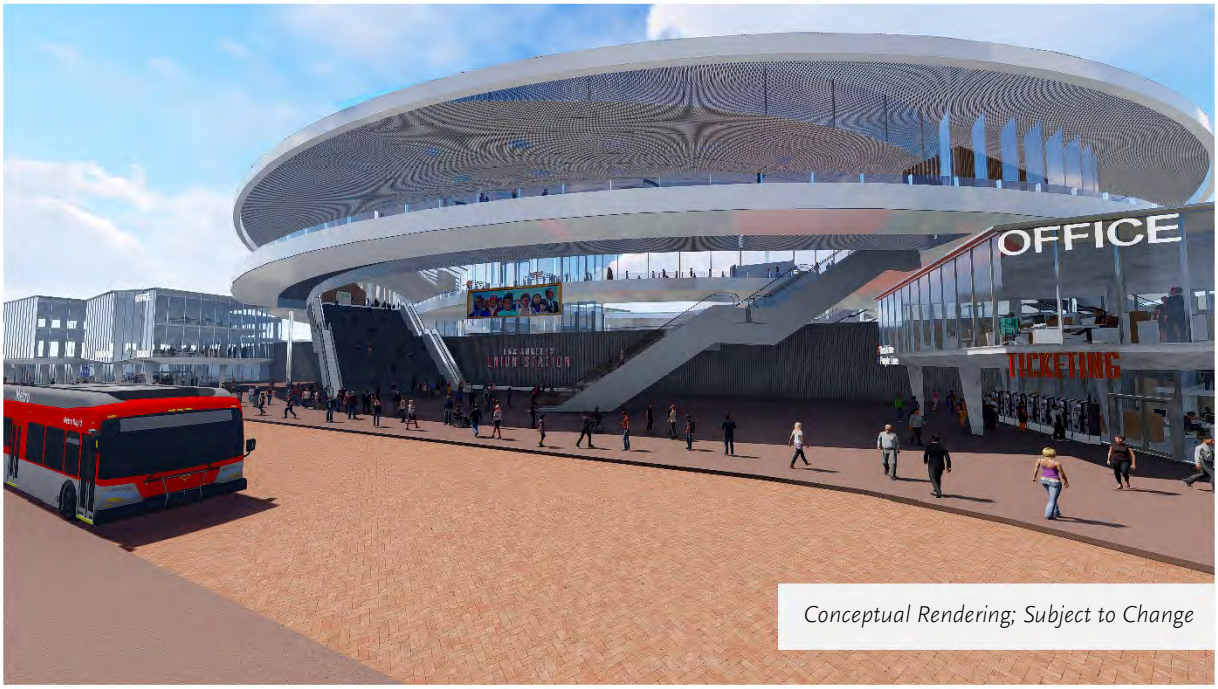

Figure 3.4-47. View G – New Expanded Passageway (Interior View Looking North)

Figure 3.4-48. View H – New Expanded Passageway (Interior View Looking South)

Because the design of the concourse would be compatible with the existing setting, and would be expected to improve the existing aesthetics, the proposed project would result in a moderately high and beneficial change to visual character and quality (resource change). Viewer response would be moderately high for business owners/employees and visitors; therefore, impacts would be moderately high for these viewer groups. Viewer response would be moderate for commuters, so impacts would be moderately high for this viewer group.

Residents of the Mozaic Apartments would have the most prominent views of the new above-grade passenger concourse, particularly those residents with units facing south or east. These residents would have a full view of the new structural elements for extended periods of time; therefore, impacts would be moderately high. The view toward the concourse would be to the southeast, which is currently an open view of the existing rail yard. Based on these considerations, impacts are considered less than significant

THRESHOLD 3.4-D	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Direct Impacts – Construction

During nighttime construction activities, temporary lighting may be used at discrete locations for certain construction activities. The project study area is currently an urban area with multiple sources and types of lighting typically associated with a large, metropolitan city. The use of construction lighting during nighttime hours would not change the visual character of the area or degrade the visual quality because lighting would only be temporary and placed in select locations. Due to the proximity of nearby residences to the construction work zone, residences of Mozaic Apartments and William Mead Homes would be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction. This impact would be significant. Mitigation Measure AES-2 (described in Section 3.4.6) is proposed to reduce construction-related light and glare impacts to a level less than significant.

Direct Impacts – Operations

Visual Assessment Unit #1

The project would result in an increased number of trains and signals in the throat segment, which would result in an increase in lighting as trains move through the area; however, some of this lighting may be blocked by the sound wall required as part of Mitigation Measure NV-1 (described in Section 3.6, Noise and Vibration). Any new light poles that may be required for safety purposes are also anticipated to be blocked by the sound wall.

Visual Assessment Unit #1 is within a developed urban area, and there are a limited amount of light-sensitive land uses (residences in Segments 1 and 2 of the project study area). The additional lighting within an existing railroad ROW in an area heavily utilized by transportation uses would be minor, and impacts related to lighting would not be expected to substantially affect the surrounding area. As a result, impacts are considered less than significant.

Visual Assessment Unit #2

Views within Visual Assessment Unit #2 would be limited primarily to the new bridge that would support new lead tracks over Vignes Street in the full build-out condition. The bridge would be elevated over Vignes Street; however, there would be no additional light or glare from the key views in the throat segment (Key Views #2a and #2b).

Visual Assessment Unit #3

Views within Visual Assessment Unit #3 would primarily consist of the new bridge that would support new lead tracks over Cesar Chavez Avenue, new passenger platform canopies, and the elevated portion of the above-grade passenger concourse in the full build-out condition. The bridge would be elevated, and lights would be incorporated into the design of the elevated rail yard and new passenger concourse to meet current applicable safety standards. Project lighting would also be designed to comply with applicable rules, standards, and guidelines, including Metro rail design criteria, SCRRA design criteria, Illuminating Engineering Society standards, California Building Standards Code 2013 (Title 24), and Leadership in Energy and Environmental Design® (LEED®) standards for new construction (Appendix F of this EIR). These guidelines include requirements for lighting pollution reduction to minimize impacts on passersby and nearby residents by using lighting that complies with CALGreen maximum allowable glare ratings (California Building Standards Code 2013 – Title 24, Part 11) and minimizes backlighting, uplighting, and glare.

The project-related capacity enhancements would facilitate an increased number of trains through LAUS, which would increase the light from trains as they move through the area. On each of the seven elevated platforms, new lighting would be incorporated into the design for safety purposes, which may result in added light for some of the units in the Mozaic Apartments, if not properly designed and installed. The new platform canopies also have the potential to result in additional daytime glare. Currently, there is a large amount of illumination in this visual assessment unit from the existing station, and the amount of lighting added by the project would not represent a noticeable or significant increase over existing levels. For residents in the Mozaic Apartment units nearest to the above-grade passenger concourse, exposure to more direct light and glare could occur in the full build-out condition after the rail yard is elevated (see Visual Assessment Unit #6 below). This is considered a significant impact. Mitigation Measure AES-3 (described in Section 3.4.6) is proposed to reduce operations-related light and glare impacts to a level less than significant.

Visual Assessment Unit #4

Views of proposed infrastructure within Visual Assessment Unit #4 would be very limited in the full build-out condition and would generate a low level of nighttime changes due to illumination. The new above-grade passenger concourse would be illuminated similar to a modern office building rather than a highly illuminated event venue. The light levels would not be significant for users along Alameda Street or those observing from Father Serra Park site across Alameda Street to the west. As a result, impacts are considered less than significant.

Visual Assessment Unit #5

The project would include the construction of run-through track structures over US-101, along Commercial Street, and additional viaduct structures east of Center Street. The scale of the run-through track infrastructure may generate shadows on US-101 and Commercial Street given the time of day and time of year (interim and full build-out conditions); however, there are no residential land uses or other sensitive land uses that would be impacted by the run-through tracks at this location. Lighting would be installed within the soffit of the US-101 viaduct for safety purposes and designed in accordance with ANSI/IESNA Recommended Practice for Tunnel Lighting, RP-22-05, latest edition. The proposed project would facilitate an increased number of trains, adding a new light source through this portion of the project study area; however, there is currently a large amount of lighting in this visual assessment unit from transportation, commercial, and industrial uses, and the amount of lighting added by the run-through track infrastructure would not be substantially noticeable. The proposed project is not expected to result in additional daytime glare in this visual assessment unit.

Because Visual Assessment Unit #5 is within a developed urban area, and because additional lighting would be minor, impacts related to lighting would not be expected to substantially affect the surrounding area. Therefore, impacts are considered less than significant.

Visual Assessment Unit #6

Views within Visual Assessment Unit #6 are limited primarily to the elevated portion of the new passenger concourse, rail yard tracks and platforms, and, to a lesser degree, the run-through structures. The elevated portion of the new passenger concourse would include a new light source similar to an office building that would include lighting on multiple levels throughout the facility. A new source of glare could occur from the glass on the structure or from the new canopies. The new passenger concourse would likely be visible from a distance; however, there is a large amount of existing lighting in this visual assessment unit from transportation, commercial, and industrial uses, and the existing station currently has a large amount of lighting spilling into this visual assessment unit. Therefore, the amount of project-related lighting would not be substantially different.

New lighting would be installed along the entire length of each new elevated platform. Lighting would be placed below canopies, which would reduce the majority of light spill outside of the rail yard; however, impacts would be significant if these elements are not properly designed or placed throughout the facility to minimize impacts on nearby drivers and residential land uses. Additionally, the new canopies themselves could also generate a new source of daytime glare.

New sources of light and glare for residents of the Mozaic Apartments and nearby drivers are considered a significant impact. Mitigation Measure AES-3 (described in Section 3.4.6) is proposed to reduce operations-related light and glare-related impacts to a level less than significant.

Indirect Impacts

The proposed project would not result in any indirect impacts from lighting or glare; therefore, there would be no impact.

3.4.6 Mitigation Measures

Implementation of the following mitigation measures are proposed to reduce significant impacts related to aesthetics.

AES-1 Aesthetic Treatments: Retaining walls in Segments 1 and 2 and the sound wall in Segment 1 shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes and Mozaic Apartments. Based on feedback received during project development from residents of the William Mead Homes property, Metro shall coordinate with HACLA regarding aesthetic enhancements to the retaining wall/sound wall at that location. Materials, color, murals, landscaping, and/or other aesthetic treatments shall be integrated into the design of the retaining wall/sound wall to minimize the dominance and scale of the retaining wall/sound wall.

AES-2 Minimize Nighttime Work and Screen Direct Lighting: Nighttime construction activities near residential areas shall be avoided to the extent feasible. If nighttime work is required, the construction contractor shall install temporary lighting in a manner that directs light toward the construction area and shall install temporary shields as necessary so that light does not spill over into residential areas.

AES-3 Screen Direct Lighting and Glare: During final design, all new or replacement lighting shall comply with maximum allowable California Green Building Standards (CALGreen) glare ratings (California Building Standards Code 2013 – Title 24, Part 11) and shall be designed to be directed away from residential units. Screening elements, including landscaping, shall also be incorporated into the design, where feasible. Low-reflective glass and materials shall also be utilized as part of the above-grade passenger concourse and the new canopies design to reduce daytime glare impacts.

NV-1 Construct Sound Wall (described in Section 3.6, Noise and Vibration)

3.4.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measures AES-1 through AES-3, significant impacts related to aesthetics would be reduced to a level less than significant.

3.5 Air Quality and Global Climate Change

3.5.1 Introduction

This section provides an analysis of air quality, health risk, and global climate change-related impacts associated with the proposed project. Information contained in this chapter is summarized from the *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR).

3.5.2 Regulatory Framework

Table 3.5-1 identifies and summarizes laws, regulations, and plans relative to air quality and global climate change.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
Federal	
FCAA	The FCAA, enacted in 1963, established federal air quality standards, known as NAAQS, and defines nonattainment areas as geographic regions designated as not meeting one or more of the NAAQS. Attainment areas are areas with concentrations of criteria pollutants that are below the levels established by the NAAQS. The FCAA also requires a SIP be prepared for local areas not meeting these standards (nonattainment area) and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. NAAQS and state ambient air quality standards have been established for transportation-related criteria pollutants that have been linked to potential health concerns: CO, NO_2, O_3, particulate matter (which is broken down for regulatory purposes into PM_{10} and $PM_{2.5}$), and SO_2. The FCAA requires U.S. EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved.
State	
California Clean Air Act	The California Clean Air Act designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts explicit authority to implement TCMs and regulate indirect sources of air pollution. The California Clean Air Act focuses on attainment of the California Ambient Air Quality Standards, which for certain pollutants and averaging periods are more stringent than the comparable federal standards. The following are criteria pollutants which both the CARB and U.S. EPA regulate; CO, NO_2, SO_2, O_3, PM_{10}, $PM_{2.5}$, and Pb. California Ambient Air Quality Standards are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, and vinyl chloride, and visibility-reducing particles.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
AB 32	In 2006, AB 32, the Global Warming Solutions Act of 2006, was adopted and set the 2020 GHG emissions reduction goal into law. CARB is tasked with the responsibility of monitoring and reducing GHG emissions pursuant to the guidelines of AB 32.
EO S-3-05 – Statewide GHG Emission Targets	EO S-3-05 was issued to reduce California's GHG emissions to: (1) 2000 levels by 2010; (2) 1990 levels by the 2020; and (3) 80 percent below the 1990 levels by 2050. Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local government or private actions.
EO B-30-15	On April 20, 2015, Governor Edmund G. Brown, Jr. signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed its legislated target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2°C, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels. The targets stated in EO B-30-15 have not been adopted by the state legislature.
EO S-01-07	EO S-01-07, the LCFS calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020.
SB 375 – Regional Emissions Targets	SB 375 was signed into law in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires MPOs to adopt a SCS or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that MPO's RTP.
SB 350	SB 350 was signed into law in September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.
SB 32	SB 32 was signed into law on September 8, 2016 and expands upon AB 32 to reduce GHG emissions. SB32 sets into law the mandated GHG emissions target of 40 percent below 1990 levels by 2030 written into Executive Order B-30-15.
Local	
SCAQMD	SCAQMD has jurisdiction over the SCAB and project study area. To ensure continued progress toward clean air and to comply with state and federal requirements, SCAQMD, in conjunction with the CARB, SCAG, and the U.S. EPA, updates its AQMPs every 3 years. The 2016 AQMP was adopted by the SCAQMD Governing Board on March 3, 2017.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
SCAQMD Rule 402 - Nuisance	Rule 402 prohibits discharge of air contaminants or other materials: • Cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public • Endanger the comfort, repose, health, or safety of any such persons or the public • Cause, or have a natural tendency to cause injury or damage to businesses or property
SCAQMD Rule 403 – Fugitive Dust	This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. Additional requirements apply to construction projects on property with 50 or more acres of disturbed surface area, or for any earth-moving operation with a daily earth-moving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintaining dust control records, and designating a SCAQMD-certified dust control supervisor.
Metro Green Construction Policy	On August 4, 2011, Metro adopted the Green Construction Policy and committed to using greener, less polluting construction equipment and vehicles; and implementing best practices to reduce harmful diesel emissions on all Metro construction projects performed on Metro properties and ROW.
City of Los Angeles General Plan Air Quality Element	The General Plan identifies goals and policies to guide the City of Los Angeles in the implementation of air quality improvement programs and strategies that are consistent with federal, state, and local air quality plans. It is focused on actions to be taken, including adoption of the Clean Air Program, which implements specific air quality programs to achieve stated objectives. Implementation programs include air quality strategies for energy, land use, transportation, and dust suppression.

Notes:
AB=Assembly Bill; AQMP=air quality management plan; CARB=California Air Resources Board; CO=carbon monoxide; EO=Executive Order; FCAA=Federal Clean Air Act; GHG=greenhouse gas; LCFS=Low Carbon Fuel Standard; MPO=Metropolitan Planning Organization; NAAQS=National Ambient Air Quality Standards; NO2=nitrogen dioxide, O_3=ozone; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; RPS= Renewables Portfolio Standard; ROW=right-of-way; RPS= Renewables Portfolio Standard; RTP=Regional Transportation Plan; SB=Senate Bill; SCAB=South Coast Air Basin; SCAQMD=South Coast Air Quality Management District; SCS=Sustainable Communities Strategy; SIP=State Implementation Plan; SO_2=sulfur dioxide; U.S. EPA=United States Environmental Protection Agency

Table 3.5-2 lists the federal and state air pollutant standards, the principal health and atmospheric effects, the typical sources, and the current attainment status of the criteria pollutant emissions.

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Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[8]	Federal Standard[9]	Principal Health and Atmospheric Effects	Typical Sources	SCAB Attainment Status
O_3[2]	1 hour 8 hours	0.09 parts per million (ppm) 0.070 ppm	— 0.070 ppm[4] (4th highest in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known TACs. Biogenic VOC may also contribute.	Low-altitude O_3 is almost entirely formed from ROG or VOC and NO_X in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal:| Extreme Nonattainment (8-hour) State: Nonattainment (1-hour and 8-hour)
CO	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm[1] 6 ppm	35 ppm 9 ppm —	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical O_3.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment/ Maintenance State: Attainment
Respirable Particulate Matter (PM_{10})[2]	24 hours Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 —[2] (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some TACs. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Federal: Attainment/ Maintenance State: Nonattainment

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[8]	Federal Standard[9]	Principal Health and Atmospheric Effects	Typical Sources	SCAB Attainment Status
Fine Particulate Matter ($PM_{2.5}$)[2]	24 hours	—	35 µg/m³	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most DPM – a TAC – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO_x, SO_x, ammonia, and ROG.	Federal: Nonattainment State: Nonattainment
	Annual	12 µg/m³	12.0 µg/m³			
	Secondary Standard (annual)	---	15 µg/m³ (98th percentile over3 years)			
NO_2	1 hour	0.18 ppm	100 ppb[6] (98th percentile over 3 years)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NO_x" group of O_3 precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment/ Maintenance State: Attainment
	Annual	0.030 ppm	0.053 ppm			
SO_2	1 hour	0.25 ppm	75 ppb[7] (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
	3 hours	---	0.5 ppm[9]			
	24 hours	0.04 ppm	0.14 ppm			
	Annual Arithmetic Mean	---	0.03 ppm			

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[8]	Federal Standard[9]	Principal Health and Atmospheric Effects	Typical Sources	SCAB Attainment Status
Pb[3]	Monthly Calendar Quarter Rolling 3-month average	1.5 µg/m³ — —	— 1.5 µg/m³ 0.15 µg/m³[10]	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a TAC and water pollutant.	Pb-based industrial processes like battery production and smelters. Pb paint, leaded gasoline. Aerially deposited Pb from gasoline may exist in soils along major roads.	Federal: Nonattainment (Los Angeles County only) State: Attainment
Sulfate	24 hours	25 µg/m³	—	Premature mortality and respiratory effects. Contributes to acid rain. Some TACs attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Federal: NA State: Attainment/ Unclassified
Hydrogen Sulfide	1 hour	0.03 ppm	—	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Federal: NA State: Attainment/ Unclassified
Visibility Reducing Particles	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 percent	—	Reduces visibility. Produces haze. Note: not related to the Regional Haze program under the FCAA, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.	See particulate matter above.	Federal: NA State: Attainment/ Unclassified

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[8]	Federal Standard[9]	Principal Health and Atmospheric Effects	Typical Sources	SCAB Attainment Status
Vinyl Chloride[3]	24 hours	0.01 ppm	—	Neurological effects, liver damage, cancer. Also considered a TAC.	Industrial processes	Federal: NA State: Attainment/ Unclassified

Notes:

1 *Rounding to an integer value is not allowed for the state 8-hour CO standard. Violation occurs at or above 9.05 ppm.*

2 *Annual PM_{10} NAAQS revoked October 2006; was 50 µg/m³. 24-hour. $PM_{2.5}$ NAAQS tightened October 2006; was 65 µg/m³. Annual $PM_{2.5}$ NAAQS tightened from 15 µg/m³ to 12 µg/m³ December 2012, and secondary standard set at 15 µg/m³.*

3 *The CARB has identified vinyl chloride and the particulate matter fraction of DPM as TACs. DPM is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the CARB and the U.S. EPA have identified Pb and various organic compounds that are precursors to O_3 and $PM_{2.5}$ as TACs. There are no exposure criteria for substantial health effects because of TACs, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.*

4 *Prior to June 2005, the 1-hour NAAQS was 0.12 ppm. Emission budgets for 1-hour O_3 are still in use in some areas where 8-hour O_3 emission budgets have not been developed, such as the San Francisco Bay Area. On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.*

5 *The 0.08 ppm 1997 O_3 standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (July 20, 2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with an emission budget, U.S. EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build versus no build, build versus baseline, or compliance with prior emission budgets for the same pollutant.*

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

7 *The U.S. EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010. Nonattainment areas have not yet been designated as of September 2012.*

8 *California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and 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.*

9 *National standards (other than O_3, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 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 3 years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.*

10 *Lead NAAQS are not considered in Transportation Conformity analysis.*

µg/m³= micrograms per cubic meter; CARB=Air Resources Board; CO=carbon monoxide; DPM=diesel particulate matter; FCAA=Federal Clean Air Act; NA=not applicable; NAAQS=National Ambient Air Quality Standards; NO_2= nitrogen dioxide; NO_x=oxides of nitrogen; O_3=ozone; Pb = lead; $PM_{2.5}$particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ppb=parts per billion; ppm=parts per million; ROG=reactive organic gas; SCAB=South Coast Air Basin; SIP=state implementation plan; SO_2=sulfur dioxide; TAC=toxic air contaminant; U.S. EPA=United States Environmental Protection Agency; VOC=volatile organic compound

3.5.3 Methods for Evaluating Environmental Impacts

Findings and conclusions contained in this analysis are based on the *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR). The following sections provide a summary of the methodology and significance thresholds to determine project-related impacts.

South Coast Air Quality Management District Daily Regional Significance Thresholds

Specific criteria for determining whether the potential air quality impacts of a project are significant are set forth in the SCAQMD's CEQA Air Quality Handbook. Table 3.5-3 lists the daily thresholds for construction and operational emissions established by SCAQMD that were used in the analysis to determine significance.

Table 3.5-3. South Coast Air Quality Management District Air Quality Thresholds of Significance

Pollutant	Construction (pounds/day)	Operation (pounds/day)
NO_x	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
CO	550	550

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NO_x=nitrogen oxide, PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; SO_x=sulfur oxide; VOC=volatile organic compound

Localized Significance Thresholds

SCAQMD has developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area that can be used by public agencies to determine whether or not a project may generate significant localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard.

LSTs are developed based on the ambient concentrations of four criteria pollutants within each defined source receptor area and distance to the nearest sensitive receptor. LSTs are derived based on the location of the activity (i.e., the source receptor area); the emission rates of nitrogen oxide (NOx), carbon monoxide (CO), particulate matter less than 2.5 microns ($PM_{2.5}$), and particulate matter less than 10 microns (PM_{10}); the size of the project study area; and the distance to the nearest exposed individual.

The project study area is located within source receptor area No. 1 (Central Los Angeles). On average, project construction would impact up to 10 acres of the project footprint per day. Table 3.5-4 lists the LST emission rates for a 5-acre site located within 25 meters (the shortest distance with a LST) of a sensitive use.

Table 3.5-4. South Coast Air Quality Management District Localized Significance Thresholds

Pollutant	Construction (pounds/day)	Operation (pounds/day)
NO_x	161	161
PM_{10}	16	4
$PM_{2.5}$	8	2
CO	1,861	1,861

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns

Local Carbon Monoxide Concentrations

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 parts per million (ppm) or more, or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

Greenhouse Gas Emissions

CEQA Guidelines Section 15064.4(b) provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider: (1) the extent to which the project may increase or reduce GHG emissions as compared with existing conditions, (2) whether the project's GHG emissions exceed a threshold of significance identified by the lead agency for the project, and (3) the extent to which the project complies with regulations. The analysis of the potential impacts from the proposed project's GHG emissions follows the above-mentioned CEQA Guidelines. SCAQMD's interim thresholds for commercial, residential, mixed use and industrial development projects are as follows:

- Industrial projects – 10,000 metric tons (MT) of carbon monoxide equivalent (CO_2e) per year
- Residential, commercial, and mixed use projects (including parks, warehouses, etc.) - 3,000 MT CO2e per year

For the purposes of determining whether or not GHG emissions from affected projects are adverse, SCAQMD specifies that project emissions must include direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. Based on this direction, construction emissions were amortized over the life of the project (defined as 30 years) added to the operational emissions, and compared with the applicable GHG significance thresholds.

The proposed project is a transportation project that does not fit into the industrial, commercial, or residential project categories. SCAQMD has not proposed or adopted a threshold level for transportation projects. For purposes of this analysis, both direct and indirect GHG emissions from the project are discussed in the context of the 3,000-MT threshold levels. In accordance with scientific consensus regarding the cumulative nature of GHGs, the analysis herein analyzes the cumulative contribution of project-related GHG emissions; therefore, impacts are analyzed with respect to 2040 cumulative emissions only.

Incremental Health Risk Significance Threshold

The SCAQMD CEQA Air Quality Handbook lists significance thresholds for toxic air contaminants (TAC). TACs refer to a diverse group of air pollutants capable of causing chronic and acute adverse impacts on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, and painting operations that may use substances such as ammonia, asbestos, benzene, cadmium, lead, and trichloroethylene. SCAQMD's TAC thresholds are as follows:

- Maximum incremental cancer risk ≥ 10 in 1 million
- Cancer burden > 0.5 excess cancer cases
- Chronic and acute hazard index ≥ 1.0

Since diesel-related exhaust, specifically diesel particulate matter (DPM), is considered a TAC by the California Air Resources Board (CARB), a human health risk assessment was conducted to assess the risk associated with the proposed project. A health risk assessment consists of three parts: (1) a TAC emissions inventory, (2) air dispersion modeling to evaluate off-site concentrations of TAC emissions, and (3) assessment of risks associated with predicted concentrations. The health risk assessment was conducted using the guidelines provided by the California Office of Environmental Health Hazard Assessment for the Air Toxics Hot Spots Program and the health risk assessment guidelines developed by the California Air Pollution Control Officers Association.

Generally, for long-term emission sources, the worst case for cancer risk is based on 30 years of exposure, but shorter exposure durations are acceptable for non-residential land uses. For short-term events, such as construction, the cancer risks are based on the duration of exposure. Worst case for acute adverse health effects is based on the hour with the highest emissions. Worst case for chronic adverse health effects is based on the annual average emissions. For residential land uses, the exposure period is assumed to be 30 years. For sites where workers could be located, the exposure period is assumed to be 25 years. For other land uses, including recreational land uses, the exposure period is assumed to be 9 years.

3.5.4 Existing Conditions

Regional Setting

The project is located in Los Angeles County, an area within the South Coast Air Basin (SCAB), which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the SCAB is administered by SCAQMD; a regional agency created for the basin.

The SCAB is an area of approximately 6,745 square miles bounded by the Pacific Ocean to the west and south, and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The terrain and geographical location determine the distinctive climate of the SCAB, which is a coastal plain with connecting broad valleys and low hills.

Southern California lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the SCAB is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all impact the accumulation and dispersion of pollutants throughout the SCAB, making it an area of high air pollution potential.

The greatest air pollution impacts in the SCAB occur from June through September, mainly because of the combination of large amounts of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, causing elevated air pollution levels. Pollutant

concentrations in the SCAB vary with location, season, and time of day. Ozone (O3) concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the SCAB and adjacent desert.

Climate

The annual average temperature varies little throughout the SCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The annual average maximum temperature recorded at the Los Angeles Downtown University of Southern California Campus Station, the closest climatological station to the project study area, is 74.0 degrees Fahrenheit and the annual average minimum is 55.8 degrees Fahrenheit. January is typically the coldest month in this area of the SCAB.

The majority of annual rainfall in the SCAB occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern part of the SCAB along the coastal side of the mountains. Average monthly rainfall measured at the Los Angeles Downtown University of Southern California Campus Station varied from 3.38 inches in February to 0.27 inch or less between May and September, with an average annual total of 14.77 inches.

The SCAB experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed from midafternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Inversion layers are essential in determining O_3 formation. O_3 and its precursors mix and react to produce higher concentrations under an inversion. The inversion will also trap and hold directly emitted pollutants, such as CO. PM_{10} is both directly emitted and created indirectly in the atmosphere as a result of chemical reactions. Concentration levels are directly related to inversion layers due to the limitation of mixing space.

Surface or radiation inversions are formed when the ground surface becomes cooler than the air above it during the night. The earth's surface goes through a radiative process on clear nights, when heat energy is transferred from the ground to a cooler night sky. As the earth's surface cools during the evening hours, the air directly above it also cools, while air higher up remains relatively warm. The inversion is destroyed when heat from the sun warms the ground, which, in turn, heats the lower layers of air; this heating stimulates the ground level air to float up through the inversion layer.

The combination of stagnant wind conditions and low inversions produces the greatest concentration of pollutants. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the

lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are from CO and NO_X because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Local Setting

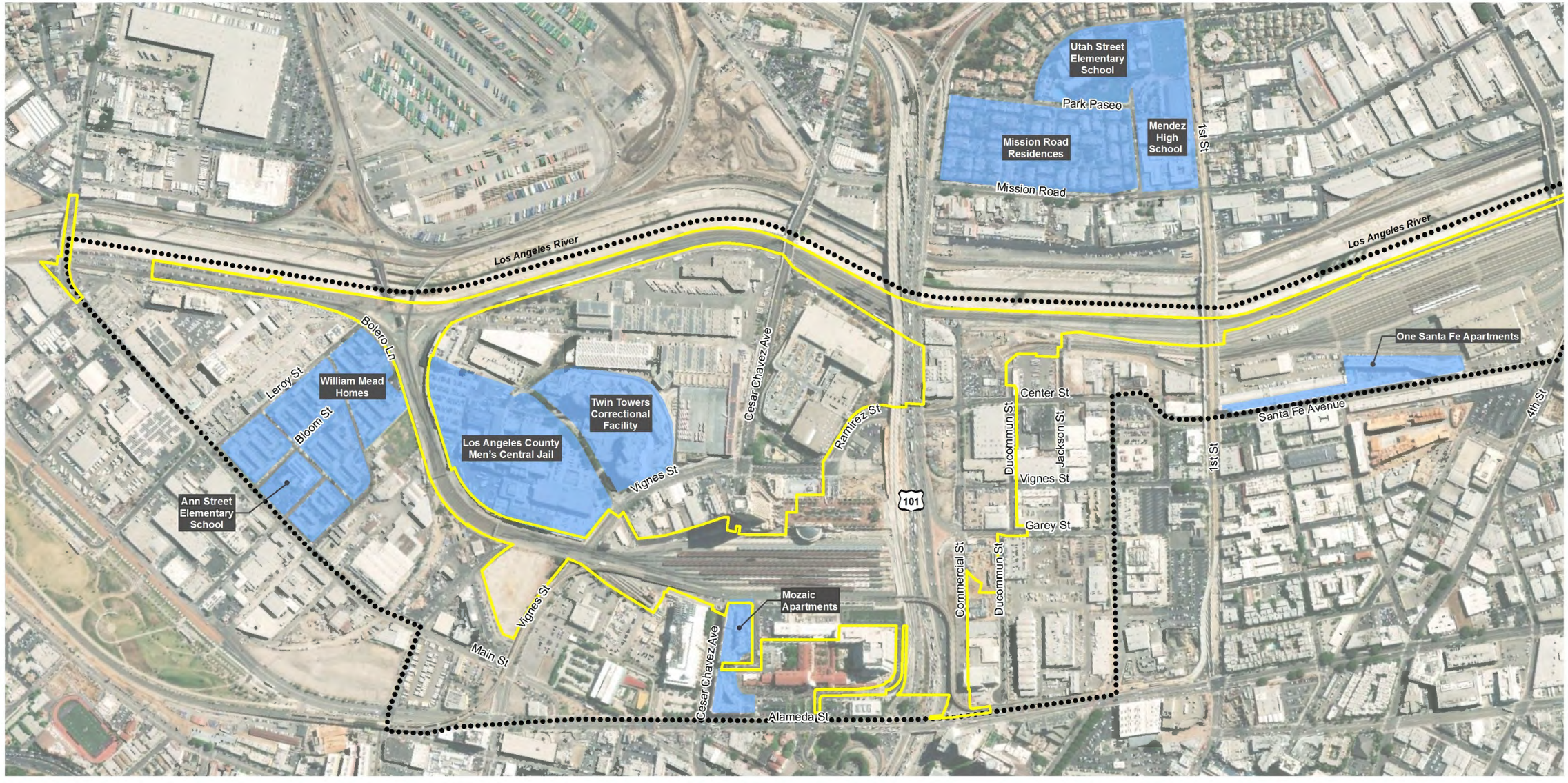
SCAQMD monitors air quality conditions at 37 locations throughout the SCAB. The closest monitoring station to the project study area is the Los Angeles North Main Street Station. With respect to National Ambient Air Quality Standards (NAAQS), the U.S. Environmental Protection Agency (EPA) has classified the SCAB as attainment/maintenance for CO, PM_{10}, and nitrogen dioxide (NO_2), attainment/unclassified for sulfur dioxide (SO_2), and nonattainment for O_3 and $PM_{2.5}$ (Table 3.5-2). Based on this attainment status, the air pollutants of greatest concern in the SCAB are O_3 and $PM_{2.5}$.

Sensitive Receptors

Sensitive populations are more susceptible to the impacts of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics, particulate matter, and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The majority of the sensitive receptors within or adjacent to the project study area are residential uses. The nearby sensitive receptors within or adjacent to the project study area are summarized below and depicted on Figure 3.5-1:

- William Mead Homes
- Mozaic Apartments
- Utah Street Elementary School
- Twin Towers Correctional Facility
- Los Angeles County Men's Central Jail
- One Santa Fe Apartments
- Metro Offices
- Ann Street Elementary School
- Terminal Annex
- Mission Road Residences
- Mendez High School

Figure 3.5-1. Sensitive Receptors



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Naturally Occurring Asbestos

Based on a review of *A General Location Guide for Ultramafic Rocks in California — Areas More Likely to Contain Naturally Occurring Asbestos* prepared by the California Department of Conservation, Division of Mines and Geology, the project study area is not located in a region of Los Angeles County that has been identified as containing serpentine or ultramafic rock.

Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, fluoroform, s, s, s, 2-tetrafluoroethane, and difluoroethane.

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

GHGs vary considerably in terms of global warming potential, which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The global warming potential of each gas is measured relative to CO_2, the most abundant GHG. The definition of global warming potential for a particular GHG is the ratio of heat trapped by 1 unit mass of the GHG to the ratio of heat trapped by 1 unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of CO_2e.

3.5.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G and Appendix F of the CEQA Guidelines, project impacts on air quality or global climate change would be considered significant if the project would:

A. Conflict with or obstruct implementation of the applicable air quality plan

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors)

D. Expose sensitive receptors to substantial pollutant concentrations

E. Create objectionable odors affecting a substantial number of people

F. Generate GHG emissions, either directly or indirectly, that may have an adverse impact on the environment

G. Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Thresholds Requiring No Further Analysis

All thresholds were determined to result in an impact associated with the project. Therefore, all thresholds identified for air quality and global climate change are analyzed below.

Analysis

THRESHOLD 3.5-A	Conflict with or obstruct implementation of the applicable air quality plan

Direct Impacts – Construction

Construction activities are temporary in nature. With implementation of best available control measures identified in the SCAQMD Rule 403 for fugitive dust emissions from grading activities and other construction activities would not conflict with or obstruct implementation of the regional air quality management plan (AQMP). Therefore, no impact would occur.

Direct Impacts– Operations

Air Quality Management Plan

An AQMP describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQMP's main purpose is to bring the area into compliance with the requirements of federal and state air quality standards. The AQMP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the AQMP.

Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration or impede the progress of air quality goals stated in the local AQMPs. The air quality models use project-specific data to estimate the quantity of pollutants generated from the implementation of a project.

As identified in the analysis below for Threshold 3.5-B and 3.5-C, by providing increased station capacity for regional/intercity rail and accommodating the planned HSR system, the proposed project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. As discussed below, the proposed project would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of GHG emissions and VMT. Therefore, the increased emissions from rail operations would be offset by reductions in VMT in 2026, 2031, and 2040. For this reason, it is reasonable to conclude that the proposed project would not exceed SCAQMD's thresholds and would more than likely contribute to net reductions. In addition, upon implementation of Mitigation Measure AQ-3 (described in Section 3.5.6), the net increase in daily emissions would be reduced to below the SCAQMD thresholds. Therefore, the proposed project is consistent with the objectives of the AQMPs and would not impact implementation of the AQMPs.

Regional Transportation Plan/Sustainable Communities Strategy (2016) Consistency

The project is included in the 2016 RTP/SCS as a financially constrained project. As presented in Table 3.5-5, the proposed project is consistent with the applicable goals established as part of the 2016 RTP/SCS.

Impacts are considered less than significant.

Table 3.5-5. Consistency with 2016 Regional Transportation Plan/Sustainable Communities Strategy Goals

RTP/SCS Goal	Link US Consistency Analysis
G1 Align the plan investments and policies with improving regional economic development and competitiveness	Not applicable.
G2: Maximize mobility and accessibility for all people and goods in the region	Consistent. By increasing capacity the project is maximizing intermodal connections and improving mobility. The project is also leveraging and integrating existing transit systems and infrastructure into multimodal improvements. Although the project does not directly increase train service, the improvements facilitate future increases in service to the levels forecasted in the 2016 RTP/SCS because other infrastructure improvements on the regional rail system, including LOSSAN Corridor are required to meet the forecasted rail increases.
G3: Ensure travel safety and reliability for all people and goods in the region	Consistent. By providing increased station capacity for regional/intercity rail and accommodation of HSR, the project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. In addition, the project would promote ease of access and enhance safety features for non-motorized transportation.
G4: Preserve and ensure a sustainable regional transportation system	Consistent. Construction of the project would improve the efficiency through and around LAUS by providing infrastructure to support potential one-seat rides to key destinations in Southern California.
G5: Maximize the productivity of our transportation system	Consistent. The elimination of the stub-end tracks at LAUS would increase the productivity/efficiency of the transportation system in the project study area and Southern California as a whole. Reduced train idling times would result in shortened wait times for passengers.
G6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking)	Consistent. The project would reduce train idling times at LAUS by anywhere from 5 to 25 minutes through improved operating efficiencies, which would significantly reduce local diesel emissions and improve air quality. In addition, the project would improve active transportation by improving pedestrian linkages within 0.25 mile and through the addition of bicycle infrastructure/hubs, racks, and lockers.
G7: Actively encourage and create incentives for energy efficiency, where possible	Consistent. The above-grade passenger concourse with new expanded passageway is being designed to meet LEED® Silver requirements. By introducing high efficiency lighting the project can reduce energy consumption. Light-emitting diode technology, dimmer driver, or designs for lights would minimize light pollution.

Table 3.5-5. Consistency with 2016 Regional Transportation Plan/Sustainable Communities Strategy Goals

RTP/SCS Goal	Link US Consistency Analysis
G8: Encourage land use and growth patterns that facilitate transit and active transportation	Consistent. The project enhances transit options at LAUS and has the potential to stimulate transit-related land use and growth patterns. The project facilitates and does not preclude active transportation projects in the vicinity of LAUS.
G9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies	Consistent. The above-grade passenger concourse with new expanded passageway is being designed to meet applicable security requirements.

Source: Appendix G of this EIR

Notes:
HSR=High-Speed Rail; LAUS=Los Angeles Union Station; LEED= Leadership in Energy and Environmental Design®; Link US=Link Union Station; LOSSAN= Los Angeles-San Diego-San Luis Obispo; RTP/SCS=Regional Transportation Plan/Sustainable Communities Strategy

Indirect Impacts

No indirect impacts related to air quality plan conflicts would occur with implementation of the project.

THRESHOLD 3.5-B AND 3.5-C	B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors)

Direct Impacts – Construction

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, material delivery trips, and heavy-duty haul truck trips generated from construction activities during each construction phase. In addition, earthwork activities would result in fugitive dust emissions and paving operations would release reactive organic gases (ROG) from off-gassing. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources based on the description provided in Section 2.0, Project Description.

Equipment Exhaust and Related Construction Activities. The construction equipment hours, haul truck trips, and employee commute trips required to build the proposed project were estimated in April 2018. The construction emissions were calculated using the equipment list and U.S. EPA and SCAQMD emission rates. The total exhaust emissions generated during the entire construction period are shown in

Table 3.5-6 for the proposed project. As shown in Table 3.5-6, the daily construction emissions would exceed the SCAQMD's NO_x, PM_{10}, and $PM_{2.5}$ thresholds.

Table 3.5-6. Construction Emissions

Emission Source	CO (pounds)	ROG (pounds)	NO_x (pounds)	PM_{10} (pounds)	$PM_{2.5}$ (pounds)	CO_2e (pounds)
Off-road equipment	211,520	30,234	200,783	15,418	11,073	58,493,453
On-road equipment	15,259	1,227	57,020	6,147	2,488	24,650,247
Fugitive dust	—	—	—	450,000	94,500	—
Total	226,780	31,460	257,803	471,564	108,061	83,143,700
Average day (pounds/day)	151.2	21.0	171.9	314.4	72.0	55,429.1
SCAQMD thresholds	550	75	100	150	55	—
Exceedance	No	No	Yes	Yes	Yes	—

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District

The annual exhaust emissions generated during the average construction year are listed in Table 3.5-7.

Table 3.5-7. Annual Construction Emissions

Emission Source	CO (tons)	ROG (tons)	NO_x (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_2e (tons)
Off-road equipment	105.8	15.1	100.4	7.7	5.5	29,246.7
On-road equipment	7.6	0.6	28.5	3.1	1.2	12,325.1
Fugitive dust	—	—	—	225.0	47.3	—
Total	113.4	15.7	128.9	235.8	54.0	41,571.8
Average year	18.9	2.6	21.5	39.3	9.0	6,928.6

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas

LST Analysis. Table 3.5-8 shows the construction-related emissions of CO, NO_X, PM_{10}, and $PM_{2.5}$ compared to the LSTs for Central Los Angeles area at a distance of 25 meters for the proposed project. As required by the SCAQMD's LST Methodology, only the on-site construction emissions are included. As shown, the calculated emissions rates for the proposed on-site construction activities would exceed the LSTs for PM_{10} and $PM_{2.5}$.

Table 3.5-8. Summary of On-Site Construction Emissions, Localized Significance

	Emissions			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Total (pounds)	212,283.3	203,633.6	465,725.1	105,697.8
Daily (pounds)	141.5	135.8	310.5	70.5
SCAQMD thresholds	1,861	161	16	8
Exceedance	No	No	Yes	Yes

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; SCAQMD=South Coast Air Quality Management District

Based on the results of the construction air quality analysis, impacts are considered significant. Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5.6) would reduce the exhaust and fugitive dust emissions (CO, NO_X, ROG, PM_{10}, and $PM_{2.5}$) generated on site during construction.

- Mitigation Measure AQ-1 requires compliance with the SCAQMD's Rule 403 (fugitive dust control measures) and would reduce on-site fugitive dust emissions by 50 percent.
- Mitigation Measure AQ-2 requires all on-site construction equipment to meet or exceed U.S. EPA's Tier 4 final emission standards for all off-road construction equipment to be fueled using 100 percent renewable diesel. This measure would reduce the on-site exhaust emissions by up to 95 percent when compared with the average construction fleet for the SCAB.

Table 3.5-9 identifies the mitigated construction emission levels for the peak day. Annual exhaust emissions generated during the entire construction period are listed in Table 3.5-10. As identified in Table 3.5-9, after implementation of mitigation, the peak daily construction emissions would still exceed the SCAQMD's PM_{10} threshold.

Table 3.5-9. Construction Emissions After Mitigation

Emission Source	CO (pounds)	ROG (pounds)	NO_X (pounds)	PM_{10} (pounds)	$PM_{2.5}$ (pounds)	CO_2e (pounds)
Off-road equipment	57,593	11,316	32,029	5,449	2,569	37,924,387
On-road equipment	15,259	1,227	57,020	6,147	2,488	24,650,247
Fugitive dust	—	—	—	225,000	47,250	—
Total	72,852	12,543	89,049	236,596	52,307	62,574,634
Average day (pounds/day)	48.6	8.4	59.4	157.7	34.9	41,716.4
SCAQMD thresholds	550	75	100	150	55	—
Exceedance	No	No	No	Yes	No	—

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District

Table 3.5-10. Annual Construction Emissions After Mitigation

Emission Source	CO (tons)	ROG (tons)	NO_X (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_2e (tons)
Off-road equipment	28.8	5.7	16.0	2.7	1.3	18,962.2
On-road equipment	7.6	0.6	28.5	3.1	1.2	12,325.1
Fugitive dust	—	—	—	112.5	23.6	—
Total	36.4	6.3	44.5	5.8	2.5	31,287.3
Average year	6.1	1.0	7.4	1.0	0.4	5,214.5

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas

Table 3.5-11 identifies the on-site construction emissions after implementation of Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5.6). As shown in Table 3.5-11, after implementation of mitigation, the calculated emissions rates for the on-site construction activities associated with the proposed project would continue to exceed the LSTs for PM_{10} and $PM_{2.5}$.

Table 3.5-11. Summary of On-Site Construction Emissions After Mitigation, Localized Significance

	Emissions			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Total (pounds)	64,755.0	38,438.3	233,092.1	51,043.8
Daily (pounds)	43.2	25.6	155.4	34.0
SCAQMD thresholds	1,861	161	16	8
Exceeds daily SCAQMD threshold?	No	No	Yes	Yes

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NOX=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; SCAQMD = South Coast Air Quality Management District

Based on these results, with the implementation of the proposed mitigation, construction emissions resulting from the proposed project would exceed the localized SCAQMD significance thresholds; therefore, impacts would remain significant and unavoidable. As discussed in Table 3.5-2, particulate matter emissions can contribute to localized health effects. Specific effects include, but are not limited to, irritated eyes and respiratory tracts, decreased lung capacity, and increased cancer and mortality. While it is common practice to analyze the correlation between an individual facility's TAC emissions and expected localized human health impacts, a similar analysis is not feasible for criteria pollutants. Instead, potential human health impacts associated with criteria air pollutants are evaluated on a regional level based on the NAAQS established by the U.S. EPA. Available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual project's air emissions and specific human health impacts.

Attempting to identify a change in background pollutant concentrations that can be attributed to a single project would be a theoretical exercise. A single project's emissions constitute only a miniscule portion of the immense volume of air contained in a regional air basin. Additionally, background concentrations of regional pollutants are not temporally or geographically uniform throughout an air basin and are constantly fluctuating based on meteorology and other environmental factors. An analysis attempting to take "tons per year" regional mass emissions data and translate that into precise pollutant concentrations, as well as project-specific health effects, would not be practical or meaningful.

For the same reason, even if a model were developed to accurately ascertain local increases in concentrations of criteria pollutants, it would remain impossible to correlate that increase in concentration to a specific health impact. Such models are designed to determine regional,

population-wide health impacts and are not accurate when applied at the local level. Refer to Threshold 3.5-D for an evaluation of the project's health risks associate with DPM emissions prepared pursuant to California Office of Environmental Health Hazard Assessment guidelines.

Direct Impacts – Operations

Operational Emissions. Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would have potential long-term operational air quality impacts from increased train activity, mobile source emissions associated with vehicular trips in the project study area, and stationary source emissions from on-site energy consumption. U.S. EPA's Emission Factors for Locomotives was used to calculate the rail emissions and the CalEEMod model was used to calculate the mobile source and energy emissions associated with the proposed project.

An indicator of the project's regional operational impact is the net influence on emissions in the project study area for a future year. The calculated results of the daily train cruising, train idling, on-road, and operational emissions are presented in Table 3.5-12, Table 3.5-14, and Table 3.5-16 for the 2026, 2031, and 2040 conditions, respectively. In addition, the annual emissions are presented in Table 3.5-13, Table 3.5-15, and Table 3.5-17 for the 2026, 2031, and 2040 conditions, respectively. As shown in Table 3.5-12 and Table 3.5-13, the daily and annual rail emissions decrease with the proposed project. This reduction is due to the small increase in rail operations being offset by the reduced dwell and travel times. As shown in Table 3.5-14 and Table 3.5-16, the net increase in daily emissions would exceed the SCAQMD thresholds for NO_X. Impacts would be significant. Mitigation Measure AQ-3 (described in Section 3.5.6) would reduce the rail exhaust emissions (CO, NO_X, ROG, PM_{10}, and $PM_{2.5}$).

Table 3.5-12. 2026 Daily Operational Emissions

Source	Pollutant Emissions (pounds/day)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	273.4	8.1	0.4	5.1	5.0
Rail emissions with project	105.5	253.8	7.5	0.4	4.8	4.6
Total project emissions	105.5	253.8	7.5	0.4	4.8	4.6
Net increase	-8.1	-19.6	-0.6	0.0	-0.4	-0.4
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	No	No	No	No	No

Source: Appendix G of this EIR
Notes:
The new passenger concourse would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_x=sulphur oxide

Table 3.5-13. 2026 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	17.0	40.8	1.2	0.1	0.8	0.7
Rail emissions with project	15.7	37.9	1.1	0.1	0.7	0.7
Total project emissions	15.7	37.9	1.1	0.1	0.7	0.7
Net increase	-1.2	-2.9	-0.1	0.0	-0.1	-0.1

Source: Appendix G of this EIR
Notes:
The new passenger concourse would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SO_x=sulphur oxide

Table 3.5-14. 2031 Daily Operational Emissions

Source	Pollutant Emissions (pounds/day)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	196.5	5.0	0.4	3.0	2.9
Rail emissions with project	173.8	300.6	7.6	0.6	4.6	4.4
Operational emissions with project	13.4	6.9	14.7	0.1	6.0	1.7
Total project emissions	187.2	307.5	22.3	0.7	10.6	6.1
Net increase	73.6	111.0	17.3	0.3	7.6	3.2
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	Yes	No	No	No	No

Source: Appendix G of this EIR
Notes:
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_x=sulphur oxide

Table 3.5-15. 2031 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	17.0	29.3	0.7	0.1	0.4	0.4
Rail emissions with project	25.9	44.8	1.1	0.1	0.7	0.7
Operational emissions with project	2.1	1.2	2.6	0.0	1.0	0.3
Total project emissions	28.0	46.0	3.7	0.1	1.7	1.0
Net increase	11.1	16.7	3.0	0.0	1.2	0.5

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SO_x=sulphur oxide

Table 3.5-16. 2040 Cumulative Daily Operational Emissions

Source	Pollutant Emissions (pounds/day)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	98.2	2.3	0.4	1.3	1.2
Rail emissions with project	190.0	164.2	3.8	0.7	2.1	2.1
Operational emissions with project	10.6	6.8	14.4	0.1	6.0	1.6
Total project emissions	200.6	171.0	18.2	0.8	8.1	3.7
Net increase[1]	86.9	72.8	15.9	0.4	6.9	2.4
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	Yes	No	No	No	No

Source: Appendix G of this EIR

Notes:

[1] *Train emission increases noted in 2040 would be counteracted by increases in ridership and corresponding reductions in VMT. The 2016 RTP/SCS reports reductions of up to 157 tons per year of NOx, up to 3 tons per year of PM_{10} and $PM_{2.5}$, respectively, 81 tons per year of ROG, and up to 711 tons per year of CO in Los Angeles County in 2040 (SCAG 2016).*

CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_x=sulphur oxide

Table 3.5-17. 2040 Cumulative Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Rail emissions no project	17.0	14.7	0.3	0.1	0.2	0.2
Rail emissions with project	28.3	24.5	0.6	0.1	0.3	0.3
Operational emissions with project	1.7	1.1	2.6	0.0	1.0	0.3
Total project emissions	30.0	25.6	3.2	0.1	1.3	0.6
Net increase[1]	13.1	10.9	2.8	0.0	1.1	0.4

Source: Appendix G of this EIR

Notes:

[1] *Rail emission increases noted in 2040 would be counteracted by increases in ridership and corresponding reductions in VMT. The 2016 RTP/SCS reports reduction of up to 157 tons per year of NOx, up to 3 tons per year of PM_{10} and $PM_{2.5}$, respectively, 81 tons per year of ROG, and up to 711 tons per year of CO in Los Angeles County in 2040 (SCAG 2016).*

CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; ROG=reactive organic gas SO_x=sulphur oxide

LST Analysis. Table 3.5-18, Table 3.5-19, and Table 3.5-20 show the operational emissions of CO, NO_x, PM_{10}, and $PM_{2.5}$ compared with the LSTs for the Central Los Angeles area at a distance of 25 meters for the 2026, 2031, and 2040 conditions, respectively. Table 3.5-18, Table 3.5-19, and Table 3.5-20 include the net increase in rail operation emissions generated within the project study area, all of the area source and energy emissions, and 5 percent of the on-road emissions. As shown in Table 3.5-18, Table 3.5-19, and Table 3.5-20 the calculated emissions rates for proposed on-site operational activities would not exceed the LSTs.

Table 3.5-18. 2026 Summary of On-Site Operational Emissions, Localized Significance

Source	Emission Rates (pounds/day)			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Rail operations	-8.1	-19.6	-0.4	-0.4
SCAQMD thresholds	1,861	161	4	2
Exceeds daily SCAQMD threshold?	No	No	No	No

Source: Appendix G of this EIR

Notes:
The new passenger concourse would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.
CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; SCAQMD=South Coast Air Quality Management District

Table 3.5-19. 2031 Summary of On-Site Operational Emissions, Localized Significance

	Emission Rates (pounds/day)			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Rail operations	60.2	104.1	1.6	1.5
Area, energy, and on-road	1.1	0.6	0.3	0.1
Total	61.2	104.7	1.9	1.6
SCAQMD thresholds	1,861	161	4	2
Exceedance	No	No	No	No

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NOx=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; SCAQMD=South Coast Air Quality Management District

Table 3.5-20. 2040 Summary of On-Site Operational Emissions, Localized Significance

	Emission Rates (pounds/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Rail operations	76.3	66.0	0.9	0.8
Area, energy, and on-road	0.9	0.6	0.3	0.1
Total[1]	77.2	66.6	1.2	0.9
SCAQMD thresholds	1,861	161	4	2
Exceedance	No	No	No	No

Source: Appendix G of this EIR

Notes:

[1] ***Train emission increases noted in 2040 would be counteracted by increases in ridership and corresponding reductions in VMT. The 2016 RTP/SCS reports reductions of up to 157 tons per year of NOx, up to 3 tons per year of PM_{10} and $PM_{2.5}$, respectively, 81 tons per year of ROG, and up to 711 tons per year of CO in Los Angeles County in 2040 (SCAG 2016).***

CO=carbon monoxide; NO_x=nitrogen oxide; PM_{10}=particulate matter less than 10 microns; $PM_{2.5}$=particulate matter less than 2.5 microns; SCAQMD=South Coast Air Quality Management District

Operational Emissions after Mitigation. Implementing Mitigation Measure AQ-3 (described in Section 3.5.6) would require implementation of emerging technologies to reduce the CO, NO_X, ROG, PM_{10}, and $PM_{2.5}$ exhaust emissions by 10, 10, 5, 30, and 30 percent, respectively. Mitigation Measure AQ-3 (described in Section 3.5.6) also requires an adaptive air quality mitigation plan to be implemented, in conjunction with replacement of the rail fleet with zero- or low-emission locomotives consistent with *2018 California State Rail Plan,* to achieve a reduction of pollutant concentrations below a level that would not exceed SCAQMD's 10 in 1 million cancer risk threshold at any of the residential uses in the project study area. Requiring the use of emerging technologies to reduce pollutant concentrations below a level that would not exceed SCAQMD health risk thresholds would further reduce the 2031 emissions by 30 percent and the 2040 emissions by 37 percent.

The mitigated results of the daily operational emissions are presented in Table 3.5-21, Table 3.5-22, and Table 3.5-23 for the 2026, 2031, and 2040 conditions, respectively. In addition, the mitigated annual emissions are presented in Table 3.5-24, Table 3.5-25, and Table 3.5-26 for the 2026, 2031, and 2040 conditions, respectively. As identified in Table 3.5-21, Table 3.5-22, and Table 3.5-23, the net increase in daily emissions would be reduced to below the SCAQMD thresholds after mitigation; therefore, upon implementation of Mitigation Measure AQ-3 (described in Section 3.5.6), impacts would be reduced to a level less than significant.

Table 3.5-21. Daily Operational Emissions (2026) - Mitigated

Source	Pollutant Emissions (pounds/day)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	273.4	8.1	0.4	5.1	5.0
Rail emissions with project	94.9	228.4	7.2	0.4	3.3	3.2
Total project emissions	94.9	228.4	7.2	0.4	3.3	3.2
Net increase	-18.7	-45.0	-0.9	0.0	-1.8	-1.8
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	No	No	No	No	No

Notes:
The new passenger concourse would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.

CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_X=sulfur oxides

Table 3.5-22. Daily Operational Emissions (2031) - Mitigated

Source	Pollutant Emissions (pounds/day)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	196.5	5.0	0.4	3.0	2.9
Rail emissions with project	123.8	214.0	5.7	0.5	2.5	2.5
Operational emissions with project	13.4	6.9	14.7	0.1	6.0	1.7
Total project emissions	137.2	220.9	20.4	0.6	8.5	4.2
Net increase	23.6	24.4	15.4	0.2	5.5	1.3
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	No	No	No	No	No

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_X=sulfur oxides

Table 3.5-23. Daily Operational Emissions (2040) - Mitigated

Source	Pollutant Emissions (pounds/day)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no project	113.6	98.2	2.3	0.4	1.3	1.2
Rail emissions with project	126.9	109.7	2.7	0.5	1.1	1.1
Operational emissions with project	10.6	6.8	14.4	0.1	6.0	1.6
Total project emissions	137.5	116.5	17.1	0.6	7.1	2.7
Net increase	23.9	18.3	14.8	0.2	5.8	1.5
SCAQMD threshold	550	55	55	150	150	55
Exceedance	No	No	No	No	No	No

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District; SO_X=sulfur oxides

Table 3.5-24. Annual Operational Emissions (2026) - Mitigated

Source	Pollutant Emissions (tons)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail Emissions – No Project	17.0	40.8	1.2	0.1	0.8	0.7
Rail Emissions with Project	14.2	34.1	1.1	0.1	0.5	0.5
Total Project Emissions	14.2	34.1	1.1	0.1	0.5	0.5
Net Increase	-2.8	-6.7	-0.1	0.0	-0.3	-0.2

Notes:
The new passenger concourse would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.

CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-25. Annual Operational Emissions (2031) - Mitigated

Source	Pollutant Emissions (tons)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no project	17.0	29.3	0.7	0.1	0.4	0.4
Rail emissions with project	18.5	31.9	0.9	0.1	0.4	0.4
Operational emissions with project	2.1	1.2	2.6	0.0	1.0	0.3
Total project emissions	20.6	33.1	3.5	0.1	1.4	0.7
Net increase	3.6	3.8	2.8	0.0	1.0	0.3

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-26. Annual Operational Emissions (2040) - Mitigated

Source	Pollutant Emissions (tons)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no project	17.0	14.7	0.3	0.1	0.2	0.2
Rail emissions with project	18.9	16.4	0.4	0.1	0.2	0.2
Operational emissions with project	1.7	1.1	2.6	0.0	1.0	0.3
Total project emissions	20.6	17.5	3.0	0.1	1.2	0.5
Net increase	3.6	2.8	2.7	0.0	1.0	0.3

Notes:
CO=carbon monoxide; NO_X =oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-27, Table 3.5-28, and Table 3.5-29 identify the mitigated operational emissions of CO, NO_X, PM_{10}, and $PM_{2.5}$ compared with the LSTs for the Central Los Angeles area at a distance of 25 meters for the 2026, 2031 and 2040 conditions, respectively.

As shown in Table 3.5-27, Table 3.5-28, and Table 3.5-29, the calculated emissions rates for proposed on-site operational activities would not exceed the LSTs after mitigation.

Table 3.5-27. Summary of On-Site Operational Emissions, Localized Significance (2026) - Mitigated

Source	Emission Rates (pounds/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Rail operations	-18.7	-45.0	-1.8	-1.8
SCAQMD thresholds	1,861	161	4	2
Exceeds daily SCAQMD threshold?	No	No	No	No

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; SCAQMD=South Coast Air Quality Management District

Table 3.5-28. Summary of On-Site Operational Emissions, Localized Significance (2031) - Mitigated

Source	Emission Rates (pounds/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Rail operations	-2.8	-6.7	-0.3	-0.2
Area, energy, and on-road	1.1	0.6	0.3	0.1
Total	-1.7	-6.1	0.0	-0.1
SCAQMD thresholds	1,861	161	4	2
Exceeds daily SCAQMD threshold?	No	No	No	No

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; SCAQMD=South Coast Air Quality Management District

Table 3.5-29. Summary of On-Site Operational Emissions, Localized Significance (2040) - Mitigated

Source	Emission Rates (pounds/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Rail operations	13.3	11.5	-0.2	-0.1
Area, energy, and on-road	0.9	0.6	0.3	0.1
Total	14.2	12.1	0.1	0.0
SCAQMD thresholds	1,861	161	4	2
Exceeds daily SCAQMD threshold?	No	No	No	No

Notes:
CO=carbon monoxide; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; SCAQMD=South Coast Air Quality Management District

Carbon Monoxide Screening Analysis. The methodology required for a CO local analysis is summarized in the Transportation Project-Level Carbon Monoxide Protocol (Appendix G of this EIR), Section 3 (Determination of Project Requirements), and Section 4 (Local Analysis). Section 4 contains Figure 3 (Local CO Analysis [included in Appendix G of this EIR]). This flowchart is used to determine the type of CO analysis required for the proposed project. Below is a step-by-step explanation of the flowchart. Each level cited is followed by a response, which, in turn, determines the next applicable level of the flowchart for the project. The flowchart begins at Level 1:

- Level 1. Is the project in a CO non-attainment area?

  No, the project site is located in an area that has demonstrated attainment with the federal CO standards and is in attainment for the state standards.

- Level 1 (continued). Was the area redesignated as "attainment" after the 1990 Clean Air Act?

  Yes.

- Level 1 (continued). Has "continued attainment" been verified with the local air district, if appropriate?

  Yes, the SCAB was designated as attainment/maintenance by U.S. EPA June 11, 2007. (Proceed to Level 7.)

- Level 7. Does the project worsen air quality?
  No. The project does not meet any of the following criteria that would worsen air quality:

  a) The project significantly increases the percentage of vehicles operating in cold start mode. Increasing the number of vehicles operating in cold start mode by as little as 2 percent should be considered potentially significant.

  No additional parking is contemplated as part of this project. The trips associated with Metrolink and Amtrak are considered transit-oriented in nature and are not expected to result in additional vehicular trips because they would be arriving/departing LAUS as pedestrians. The additional vehicle trips associated with this retail space would be limited to vendors, deliveries, and employees required to serve the transit riders at this retail space. Therefore, the percentage of vehicles operating in cold start mode is the same or lower for the intersection under study compared with those used for the intersection in the attainment plan. It is assumed that all vehicles are in a fully warmed-up mode. Therefore, this threshold is not met.

  b) The project significantly increases traffic volumes. Increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is also a reduction in average speeds.

  Based on the traffic analysis prepared for the project, the project's contribution to the local intersection volumes is less than 5 percent of the total.

  c) The project worsens traffic flow. For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 miles per hour) should be regarded as worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered as worsening traffic flow.

  Based on the traffic analysis prepared for the project (Appendix E of this EIR), there are two intersections where the project would result in significant changes in delay (Intersection #2 Garey Street and Commercial Street and Intersection #4 Center Street and Commercial Street). With implementation of Mitigation Measure TR-2 (described in Section 3.3), the LOS at Intersection #4 would operate at acceptable LOS B (AM and PM peak hours) under the 2031 and 2040 with project conditions. Implementation of Mitigation Measure TR-2 (described in Section 3.3, Transportation and Traffic) would improve operations at Intersection #4 to better than pre project conditions, and minimize the operational traffic delay at Intersection #4, thereby reducing the operational traffic impact at Intersection #4 to a level less than significant. No additional feasible mitigation measures would minimize the operational traffic delay at Intersection #2 under the 2031 and 2040 with project conditions. The project-related increased delays would continue to exceed LADOT guidelines for Intersection #2. Therefore, this threshold is not met.

The proposed project is not expected to result in any concentrations exceeding the 1-hour or 8-hour CO standards. Therefore, a detailed CALINE4 CO hot-spot analysis is not required. Impacts are considered less than significant.

Indirect Impacts

As stated previously, by providing increased station capacity, the project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel, thereby reducing the VMT in the area. This means that the project's increase in emissions would be offset by reductions in VMT in 2040 (Appendix G of this EIR). For this reason, it is reasonable to conclude that the project would not exceed SCAQMD's thresholds but would more than likely contribute to net reductions in 2040. Based on these results, the proposed project would experience an air quality benefit in 2031 that would incrementally increase as more trains (equipped with Tier 4 emission controls) come into operation in response to increased ridership. Impacts are considered beneficial.

THRESHOLD 3.5-D	Expose sensitive receptors to substantial pollutant concentrations

Direct Impacts – Construction

Project construction would result in emissions of DPM from heavy-duty construction equipment and trucks operating in the project study area (e.g., water trucks and haul trucks). DPM is characterized as a TAC by CARB. The California Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic non-carcinogenic effects from long-term (chronic) exposure, but it has not identified health effects due to short-term (acute) exposure to DPM.

Cancer risk is defined as the increase in lifetime probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased probability in 1 million. The cancer risk from inhalation of a TAC is estimated by calculating the inhalation dose in units of milligrams/kilogram body weight per day based on an ambient concentration in units of micrograms per cubic meter, breathing rate, and exposure period, and multiplying the dose by the inhalation cancer potency factor, expressed as milligrams/kilogram body weight per day. Typically, cancer risks for residential receptors and similar sensitive receptors are estimated based on a lifetime (30 years) of continuous exposure; however, for the purposes of this analysis, a 6-year exposure scenario, corresponding to the approximate construction period for the entire project, was evaluated. In addition, the long-term GHG emissions would be reduced to less than zero.

The DPM (PM_{10}) emissions for all emission sources, during the construction period were compiled and added together to represent worst-case emission source for DPM. Due to the long-term nature of health risks, the modeling used the average day emissions instead of the peak day emissions. The equipment and vehicles included in this total are:

Proposed project with above-grade passenger concourse with new expanded passageway

- Off-road vehicles and equipment — 5.78 pounds/day PM_{10}
- Haul trucks (assume last mile on site) — 0.10 pounds/day PM_{10}
- Total DPM (PM_{10}) — 5.88 pounds/day PM_{10}

The DPM emissions from diesel-powered construction equipment and on-site diesel-powered trucks that would be used during construction are provided in Appendix G of this EIR. Total emissions of construction-related exhaust PM_{10}, as a surrogate for DPM, during the overall construction period were calculated and converted to grams per second for use in the American Meteorological Society/Environmental Protection Agency Regulatory Model. Table 3.5-30 identifies the modeled annual average DPM concentration, and the associated cancer risks, at the closest land uses to the project. As shown, the peak cancer risks during construction exceed the SCAQMD's threshold of 10 in 1 million. This impact is considered significant. Mitigation Measure AQ-2 (described in Section 3.5.6), which requires all off-road equipment to meet or exceed U.S. EPA's Tier 4 final emissions standards and to be fueled using 100 percent renewable diesel, would reduce this impact to a level less than significant.

Table 3.5-30. Modeled Cancer Risks During Construction

Receptor	Land Use Type	Modeled Annual DPM Concentrations ($\mu g/m^3$)	Cancer Risks (per million)
William Mead Homes	Residential	0.045	16.5
William Mead Homes	Residential	0.040	14.8
Mozaic Apartments	Residential	0.231	85.0
Mission Road Residences	Residential	0.016	5.9
Mission Road Residences	Residential	0.013	4.9
One Santa Fe Apartments	Residential	0.002	0.7
Utah Street Elementary School	School	0.009	0.1
Mendez High School	School	0.010	0.2
Ann Street Elementary School	School	0.061	0.9
Twin Towers Correctional Facility	Commercial worker	0.161	1.8

Table 3.5-30. Modeled Cancer Risks During Construction

Receptor	Land Use Type	Modeled Annual DPM Concentrations (µg/m³)	Cancer Risks (per million)
Los Angeles County Men's Central Jail	Commercial worker	0.102	1.1
Metro Offices	Commercial worker	0.491	5.4
Terminal Annex	Commercial worker	0.171	1.9

***Source: Appendix G of this EI**R*
Notes:
µg/m³= micrograms per cubic meter; DPM=diesel particulate matter

Table 3.5-31 identifies the after mitigation modeled annual average DPM concentration, and the associated cancer risks, at the closest land uses to the project footprint. The complete results are included in Appendix G of this EIR As shown, the peak cancer risks would be reduced to below the SCAQMD's threshold of 10 in 1 million. Impacts are considered less than significant.

Table 3.5-31. Modeled Cancer Risks – Mitigated

Receptor	Land Use Type	Modeled Annual DPM Concentrations (µg/m³)	Cancer Risks (per million)
William Mead Homes	Residential	0.004	1.6
William Mead Homes	Residential	0.004	1.5
Mozaic Apartments	Residential	0.023	8.4
Mission Road Residences	Residential	0.002	0.6
Mission Road Residences	Residential	0.001	0.5
One Santa Fe Apartments	Residential	0.000	0.1
Utah Street Elementary School	School	0.001	0.0
Mendez High School	School	0.001	0.0
Ann Street Elementary School	School	0.006	0.1
Twin Towers Correctional Facility	Commercial worker	0.016	0.2
Los Angeles County Men's Central Jail	Commercial worker	0.010	0.1

Table 3.5-31. Modeled Cancer Risks – Mitigated

Receptor	Land Use Type	Modeled Annual DPM Concentrations (µg/m³)	Cancer Risks (per million)
Metro Offices	Commercial worker	0.048	0.5
Terminal Annex Alameda Street	Commercial worker	0.017	0.2

Source: Appendix G of this EIR

Notes:
µg/m³micrograms per cubic meter; DPM=diesel particulate matter

Table 3.5-32 identifies the chronic hazard index for the maximally exposed individual under the unmitigated and mitigated conditions. A chronic hazard index is calculated by dividing the annual average concentration of a toxic pollutant by the chronic reference exposure level for that pollutant. For DPM, the chronic reference exposure level is 5.0. As shown, the chronic hazard index at this location is lower than the SCAQMD significance threshold of less than 1.0.

Table 3.5-32. Chronic Hazard Index

Receptor	Chronic Hazard Index	
	Unmitigated	Mitigated
Maximally exposed individual	0.046	0.005

Source: Appendix G of this EIR

In summary, after implementation of Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5.6), the anticipated cancer risk associated with construction of the project is 8.4 in 1 million at the closest sensitive receptor, which is below the SCAQMD's 10 in 1 million threshold, and impacts would be reduced to a level less than significant. As such, the exposure of project-related TAC emission impacts on sensitive receptors during construction is considered less than significant.

Naturally Occurring Asbestos. As previously indicated, the project study area is not located in a region of Los Angeles County that has been identified as containing serpentine or ultramafic rock. Therefore, there is a negligible potential that construction workers and nearby sensitive receptors would be exposed to naturally occurring asbestos during project construction. No impact would occur.

Direct Impacts – Operations

Implementation of the project would alter the flow of rail operations within the project study area. In addition, the project would facilitate an increase in rail operations in the future by increasing the current train capacity. Due to the flexibility provided by the new run-through tracks, the future daily operations on a track-by-track basis are unknown. Therefore, for the purpose of the DPM risk analysis, the project study

area was modeled as point sources for idling within the station and as line sources for the rail operations within the project study area. Table 3.5-33 through Table 3.5-39 list the peak cancer risks at 13 locations within the project study area for the existing, 2026 no project, 2026 with project, 2031 no project, 2031 with project, 2040 no project, and 2040 with project condition, respectively. The cancer risks at the residential land uses were calculated using a 30-year exposure while the school and office uses were calculated using 9-and 25-year exposures, respectively. As shown, when compared with conditions without the project, the project-related increase in cancer risk would exceed SCAQMD's threshold of 10 in 1 million. However, when compared to the existing (2016) conditions, the cancer risks would be substantially lower at all of the receptor locations. The reductions between the existing and future conditions is due to the gradual replacement of the existing rail fleet with new Tier 4 locomotives. This replacement would occur with or without the proposed project.

Table 3.5-33. Summary of the Existing Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)
William Mead Homes	Residential	1.537	910.3
William Mead Homes	Residential	1.174	695.5
Mozaic Apartments	Residential	1.446	856.5
Mission Road Residences	Residential	0.360	213.3
Mission Road Residences	Residential	0.339	200.5
One Santa Fe Apartments	Residential	0.151	89.7
Utah Street Elementary School	School	0.322	7.2
Mendez High School	School	0.326	7.3
Ann Street Elementary School	School	1.481	33.3
Twin Towers Correctional Facility	Commercial worker	0.838	38.1
Los Angeles County Men's Central Jail	Commercial worker	0.946	42.9
Metro Offices	Commercial worker	1.119	50.8
Terminal Annex	Commercial worker	1.059	48.1

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-34. Summary of the 2026 No Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)
William Mead Homes	Residential	0.596	352.9	-557.4
William Mead Homes	Residential	0.455	269.6	-425.8
Mozaic Apartments	Residential	0.561	332.3	-524.1
Mission Road Residences	Residential	0.140	82.7	-130.6
Mission Road Residences	Residential	0.131	77.8	-122.8
One Santa Fe Apartments	Residential	0.059	34.8	-54.9
Utah Street Elementary School	School	0.125	2.8	-4.4
Mendez High School	School	0.126	2.8	-4.5
Ann Street Elementary School	School	0.574	12.9	-20.4
Twin Towers Correctional Facility	Commercial worker	0.325	14.8	-23.3
Los Angeles County Men's Central Jail	Commercial worker	0.367	16.6	-26.3
Metro Offices	Commercial worker	0.434	19.7	-31.1
Terminal Annex	Commercial worker	0.411	18.6	-29.4

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-35. Summary of the 2026 with Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)	Increase from No Project Conditions (per million)
William Mead Homes	Residential	0.507	300.3	-610.1	-52.7
William Mead Homes	Residential	0.384	227.2	-468.3	-42.4
Mozaic Apartments	Residential	0.406	240.6	-615.8	-91.7
Mission Road Residences	Residential	0.204	120.7	-92.6	37.9
Mission Road Residences	Residential	0.186	110.2	-90.3	32.4
One Santa Fe Apartments	Residential	0.058	34.1	-55.6	-0.7
Utah Street Elementary School	School	0.148	3.3	-3.9	0.5
Mendez High School	School	0.163	3.7	-3.7	0.8
Ann Street Elementary School	School	0.532	12.0	-21.4	-1.0
Twin Towers Correctional Facility	Commercial worker	0.252	11.4	-26.6	-3.3
Los Angeles County Men's Central Jail	Commercial worker	0.271	12.3	-30.6	-4.3
Metro Offices	Commercial worker	0.349	15.8	-35.0	-3.9
Terminal Annex	Commercial worker	0.290	13.2	-34.9	-5.5

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-36. Summary of the 2031 No Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)
William Mead Homes	Residential	0.348	205.8	-704.5
William Mead Homes	Residential	0.265	157.2	-538.2
Mozaic Apartments	Residential	0.327	193.4	-663.1
Mission Road Residences	Residential	0.081	48.2	-165.1
Mission Road Residences	Residential	0.077	45.3	-155.2
One Santa Fe Apartments	Residential	0.034	20.3	-69.4
Utah Street Elementary School	School	0.073	1.6	-5.6
Mendez High School	School	0.074	1.7	-5.7
Ann Street Elementary School	School	0.335	7.5	-25.8
Twin Towers Correctional Facility	Commercial worker	0.189	8.6	-29.5
Los Angeles County Men's Central Jail	Commercial worker	0.214	9.7	-33.2
Metro Offices	Commercial worker	0.253	11.5	-39.3
Terminal Annex	Commercial worker	0.239	10.9	-37.2

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-37. Summary of the 2031 with Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)	Increase from No Project Conditions (per million)
William Mead Homes	Residential	0.563	333.6	-576.7	127.8
William Mead Homes	Residential	0.425	251.6	-418.8	94.3
Mozaic Apartments	Residential	0.330	195.6	-1.3	2.2
Mission Road Residences	Residential	0.220	130.1	-17.8	81.8
Mission Road Residences	Residential	0.201	119.3	-25.3	74.0
One Santa Fe Apartments	Residential	0.061	35.9	-30.8	15.6
Utah Street Elementary School	School	0.161	3.6	-22.7	2.0
Mendez High School	School	0.177	4.0	-371.4	2.3
Ann Street Elementary School	School	0.591	13.3	-13.8	5.8
Twin Towers Correctional Facility	Commercial worker	0.237	10.8	-24.2	2.2
Los Angeles County Men's Central Jail	Commercial worker	0.279	12.7	-5.9	3.0
Metro Offices	Commercial worker	0.329	15.0	-10.7	3.5
Terminal Annex	Commercial worker	0.245	11.1	-1.0	0.3

Source: Appendix G of this EIR
Notes:
µg/m³=micrograms per cubic meter

Table 3.5-38. Summary of the 2040 No Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)
William Mead Homes	Residential	0.149	88.2	-822.1
William Mead Homes	Residential	0.114	67.4	-628.1
Mozaic Apartments	Residential	0.140	82.9	-773.6
Mission Road Residences	Residential	0.035	20.7	-192.6
Mission Road Residences	Residential	0.033	19.4	-181.1
One Santa Fe Apartments	Residential	0.015	8.7	-81.0
Utah Street Elementary School	School	0.031	0.7	-6.5
Mendez High School	School	0.032	0.7	-6.6
Ann Street Elementary School	School	0.143	3.2	-30.1
Twin Towers Correctional Facility	Commercial worker	0.081	3.7	-34.4
Los Angeles County Men's Central Jail	Commercial worker	0.092	4.2	-38.8
Metro Offices	Commercial worker	0.108	4.9	-45.9
Terminal Annex	Commercial worker	0.102	4.7	-43.4

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-39. Summary of the 2040 with Project Cancer Risks at Specific Receptors

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks (per million)	Increase from Existing Conditions (per million)	Increase from No Project Conditions (per million)
William Mead Homes	Residential	0.264	156.3	-754.0	68.1
William Mead Homes	Residential	0.199	117.9	-577.6	50.5
Mozaic Apartments	Residential	0.155	91.6	-764.9	8.7
Mission Road Residences	Residential	0.103	60.9	-152.4	40.3
Mission Road Residences	Residential	0.094	55.9	-144.6	36.5
One Santa Fe Apartments	Residential	0.028	16.8	-72.9	8.1
Utah Street Elementary School	School	0.075	1.7	-5.5	1.0
Mendez High School	School	0.083	1.9	-5.5	1.2
Ann Street Elementary School	School	0.277	6.2	-27.1	3.0
Twin Towers Correctional Facility	Commercial worker	0.111	5.0	-33.0	1.4
Los Angeles County Men's Central Jail	Commercial worker	0.131	5.9	-37.0	1.8
Metro Offices	Commercial worker	0.154	7.0	-43.8	2.1
Terminal Annex	Commercial worker	0.115	5.2	-42.8	0.6

Source: Appendix G of this EIR

Notes:
µg/m³=micrograms per cubic meter

Table 3.5-40 shows the chronic hazard index for the maximally exposed individual for the existing, 2026, 2031, and 2040 conditions (with and without the project). As shown, the chronic hazard indices are lower than the SCAQMD significance threshold of less than 1.0.

Table 3.5-40. Chronic Hazard Index

Maximally Exposed Individual	Chronic Hazard Index
Existing conditions	0.31
2026 no project	0.12
2026 with project	0.10
2031 no project	0.07
2031 with project	0.11
2040 no project	0.03
2040 with project	0.05
SCAQMD threshold	1.0

Source: Appendix G of this EIR
Notes:
SCAQMD= South Coast Air Quality Management District

In summary, when compared with the no project conditions, the sensitive land uses within the project study area would be exposed to an increased cancer risk of more than 10 in 1 million. When compared with the existing (2016) conditions, the proposed project would result in lower health risks at all the land uses in the project area.

Implementation of Mitigation Measure AQ-3 (described in Section 3.5.6) would reduce the DPM concentrations in the project area. Implementation of Mitigation Measure AQ-3 (described in Section 3.5.6) would achieve reductions of average pollutant concentrations by 51 percent in 2031 and 56 percent in 2040.

- To achieve service levels anticipated in 2031, Mitigation Measure AQ-3 would be required to reduce the average pollutant concentrations by 51 percent.
- To achieve service levels anticipated in 2040, Mitigation Measure AQ-3 would be required to reduce the average pollutant concentrations by 56 percent.

Upon implementation of Mitigation Measure AQ-3, the operational health risk impacts would be reduced to a level less than significant.

Indirect Impacts

The project would generate an air quality benefit in 2031 that would incrementally increase as more trains (equipped with Tier 4 emission controls) come into operation in response to increased ridership. Impacts are considered beneficial.

THRESHOLD 3.5-E	Create objectionable odors affecting a substantial number of people

Direct Impacts – Construction

Construction of the project could result in emission of odors from construction equipment and vehicles (e.g., diesel exhaust). It is anticipated that these odors would be short-term, limited in extent at any given time, and distributed throughout the project study area during the duration of construction, and, therefore, would not impact a substantial number of individuals. Impacts are considered less than significant.

Direct Impacts – Operations

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The project does not include any uses identified by SCAQMD as being associated with odors; therefore, it is not anticipated that the project would produce objectionable odors. During operation, emissions from train idling (i.e., diesel exhaust and volatile organic compounds [VOC]) would result in objectionable odors. However, in the opening year, the improved efficiency and reduced idling would reduce the potential for odor generation. In 2040, the reduced idling, improved efficiency, and improved engine technologies would minimize any increase in odor generation. Impacts are considered less than significant.

Indirect Impacts

Based on the type of project under consideration (e.g., passenger rail service) and the operational parameters described in Chapter 2.0, Project Description, no impact with regard to objectionable odors would occur.

THRESHOLD 3.5-F	Generate GHG emissions, either directly or indirectly, that may have an adverse effect on the environment

Direct Impacts – Construction and Operations

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through contractor means and methods, as well as implementation of innovations in plans and specifications for better traffic management during construction phases.

Table 3.5-7 lists the annual GHG emissions that would be generated during construction of the proposed project. Up to 41,570 tons of CO_2e would be generated during the 6-year construction timeframe; this is equivalent to 37,705 MT of CO_2e. Amortized over a 30-year period, the approximate life of the project, the yearly contribution to GHG from the construction of the project would be 1,256.9 MT of CO_2e per year.

The following activities associated project operations could directly or indirectly contribute to the generation of GHG emissions:

- Gas, Electricity, and Water Use – Natural gas use results in the emissions of two GHGs: CH_4 (the major component of natural gas) and CO_2 from the combustion of natural gas. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel.
- Solid Waste Disposal – Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is 21 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- Motor Vehicle Use – Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in vehicle trips. The project would result in GHG emissions through the vehicular traffic generated by the proposed project. According to the traffic analysis conducted for the project (Appendix E of this EIR), total project-generated daily traffic is estimated to be 1,428 trips per day from the on-site office and retail uses.
- Train Emissions – As discussed above, the project would impact the rail idling emissions at LAUS. The project facilitates the forecasted increase in regional/intercity rail train trips identified in the 2016 RTP/SCS; however, there are other infrastructure improvements on the regional rail system, including the LOSSAN corridor, required to meet the forecasted train trip increases. Therefore, the GHG emissions analysis provided herein only considers the change in localized emissions within the project study area and not the system-wide change in rail emissions. It should be noted the project is a key to facilitating regional GHG emission reductions.

The projected GHG for the proposed project would be the summation of the individual sources identified above.

As identified in Table 3.5-41, the total annual GHG emissions from construction and operation of the proposed project would be approximately 11,230 MT of CO_2e per year, which exceeds the SCAQMD's 3,000 MT CO_2e interim significance threshold for commercial, residential, and mixed use projects.

Table 3.5-41. 2040 Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction emissions amortized over 30 years	0.0	1,255.7	1,255.7	0.1	0.0	1,256.9
Operational Emissions						
Area sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy sources	0.0	4,272.0	4,272.0	0.11	0.023	4,281.7
Mobile sources	0.0	843.2	843.2	0.03	0.0	844.0
Waste sources	127.2	0.0	127.2	7.51	0.0	315.0
Water usage	15.1	485.5	500.6	1.56	0.039	551.3
Total operational emissions	142.3	5,600.6	5,742.9	9.22	0.06	5,992.0
Rail Emissions						
Without project	0.0	6,168.2	6,168.2	0.0	0.0	6,168.2
With project	0.0	10,149.0	10,149.0	0.0	0.0	10,149.0
Net increase	0.0	3,980.8	3,980.8	0.0	0.0	3,980.8
Total project operational emissions	142.3	9,581.4	9,723.7	9.2	0.1	9,972.8
Total project emissions with construction	142.3	10,837.1	10,979.4	9.3	0.1	11,229.7

Source: Appendix G of this EIR

Notes:
Bio-CO_2= biogenic carbon dioxide; CH_4=methane; CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; NBio-CO_2=non-biogenic carbon dioxide; N_20=nitrous oxide

As discussed above, this analysis evaluates the localized idling emissions associated with the regional/intercity rail operations within LAUS. Therefore, this analysis does not evaluate the system-wide change in rail emissions or the associated change in regional VMT.

In 2015, Metro emitted 457,400 MT of CO_2e from its operations. By removing private vehicles from the road, the agency also prevents GHG emissions from entering the atmosphere. During the same period, Metro saved approximately 464,493 MT of CO_2e from being emitted by displacing vehicle driving. As a result, Metro's net GHG emissions in 2015 were a net reduction of 7,093 MT of CO_2e. The addition of 5,992 MT of CO_2e from the operation of LAUS would increase Metro's operation emissions to approximately 463,400 MT. Therefore, Metro would continue to offset over 100 percent of its operating GHG emissions through regional VMT reductions.

Metrolink is currently developing the SCORE Program, which will upgrade the regional rail system to meet the current and future needs of the traveling public. By adding tracks and grade separations and upgrading signal systems across the entire Metrolink system, trains will operate more frequently and reliably, making regional travel by train easier and creating an even more appealing alternative to driving. Link US is the centerpiece of the SCORE Program, providing critical capacity increases that are required to realize over 26 percent of the significant reductions in basin-wide VMT and GHG emissions that will result from the SCORE Program. Between 2026 and 2078, Link US's estimated contribution to the VMT and GHG reductions are 898 million miles and 13.5 million MT of CO_2e, respectively. The long-term VMT and GHG reductions would offset the project-related annual GHG emissions of 11,230 MT of CO_2e.

Further and from a regional perspective, by providing increased station capacity for regional/intercity rail, Metro rail and bus, and accommodation of the planned HSR system, the project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. Therefore, the project is a key component to achieving the 2016 RTP/SCS GHG reduction goals for the SCAG region as listed in Table 3.5-42, in addition to statewide GHG reduction targets. The 2016 RTP/SCS would achieve GHG emission reductions of up to 35 percent for Los Angeles County in 2040 and up to 24 percent for the SCAG region as a whole. In this context, impacts associated with the reductions in GHGs in 2040, as facilitated by the project, are considered beneficial.

Table 3.5-42. Greenhouse Gas Emissions from Transportation for Los Angeles County – 2016 Regional Transportation Plan/Sustainable Communities Strategy

County	2012 Base Year	2020	2040	2040 Plan versus 2012 Base Year (%)
Los Angeles	120,929.1	106,253.9	78,830.9	-35
SCAG Total	243,151.7	222,265.0	185,519.2	-24

Source: SCAG 2016
Notes:
SCAG=Southern California Association of Governments

Although not required for the project's climate change impacts, Mitigation Measures AQ-2 and AQ-3 (described in Section 3.5.6) would reduce the construction and operational GHG emissions of the proposed project. Mitigation Measure AQ-2 would reduce the off-road GHG emissions by 30 percent. Mitigation Measure AQ-3 would reduce the locomotive emissions by 51 percent in 2031 and by 56 percent in 2040. Table 3.5-43 identifies the mitigated GHG emissions for the proposed project. With the addition of the SCORE Program, benefits the GHG emissions for the proposed project would be reduced to less than zero.

Table 3.5-43. Cumulative Greenhouse Gas Emissions (2040) - Mitigated

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction emissions amortized over 30 years	0.0	944.8	944.8	0.1	0.0	945.9
Operational Emissions						
Area sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy sources	0.0	4,272.0	4,272.0	0.11	0.023	4,281.7
Mobile sources	0.0	843.2	843.2	0.03	0.0	844.0
Waste sources	127.2	0.0	127.2	7.51	0.0	315.0
Water usage	15.1	485.5	500.6	1.56	0.039	551.3
Total operational emissions	142.3	5,600.6	5,742.9	9.22	0.06	5,992.0
Rail Emissions						
No project	0.0	6,168.2	6,168.2	0.0	0.0	6,168.2
Proposed project	0.0	6,082.9	6,082.9	0.0	0.0	6,082.9
Net increase	0.0	-85.3	-85.3	0.0	0.0	-85.3
Total operational emissions	142.3	5,515.3	5,657.6	9.2	0.1	5,906.7
Total emissions with construction	142.3	6,460.1	6,602.4	9.3	0.1	6,852.6

Notes:
Bio-CO_2= biogenic carbon dioxide; CH_4=methane; CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; NBio-CO_2=non-biogenic carbon dioxide; N_20=nitrous oxide

Indirect Impacts

Implementation of proposed project would aid in the reduction of GHG emissions through regional VMT reductions. No impact would occur.

THRESHOLD 3.5-G	Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG

Direct Impacts – Construction and Operations

SB 375 calls on SCAG and other metropolitan planning organizations (MPO) to integrate land use, housing, and transportation planning efforts to achieve the SB 375 regional GHG reduction targets, consistent with the transportation goals of AB 32. The adopted 2016 RTP/SCS multimodal strategy aims to reduce per capita VMT over the next 25 years, with regional passenger rail serving as a means to

achieve VMT reductions. The proposed project would assist Metro and the State of California in meeting the GHG emission reduction targets as mandated under AB 32 and SB 375. Implementation of the project would allow Metro to accommodate regional growth through increased and more frequent access to alternative modes of transit for local communities.

SCAQMD has adopted numeric mass emissions thresholds as a method to close the gap between emissions reductions from land-use driven sectors that would occur at the state level (including Pavley, low carbon fuel standard, and Renewable Portfolio Standard, among others) and the emission reductions necessary from land use development projects that have a lower carbon intensity within the region, consistent with the goals of AB 32. Future year project-related emissions would be below SCAQMD numeric thresholds adopted to help achieve the reduction goals of AB 32. Thus, the project would not conflict with AB 32. Impacts are considered less than significant.

Indirect Impacts

Implementation of the project would aid in the reduction of GHG emissions through regional VMT reductions. No impact would occur.

3.5.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to air quality and global climate change.

Construction

The following measures would be implemented during construction activities:

AQ-1: Fugitive Dust Control: In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403:

- Minimize land disturbed by clearing, grading, and earth moving, or excavation operations to prevent excessive amounts of dust
- Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done
- Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes
- Securely cover trucks when hauling materials on or off site
- Stabilize the surface of dirt piles if not removed immediately

- Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads
- Minimize unnecessary vehicular and machinery activities
- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway
- Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities

The following measures shall also be implemented to reduce construction emissions:

- Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy
- Ensure that all construction equipment is properly tuned and maintained
- Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible
- Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable

These control techniques shall be included in project specifications and shall be implemented by the construction contractor.

AQ-2: Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment: In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations.

In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.

Operations

The following measures would be implemented during operation:

AQ-3: Adaptive Air Quality Mitigation Plan: Prior to implementation of regional/intercity rail run-through service, an Adaptive Air Quality Mitigation Plan shall be prepared by Metro, in coordination with the SCRRA, as the operator of the commuter rail service in Southern California and the program manager and grant recipient of the SCORE Program, Amtrak, and the LOSSAN Rail Corridor Agency. The Plan shall identify the methodology and requirements for annual emission inventories to be prepared by Metro, based on actual/current train movements and corresponding pollutant concentrations through the Year 2040.

Mitigation Plan Requirements: Upon implementation of regional/intercity run-through service, and on an annual basis, Metro shall compile and summarize the current Metrolink, Pacific Surfliner, and Amtrak long-distance train schedules to determine the actual level of daily and peak-period train movements (including non-revenue train movements) that operate through LAUS.

On an annual basis, Metro shall retain the services of an air quality specialist to conduct an annual emissions inventory to determine if actual train movements through LAUS are forecasted to increase criteria pollutant emissions to a level that would exceed the SCAQMD significance thresholds or diesel pollutant concentrations to a level that would exceed the SCAQMD's 10 in a million threshold at any residential land use in the project study area. An annual report shall be prepared by Metro that summarizes the quantitative results of pollutant emissions and diesel pollutant concentrations in the project study area. If pollutant emissions and diesel pollutant concentrations are projected to exceed the SCAQMD thresholds, the regional and intercity rail operators in coordination with Metro and California State Transportation Agency, shall either implement rail fleet emerging technologies consistent with *2018 California State Rail Plan* Goal 6: Practice Environmental Stewardship, Policy 4: Transform to a Clean and Energy Efficient Transportation System (Caltrans 2018), or reduce the train movements through LAUS to lower the criteria pollutant emissions below

the SCAQMD significance thresholds and the diesel pollutant concentrations below the SCAQMD thresholds in the project study area.

After implementation of emerging technologies, Metro shall continue to prepare an emissions inventory in coordination with SCRRA, Amtrak, and the LOSSAN Rail Corridor Agency annually to report the quantitative results of criteria pollutant emissions and diesel pollutant concentrations in the project study area. The annual report shall include an analysis of the actual (current) and proposed changes in train schedules relative to criteria pollutant emissions and diesel pollutant concentration levels in the project study area. The report shall be prepared annually by December 31 of each year, beginning the calendar year after implementation of regional/intercity rail run-through service through 2040 and shall include results of the emissions inventory and effectiveness of the measures implemented.

Rail Fleet Emerging Technologies. To achieve a reduction of criteria pollutant emissions below the SCAQMD thresholds and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds, the regional and intercity rail operators may replace, retrofit, or supplement some or all of their existing fleet with zero or low-emission features. The types of emerging technologies that can be implemented, include, but are not limited to the following:

- Electric multiple unit systems
- Diesel multiple units
- Battery-hybrid multiple units
- Renewable diesel and other alternative fuels

Metro shall coordinate with regional rail/intercity rail operators to incorporate these emerging technologies into existing and/or future funding and/or operating agreements to reduce locomotive exhaust emissions in the project study area.

3.5.7 CEQA Significance Conclusions

The construction emissions associated with the project would continue to exceed the SCAQMD's daily criteria pollutant and LSTs after implementing Mitigation Measures AQ-1 and AQ-2. Impacts would remain significant and unavoidable.

The operational emissions associated with the proposed project would be reduced to below the SCAQMD's daily criteria pollutant, localized significance, and health risk thresholds. In addition, the long-term GHG emissions would be reduced to less than zero. Upon implementation of Mitigation Measure AQ-3, significant impacts would be reduced to a level less than significant.

3.6 Noise and Vibration

3.6.1 Introduction

This section provides an evaluation of the proposed project in relation to existing noise and vibration conditions within the project study area. Information contained in this section is summarized from the *Link US Noise and Vibration Study* prepared for the project (Appendix H of this EIR) in combination with published sources.

3.6.2 Regulatory Framework

Table 3.6-1 identifies and summarizes laws, regulations, and plans relative to noise and vibration applicable to the project.

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
Federal – Noise	
The Noise Control Act of 1972	The Noise Control Act of 1972 (42 USC 4910) was the first comprehensive statement of national noise policy. It declared that "it is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."
State	
CEQA	CEQA requires state and local agencies to identify the significant environmental impacts of their actions, including potential impacts from noise and vibration, and avoid or mitigate those impacts when feasible. The State of California has established land use compatibility criteria that provide guidance on the compatibility of different types of land uses based upon the existing community noise level. These guidelines are often adopted by city and county agencies for land use planning purposes.
California Noise Control Act	The California Noise Control Act was enacted in 1973 (Health and Safety Code Section 46010 et seq.) provides guidance for the preparation of the required noise elements in city and county general plans, pursuant to Government Code Section 65302(f). In preparing the noise element, a City or County must identify local noise sources and analyze and quantify, to the extent practicable, current and projected noise levels for various sources, including highways and freeways; passenger and freight railroad operations; ground rapid transit systems; commercial, general, and military aviation and airport operations; and other ground stationary noise sources.

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
Local	
LAMC	Chapter XI Noise Regulation of the LAMC established sound measurement and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for different uses including construction activity, and legal remedies for violations. The City's ambient noise standards are consistent with current federal and state noise standards. They are correlated with land use zoning classifications in order to guide the measurement of noise on a geographically specific site. The presumed ambient noise level is set for specific zones. The City's intention is to maintain identified ambient noise levels and to limit, mitigate, or eliminate intrusive noise. Chapter IV of the LAMC outlines considerations and variety of provisions that directly or indirectly mitigate noise impacts that are associated with different types of land uses. The City enforces noise ordinance provisions relative to noise generated by people and equipment. Application processing and noise variance application fees are established by the LAMC. The City's municipal code noise regulations are generally not applicable to operational noise from the project; however, construction noise is restricted via Section 41.40 of the Los Angeles Municipal Code, which states that: *No person shall, between the hours of 9:00 PM and 7:00 AM of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and wilfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.* The City of Los Angeles Noise Regulation also limits noise from construction equipment within 500 feet of a residential zone to 75 dBA, measured at a distance of 50 feet from the source, unless compliance with this limitation is technically infeasible. The Noise Regulation prohibits construction noise between the hours of 9:00 PM and 7:00 AM Monday through Friday and on Saturday before 8:00 AM and after 6:00 PM, and does not allow construction noise on Sunday. Technically infeasible means the noise limitation cannot be met despite the use of mufflers, shields, sound walls and/or any other noise reduction device or techniques during the operation of equipment.

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
City of Los Angeles General Plan Noise Element	The Noise Element sets forth noise management goals, objectives, policies, and programs of the City of Los Angeles. The City's General Plan goal is to achieve and maintain the "city where noise does not reduce the quality of urban life." The element states that the primary municipal authority is to enforce and/or implement applicable city, state and federal regulations intended to mitigate noise producing activities. The element summarizes the City's major noise management procedures, enforcement practices, and identifies responsible agencies for implementation of the policies. The element is consistent with the City's Noise Regulation (LAMC (Chapter XI). Examples of mitigation measures are included within the element for proposed development projects that are deemed to have a potentially significant noise impact. The Noise Element of the General Plan specifically addresses noise management related to rail systems within the City. The Noise Element acknowledges that the regulation of rail system related noise is within the jurisdiction of federal and/or state authorities, and that the Los Angeles County MTA is a quasi-state agency that is exempt from City noise laws. However, the following policies address rail operations within the City: • **Policy P10:** "continue to encourage… rail systems operating within the city's borders, but which are not within the jurisdiction of the city, to be constructed and operated in a manner that will assure compliance with the City's noise ordinance standards." • **Policy P17:** "continue to encourage… the Los Angeles County MTA…to plan and construct transportation systems so as to reduce potential noise impacts on adjacent land uses, consistent with the standards and guidelines contained in the noise element." The Noise Element states the intention to continue to periodically update City codes and plans that contain noise management provisions to address new issues and noise management changes.

Notes:
CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; dBA=A-weighted decibel; LAMC=Los Angeles Municipal Code; MTA=Metropolitan Transit Authority; USC=United States Code; U.S. EPA=United States Environmental Protection Agency

3.6.3 Methods for Evaluating Environmental Impacts

FTA's *Transit Noise and Vibration Impact Assessment*, as well as FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (Appendix H of this EIR) manuals were followed to evaluate the environmental impacts of the project. Additionally, the operational noise assessment implements the methods provided in CHSRA's *Environmental Methodology Guidelines* (Appendix H of this EIR), as applicable. Noise and vibration impacts were assessed using procedures followed by the FTA for regional/intercity rail improvements, because FRA defers to FTA procedures for this type of evaluation. Because the project accommodates the planned HSR system, the FRA and CHSRA procedures are also considered.

FTA and FRA methodology identifies a noise screening procedure, a general noise assessment, and a detailed noise assessment. Following the FTA and FRA detailed noise assessment methodology, the noise impacts associated with the proposed project were quantified through an in-depth analysis. The methodologies outlined in Section 6 of the FTA manual and Chapter 5 of the FRA manual were used to calculate the day-night average sound level (L_{dn}) noise levels due to train operations on the rail alignment under existing conditions (2016), future-no-project, and future-with-project scenarios (2026, 2031, and 2040). Receivers of interest (i.e., potential noise-sensitive receptors) were selected using the guidance provided in Section 6 and Appendix C of the FTA manual (Table 5-1 of FTA Manual), which mimic the guidance in the FRA manual for HSR.

The operational analysis was conducted for 2026, 2031, and 2040 conditions, which include increases in train movements through LAUS that would result from a variety of factors, such as efficiencies gained by implementation of the proposed project, other non-project-related "upstream" system improvements, and population growth in the area. The 2026 and 2031 years correspond to the two major phases of project implementation (interim condition and full build-out condition), and the 2040 condition corresponds to the horizon years and timeframe for corresponding service goals and objectives of multiple statewide plans and mandates. A summary of the project-related capacity enhancements associated with each scenario is provided below:

- 2026 – Two new regional/intercity rail run-through tracks from Platform 4 at LAUS (interim condition)
- 2031 – All regional/intercity rail improvements at LAUS including the reconstructed throat, elevated rail yard and new passenger concourse, and up to ten run-through tracks (full build-out condition)
- 2040 – Full operation of HSR service at LAUS

Definition of Sound

The most common descriptor of sound and noise associated with community noise measurements is the A-weighted sound pressure level. The term dBA indicates that the decibel (dB) level is A-weighted to approximate the human ear's sensitivity to sounds of different frequencies. The A-weighted sound level of rail noise and other long-term noise-producing activities within and around a community vary with time. Certain noise descriptors are preferred for use in describing community noise environments. These descriptors are based on noise energy and called the equivalent sound level (L_{eq}) over a specified time period (e.g., hourly), and the L_{dn} over a 24-hour period.

Definition of Vibration

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The strength of groundborne vibration diminishes (or attenuates) fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. There are several basic

measurement units commonly used to describe the intensity of ground vibration. The descriptors used in this evaluation are peak particle velocity (PPV), in units of inches per second, and the VdB.

Impact Criteria

The impact criteria are based on the goal of maintaining a noise and vibration environment considered acceptable for land uses where noise may have an impact. The noise exposure is measured in terms of the L_{dn} for residential land uses (Noise Category 2), or in terms of the hourly equivalent sound level (L_{eq}[h]) for other institutional land uses (Noise Category 3). In FTA's *Transit Noise and Vibration Impact Assessment*, noise impact criteria for operation of rail facilities are based on the change in outdoor noise exposure using a sliding scale with three land use categories and three degrees of impact. The criteria were established to reflect a heightened community annoyance caused by daytime, late-night, or early-morning service, as well as communities' varying sensitivity to noise from projects during different ambient noise conditions.

For operational rail noise, FTA's three land use categories are as follows:

- *Noise Category 1* – Tracts of land where quiet is an essential element in their intended purpose, such as outdoor amphitheaters, concert pavilions, and National Historic Landmarks with significant outdoor use.
- *Noise Category 2* – Residences and buildings where people normally sleep, including homes, hospitals, and hotels.
- *Noise Category 3* – Institutional land uses (schools, places of worship, libraries) with use typically during the daytime and evening. Other uses in this category include medical offices, conference rooms, recording studios, concert halls, cemeteries, monuments, museums, historical sites, parks, and recreational facilities.

The categories are determined from general land use information about each receiver. No Category 1 receivers are located within 1 mile of the proposed track alignment, which is well beyond the typical FTA screening distance for noise or vibration impacts. Outdoor hourly L_{eq} applies to Categories 1 and 3, whereas outdoor L_{dn} applies to Category 2.

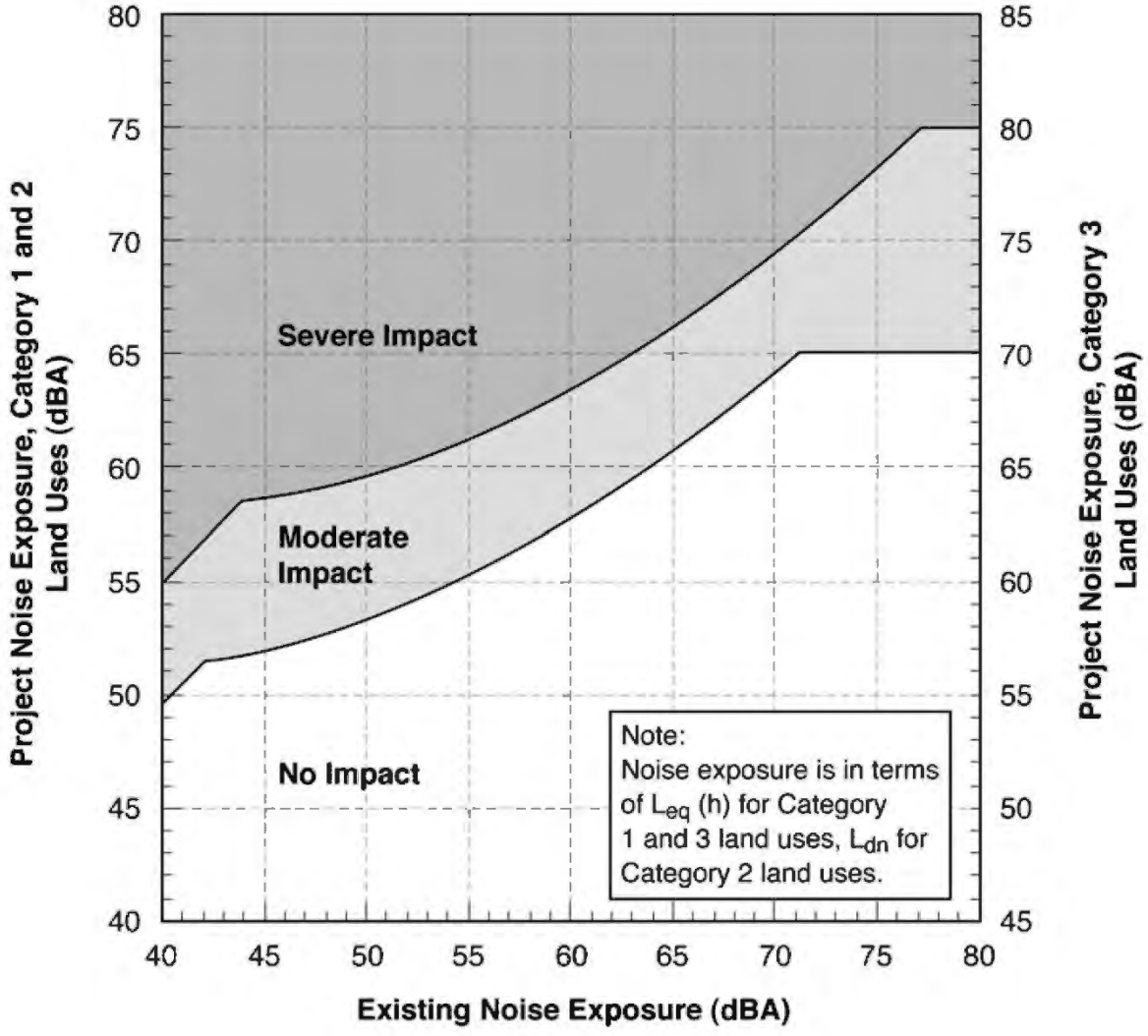
Noise impacts on these three categories as a result of a project are assessed by comparing existing and future project-related outdoor noise levels, as illustrated on Figure 3.6-1. The FTA states in their *Transit Noise and Vibration Impact Assessment* (Appendix H of this EIR) that in cases where changes are proposed to an existing transit system, their cumulative noise criteria can be used. In the case of this project, the cumulative noise criteria are appropriate in most areas since the existing facility is being modified by the project, with an exception being the area immediately south of the station where the new run-through tracks would be constructed.

As shown on Figure 3.6-1, Figure 3.6-2, and Figure 3.6-3, the criterion for each degree of impact is based on a sliding scale where impacts are dependent on the existing noise exposure and the increase in noise exposure due to the project. Figure 3.6-1 shows project based noise impact criteria, and Figure 3.6-2 and

Figure 3.6-3 illustrate cumulative noise impact criteria. There are three potential noise impact types: "no impact," "moderate impact," and "severe impact."

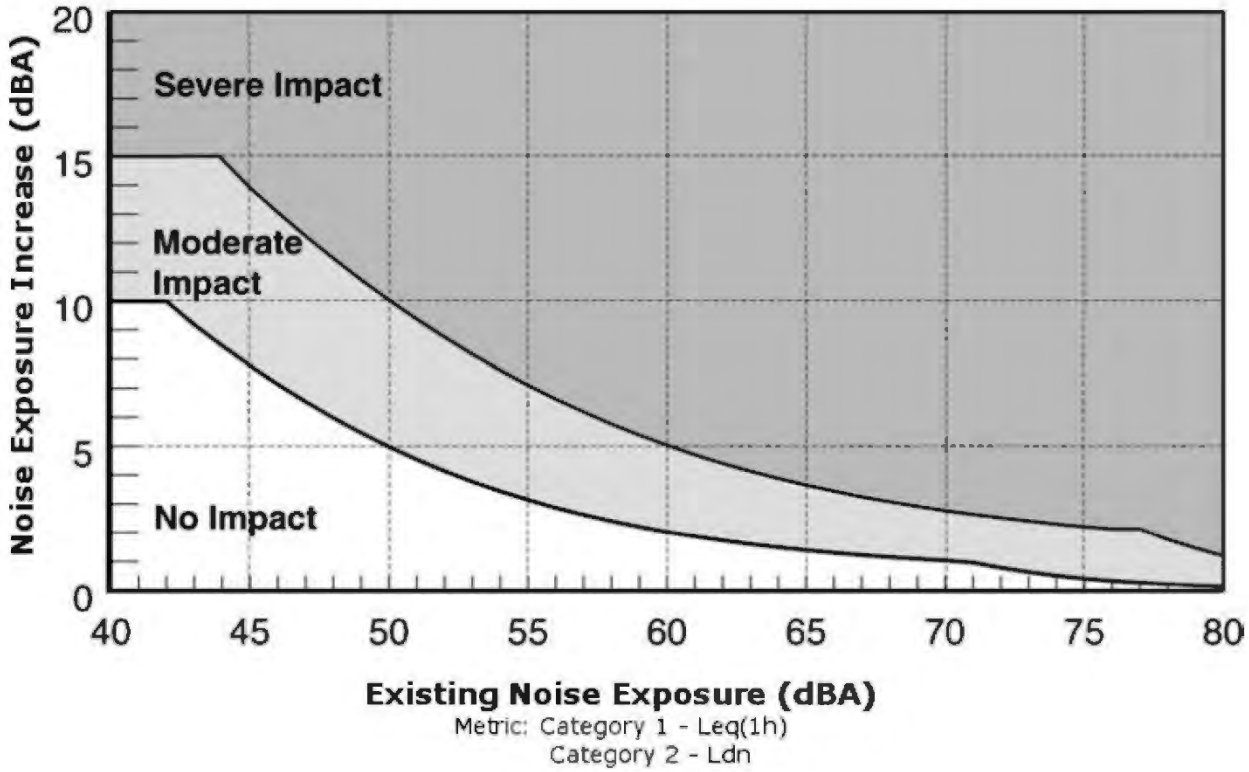
- *No impact* – A project, on average, will result in an insignificant increase in the number of instances when people are "highly annoyed" by new noise. No impact typically corresponds to a less than significant impact under CEQA.
- *Moderate impact* – The change in cumulative noise is noticeable to most people but may not be sufficient to cause strong, adverse community reactions. A moderate impact typically corresponds to a less than significant impact under CEQA
- *Severe impact* – A significant percentage of people would be highly annoyed by the noise, perhaps resulting in vigorous community reaction. A severe impact typically corresponds to a significant impact under CEQA.

Figure 3.6-1. Federal Transit Administration Noise Impact Criteria



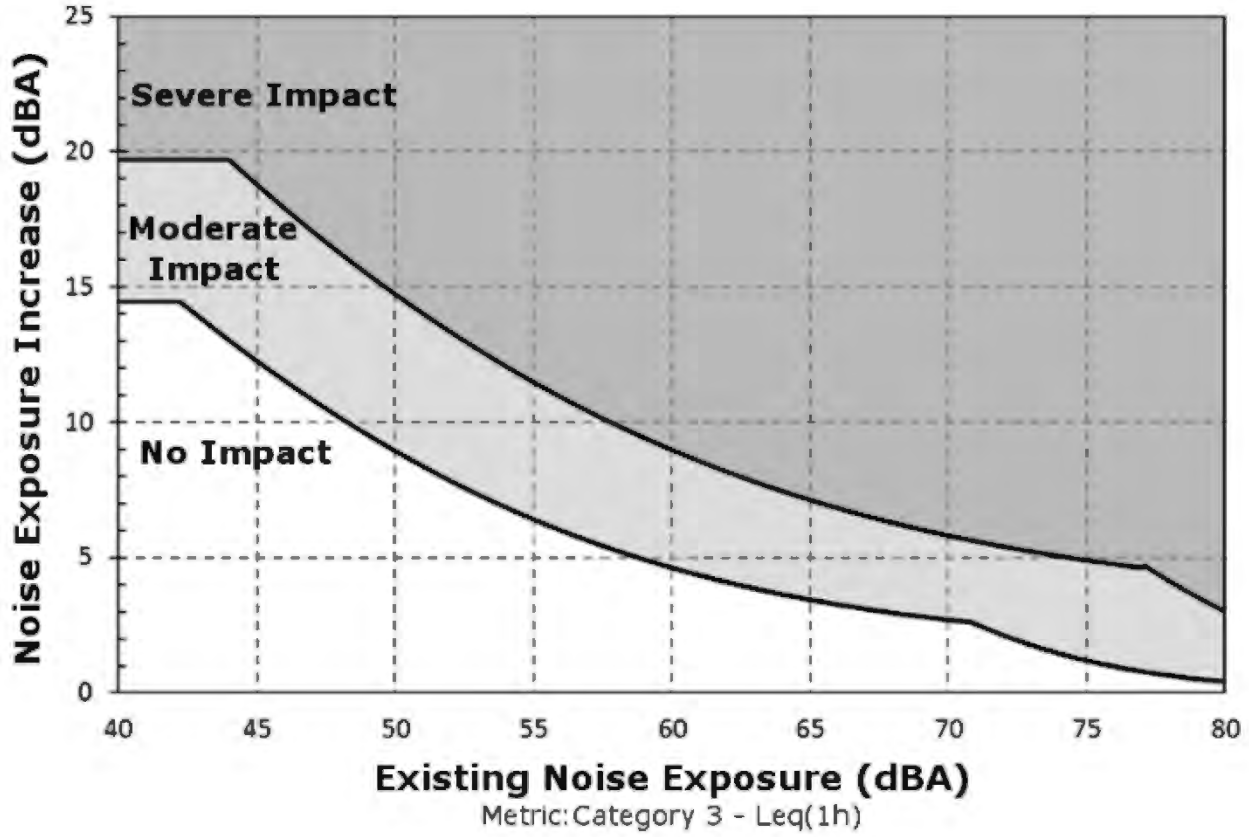
Source: FTA 2018

Figure 3.6-2. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 2 Lands



Source: Appendix H of this EIR

Figure 3.6-3. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 3 Lands



Source: Appendix H of this EIR

An example of impact evaluation is the FTA's sliding impact criterion for Category 2 receivers. An existing environment of 50 dBA L_{dn} would experience a moderate impact if the rail project creates a noise exposure of approximately 53 dBA to 59 dBA L_{dn}, or if there is an increase of 9 to 15 db. An existing environment of 65 dBA L_{dn} would be classified as having no impact if the rail project creates a noise exposure of 61 dBA to 66 dBA L_{dn}, or if there is an increase of up to 2 db. Those same existing environments (50 or 65 dBA L_{dn}) would be classified as having a severe impact if the rail project creates noise exposure levels greater than 59 dBA and 66 dBA L_{dn}, respectively, or an increase of over 15 dB and 4 dB, respectively.

Construction Noise

Noise related to construction would result from operation of heavy equipment needed to implement the project. The FTA manual (Section 7) contains several sets of tables listing suggested construction noise impact criteria, depending upon the level of detail/understanding of the construction phase. For the more detailed approach applicable to the project, FTA's guidelines for assessment of construction noise, shown in Table 3.6-2, are suggested for use due to different noise levels for daytime and nighttime construction. Daytime is defined as 7:00 AM to 10:00 PM, and nighttime is defined as 10:00 PM to 7:00 AM.

Table 3.6-2. Prescriptive Federal Transit Administration Construction Noise Assessment Guidelines

Land Use	8-Hour L_{eq} (dBA)		30-Day Average L_{dn} (dBA)
	Day	Night	
Residential	80	70	75[a]
Commercial	85	85	80[b]
Industrial	90	90	85[b]

Source: Appendix H of this EIR

Notes:

[a] ***In urban areas with very high ambient noise levels (L_{dn}> 65 dB), L_{dn} from construction operations should not exceed existing ambient + 10 dB***

[b] ***24-hour L_{eq}, not L_{dn}***

dBA=velocity in decibels; L_{eq}=equivalent noise level; L_{dn}=day-night average sound level

The City regulates construction noise via their Municipal Code, specifically Section 41.40. This section states the following:

> *No person shall, between the hours of 9:00 P.M. and 7:00 A.M. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and wilfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.*

The City may provide permission to work outside of these hours if it is in the public interest, or where a hardship or injustice, or unreasonable delay would result from its interruption during the hours provided in Section 41.40 of the Municipal Code.

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from hand-held pneumatic tools to excavators, loaders, a variety of trucks, and tie and rail handling equipment. To assess potential noise impacts from construction, this noise analysis used the methodology in Section 7 of the FTA manual and Chapter 10 of the FRA manual, which are identical to one another (Appendix H of this EIR).

The noise exposure at a receiver location was calculated from the dB addition of all operating construction equipment using the equations and methodology described in the FTA/FRA manuals. For example, the attenuation rate used as a point source was 6 dB per doubling of distance. The intervening

ground was generally hard surfaced; therefore, any additional reduction from ground impacts was negligible. Where applicable, shielding effects from intervening structures were accounted for using the same shielding calculations used in the rail noise analysis (Appendix H of this EIR).

The construction source noise emission levels at a reference distance of 50 feet (Appendix H of this EIR) are presented in Table 7-1 of the FTA manual. The noise emission levels for construction equipment planned to be on-site are provided in the *Link US Noise and Vibration Study* (Appendix H of this EIR). Construction equipment used in the analysis included trucks, loaders, rollers, mobile cranes, ballast tampers, generators, and other items. The range in noise levels typically generated by the equipment assumed for the analysis ranges from 74 dBA L_{eq} (e.g., water trucks) to 101 dBA L_{eq} (e.g., impact pile driver) at a distance of 50 feet.

Construction Vibration

To assess potential vibration impacts from construction, this vibration analysis used the methodology contained in Section 7.2 of the FTA manual and Chapter 10.2 of the FRA manual, which are identical to one another (Appendix H of this EIR). The potential for damage to structures from project-related construction vibration was analyzed for the sensitive receivers discussed above. Vibration source levels for a variety of typical construction equipment types are outlined in Table 7-4 of the FTA manual (reproduced here as Table 3.6-3) in terms of PPV in inches-per-second at a reference distance of 25 feet from the source and root-mean-square velocity in decibels (VdB) at 25 feet (Appendix H of this EIR). For this analysis, the source of typical vibration levels for an impact pile driver (0.644 inch-per-second PPV) and vibratory roller (0.210 inch-per-second PPV) was utilized.

Table 3.6-3. Typical Construction Equipment Vibration Levels

Equipment/Source		PPV at 25 Feet (inches/second)	Approximate LV[a*] at 25 Feet
Pile Driver (Impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (Vibratory)	Upper range	0.734	105
	Typical	0.170	93
Clam Shovel Drop (Slurry Wall)	—	0.202	94
Hydromill (Slurry Wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory Roller	—	0.210	94
Hoe Ram	—	0.089	87
Large Bulldozer	—	0.089	87
Caisson Drilling	—	0.089	87
Loaded Trucks	—	0.076	86
Jackhammer	—	0.035	79
Small Bulldozer	—	0.003	58

Source: Appendix H of this EIR

Notes:
[a*] RMS VdB reference 1 microinch per second

L_v=vibration velocity level; RMS=root-mean square; PPV=peak particle velocity; VdB=velocity in decibels

Construction vibration is assessed based on the potential for damage and the likelihood of annoyance. FTA and FRA indicate engineered concrete and masonry structures have a damage criteria of 0.3 PPV (inches-per-second). To assess the potential for construction vibration annoyance, the same vibration thresholds as those identified in Table 3.6-4 for operational vibration are applied.

Operational Noise

Rail Noise

The project requires a detailed noise assessment. The noise modeling effort, associated with the detailed noise assessment, accounted for the construction fleet and the duration to construct the proposed project as well as the number of train movements anticipated to pass through LAUS during daytime and nighttime hours of operation. The following assumptions were made as part of the detailed noise assessment:

- The typical train speed along the alignment(s), through the project study area north of the station and for trains running before connecting to the main line tracks, would be limited to 20 to 25 miles per hour. For this analysis, 25 miles per hour was used.
- Train speeds at LAUS would be 15 miles per hour and are assumed to increase up to 30 miles per hour after trains exit LAUS terminal tracks.
- Future train movements and consists (e.g., the number of locomotives and cars per train movement anticipated to pass through LAUS) are based off those provided in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR).
- There are two private at-grade rail crossings southwest of the "wye," where trains enter and exit LAUS in the throat segment near William Mead Homes. Operationally, the use of horns for trains entering and exiting the station is restricted unless workers are present on the ground or if the locomotive engineer judges a situation to be a safety issue. The two private at-grade rail crossings are at a location that triggers safety issues, because they are located along a blind curve. In 2018, Metro conducted a train horn use study (independent of this report) to identify the percentage of trains using a horn at these crossings (Appendix H of this EIR). The general approach of this study included 1 day of train traffic monitoring near the at-grade crossings to identify when a train horn was used. At the time of hearing a train horn, a basic noise measurement of the horn level was conducted using a cell phone. This study identified that 44 percent of trains sound their horns at the two private at-grade rail crossings. Consistent with the data obtained by Metro, for the purposes of this report, noise modeling assumes that 44 percent of trains utilizing tracks that intersect these two private at-grade crossings would continue to use horns as they approach the blind turn in the future.
- At the Main Street public at-grade rail crossing, the same train horn study referenced above identified that 100 percent of trains sound their horn at this crossing. Therefore, consistent with the data obtained by Metro, the noise modeling assumes that 100 percent of trains use horns at the Main Street crossing. Upon implementation of a quiet zone by the City of Los Angeles, the improvements may help to reduce noise at William Mead Homes in the future. It is currently unknown when a quiet zone at this location would be approved by the CPUC; therefore, reduced noise levels resulting from implementation of a quiet zone at this location are only considered as part of the cumulative noise impact evaluation.

- Future noise exposure would be the combination of the existing noise exposure and the additional noise exposure caused by the proposed rail project. Train movement volumes are projected to increase in the future, as identified in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR), and these increases are defined as project-related operational noise sources where there are existing tracks in operation. These train movements are incorporated into the noise modeling conducted for 2026, 2031, and 2040.
- Where there are no tracks currently in operation, such as areas just south of LAUS, the train movements for 2026, 2031, and 2040 are treated as a new noise source.
- In 2026, as part of the proposed project, the following assumptions were incorporated into the noise modeling:
    - Some Metrolink trains that provide service to/from south of LAUS would use the new run-through tracks to access the station.
    - Amtrak Pacific Surfliner trains operating to and from the south would use the run-through tracks as well, subject to schedule coordination with Metrolink trains using the same tracks. This would reduce the total number of trains operating in the throat area.
    - Amtrak long distance trains would continue to access LAUS from the north as they currently do.
- In 2031, as part of the proposed project, the following assumptions were incorporated into the noise modeling:
    - Amtrak Pacific Surfliner trains departing to or arriving from locations south of LAUS would use the run-through-tracks.
    - Because access to the Amtrak Los Angeles Maintenance Facility cannot be accomplished via the new run-through tracks, it is assumed that all Amtrak long-distance trains and 60 of the daily Amtrak Surfliner trains (approximately two-thirds of all trains) would access the Amtrak Los Angeles Maintenance Facility as they currently do from the north through the throat segment and then follow tracks south along the west side of the Los Angeles River.
- In 2040, as part of the proposed project, the following assumptions were incorporated into the noise modeling:
    - The majority of the Metrolink trains accessing LAUS from the north would need to utilize the tracks on the east bank of the Los Angeles River to accommodate HSR service anticipated to be in operation. From there, the trains would cross using the northernmost bridge to access the throat.
    - Because access to the Amtrak Los Angeles Maintenance Facility cannot be accomplished via the new run-through tracks, it is assumed that all Amtrak long-distance trains and 60 of the daily Amtrak Pacific Surfliner trains would access the Amtrak Los Angeles Maintenance Facility as they currently do from LAUS north through the throat and then utilizing tracks south along the west bank of the Los Angeles River.

  - North of LAUS, Amtrak Pacific Surfliner trains would continue to use the tracks on the west bank of the Los Angeles River.
  - Metrolink and Amtrak trains are assumed to be operating using diesel fuel and for safety purposes, would continue to use horns at private crossings in the throat segment.
- Because actual train schedules have not been prepared by the rail operators for the years of analysis (2026, 2031, and 2040), it is not possible at this time to calculate a peak daytime noise level for "daytime use only" noise-sensitive land uses, such as parks; therefore, the daytime L_{eq} is used to assess "daytime use only" impacts on noise-sensitive land uses.

A summary of the fundamental equations used for this analysis and the input and output of the rail noise analysis is contained in Appendix H of this EIR. Noise metrics used in this report include the following:

- ***Leq*** – Conventionally expressed in dBA, the L_{eq} is the energy-averaged, A-weighted sound level over a specified time period. It is defined as the steady, continuous sound level over a specified time, which has the same acoustic energy as the actual varying sound levels over the specified period.
- ***Lmax*** – The maximum A-weighted sound level as determined during a specified measurement period. It can also be described as the maximum instantaneous sound pressure level generated by a piece of equipment or during a construction activity.
- ***Ldn*** – The L_{dn} is the average hourly A-weighted L_{eq} for a 24-hour period with a 10 dB penalty added to sound levels occurring during the nighttime hours (10:00 PM to 7:00 AM) to account for individuals' increased sensitivity to noise levels during nighttime hours.
- CNEL (community noise equivalent level) – CNEL is another average A-weighted L_{eq} sound level measured over a 24-hour period; however, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5 dB to sound levels occurring during evening hours (7:00 PM to 10:00 PM) and 10 dB to noise levels occurring during nighttime hours (10:00 PM to 7:00 AM).

Three-Dimensional Predictive Model

Operational sound levels can be assessed using the FTA/FRA spreadsheet models; however, efficiencies can be gained by implementing "off-the-shelf" acoustic modeling software that implements the calculation methods of the FTA/FRA spreadsheets. Additionally, analysis of complex rail operations, such as loop tracks, are not easily accomplished via the spreadsheet models. Therefore, for this assessment, three-dimensional off-the-shelf predictive models, such as SoundPLAN software, were used to calculate rail noise levels implementing the FTA/FRA methods for regional/intercity rail, light-rail transit, and HSR trains. These modeling programs conform to the FTA/FRA standard for rail noise sources. The SoundPLAN model includes an array of data inputs such as sound sources, topography, buildings, and ground characteristics, such as paved areas and vegetated areas. The following steps were taken to implement the FTA/FRA standard for rail noise sources in SoundPLAN:

A. FTA/FRA spreadsheets were used to identify some source terms (i.e., noise levels) for each train set that would operate on a given rail line at 50 feet.

B. Each train configuration (i.e., Metrolink, Amtrak Pacific Surfliner, Amtrak long distance, and HSR) and the number of train movements on a given track location were entered into SoundPLAN. The resultant level was compared against the items developed in Step A to ensure consistency.

C. Each source term was applied to specific rail lines based on estimates of train movements for 2026, 2031, and 2040 as outlined in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR), which included a mix of Metrolink regional rail trains, Amtrak Pacific Surfliner and long distance trains, and HSR trains. The years 2026 and 2031 correspond to the two major phases of project implementation (interim condition and full build-out condition). The year 2040 corresponds to horizon years and corresponding service goals and objectives of multiple statewide plans and mandates.

D. The proposed project scenarios were modeled utilizing the proposed track alignment and configuration, and estimated train movements for each independent rail operator (Metrolink, Amtrak, and CHSRA).

E. Idling train noise was calculated via point sources in the SoundPLAN model, and the source terms were generated using FTA's methods (Appendix H of this EIR). Attenuation impacts of the point sources were calculated by implementing the International Organization for Standardization's standard 9613-2 *Acoustics – Attenuation of Sound during Propagation Outdoors* (Appendix H of this EIR).

F. Modeling included terrain contours to capture terrain changes, including those associated with the elevated rail yard.

G. Buildings were modeled as three-dimensional shapes to capture attenuation impacts.

H. Although there are small patches of grass and dirt in the project study area, the noise predictions conservatively assume a uniformly hard and acoustically reflective surface like that of a paved area.

Project-related operational noise levels were calculated for the 2026, 2031, and 2040 conditions. The noise levels were compared with the relevant noise impact criteria identified in Appendix H of this EIR. Noise levels associated with special trackwork, such as crossovers, were also included in this assessment for sensitive receptors located within 200 feet of the proposed project. Although the CHSRA *Environmental Methodology Guidelines* require excluding these potential sound and vibration sources (Appendix H of this EIR), because regional/intercity rail trains are evaluated, these sources are considered in this assessment.

Wheel/Rail Noise

Wheel squeal is the noise produced by wheel-rail interaction, particularly on a curve where the radius of curvature is smaller than allowed by the separation of the axles in a wheel set. Wheel squeal has not been included in the noise projections because wheel squeal is highly variable, which makes accurate projections difficult. FTA and FRA manuals indicate that standard, steel wheel on steel rail systems tend to initiate curve squeal at curves with radii less than 100 times the truck wheelbase (Appendix H of this EIR).

For the trains in the project study area, assuming a truck wheelbase of 9 feet, wheel squeal would initiate on curves with a radius of 900 feet or less. North of LAUS, the planned track curvature has a radius of less than 900 feet, which is similar to the existing curves in this area. Measurements in this area were used to identify existing occurrences of wheel squeal at nearby noise-sensitive land uses, such as William Mead Homes. South of LAUS, the proposed curvature would also have radii of less than 900 feet; however, no noise-sensitive receptors occur within the screening distance.

Traffic Noise

Based on the project's low trip generation and the existing background traffic counts, no modeling of vehicular traffic noise was undertaken as part of this analysis (L*ink US Traffic Impact Study,* Appendix D of this EIR).

Operational Vibration

FTA and FRA procedures for a general operational vibration assessment (as outlined in Section 6 of the FTA manual and Chapter 8 of the FRA manual) were used for this analysis (Appendix H of this EIR). The FTA/FRA assessment procedure requires the following data:

- Number of daily vibration events – The number of daily events was classified as frequent because there would be over 70 vibration events of the same kind per day.
- Receiver land use designation (categories specified above) – Category 2 (for the residences) or Category 3 (parks, schools, and daycare) land use designations were used for all of the receivers analyzed.

- Vibration source levels – The source levels were derived from Figure 6-4 of the FTA manual using the curve for "locomotive-powered passenger or freight" and Table 8-1 of the FRA manual (Appendix H of this EIR).
- Distance from source to receiver (building) footprints – The distance between the source (i.e., rail centerline) and the receiver was measured using geographic information system.
- Train speed, suspension, wheel condition (worn or flat-spots), and track condition – Train speed estimates would range from 20 to 25 miles per hour. Because the train types are regional/intercity rail and HSR, the train's wheels were assumed to be in good condition (i.e., no flat spots).
- Number of floors above grade to the receiver – The upper floors of the Mozaic Apartments and William Mead Homes were considered relative to the project-related source of potential noise and vibration.
- Soil characteristics of ground between the vibration source and receiver – Soil propagation characteristics were assumed to be normal (rather than efficient) based on the State Soil Geographic database for California (Appendix H of this EIR). Typical vibration-sensitive structures were assumed to be large masonry buildings based on field observations.
- Receiver construction/foundation type and description, including whether it is fragile or extremely fragile – Using the generalized ground surface vibration curve, the PPV velocity level data at the receiver distance of interest was adjusted based on the factors affecting the source, factors affecting the vibration path, and factors affecting the receiver, as specified in the FTA manual (Appendix H of this EIR). Structure types and associated adjustments were also obtained from the FTA manual (Appendix H of this EIR).

The FTA manual provides guidelines to assess human response to different levels of groundborne noise and vibration (Table 3.6-4). The project study area does not have any Category 1 land uses within the screening distance. The majority of vibration-sensitive land uses in the project study area are Category 2 land uses. The term "frequent events" is defined as more than 70 vibration events per day, while the term "infrequent events" is defined as less than 70 vibration events per day.

Groundborne noise is normally not a consideration when trains are at-grade (i.e., not underground). In these situations, the airborne noise is the major consideration. Groundborne noise generally becomes an important consideration for subways or other projects in which part of the alignment includes a tunnel.

FTA and FRA construction-related vibration guidelines call for investigation of the potential for vibration-induced damage to fragile or extremely fragile buildings (Appendix H of this EIR). Damage to a building is possible (but not necessarily probable) if ground vibration levels exceed the following criteria:

- Exceeds 0.20-inch-per-second PPV (approximately 100 VdB) for fragile buildings.
- Exceeds 0.12-inch-per-second PPV (approximately 95 VdB) for extremely fragile buildings.

No fragile or extremely fragile buildings are located within the screening distance to the project study area. Table 3.6-4 presents the groundborne vibration and noise impact criteria.

Table 3.6-4. Groundborne Vibration and Noise Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 micro inch/second)			Groundborne Noise Impact Levels (dB re 20 micro Pascals)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[c]	65 VdB[c]	65 VdB[c]	NA[d]	NA[d]	NA[d]
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 primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: Appendix H of this EIR

Notes:

[a] ***The term frequent events is defined as more than 70 vibration events per day.***

[b] ***The term occasional events is defined as between 30 and 70 vibration events of the same source per day.***

[c] ***The term infrequent events is defined as fewer than 70 vibration events per day.***
This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration- sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditioning systems and stiffened floors. Vibration-sensitive equipment is not sensitive to groundborne noise.

dB=decibel; dBA=A-weighted decibel; NA=not applicable; VdB=velocity in decibels

The potential for damage to adjacent architectural resources from project-related operational vibration was investigated, in addition to the modeled noise- and vibration-sensitive receivers discussed above. Following FTA methodology, the potential for vibration damage and annoyance was assessed at sensitive land use within the screening distance.

3.6.4 Existing Conditions

Project Study Area and Noise- /Vibration-Sensitive Sites

The following discussion provides a description of the noise- and vibration-sensitive land uses where sensitive receptors in the project study area (Category 2 and 3 land uses) occur. The receptor locations are used for predictions and represent a cluster of sensitive receptors, which is consistent with FTA/FRA guidance and regulations. The noise analysis area includes those noise-sensitive areas within the screening distance, or 750 feet of the proposed alignment. Because vibration attenuates more quickly with distance, the vibration analysis is substantially smaller; therefore, it includes only those vibration sensitive land uses and structures within 100 feet of the alignment.

Figure 3.6-4 identifies the noise- and vibration-sensitive land uses where sensitive receptors in the project study area (Category 2 and 3 land uses) occur, and community noise and vibration measurement locations for modeled receivers. The receptor locations are used for predictions and represent a cluster of sensitive receptors, which is consistent with FTA/FRA guidance and regulations. Noise- and vibration-sensitive land uses include William Mead Homes, Metro Senior Housing, Mozaic Apartments, One Santa Fe Apartments, a daycare/elementary school (Ann Street Elementary), and a park (i.e., athletic fields at the William Mead Homes). Two jails are also located within the analysis area; however, there are no outdoor uses at these jails. For this reason, the jails were evaluated for indoor noise exposure from the proposed project (i.e., sleep disturbance).

Existing Noise Environment

Metro completed a community baseline sound survey to identify existing noise exposure at noise-sensitive receptors located near the project as well as at existing platforms and the existing concourse. Table 3.6-5 provides the measured community noise levels for existing conditions (2016).

Table 3.6-5. Measured Noise Levels for the Existing Condition

Site ID	Location	Noise Levels (dBA)		
		L_{dn}	L_{eq} (day)	L_{eq} (night)
ML1a	William Mead Homes	69	66	62
ML1b	Athletic Fields at William Mead Homes	69	66	61
ML2	Twin Towers Correctional Facility (Terminal Tower)	73	71	66
ML3	Mozaic Apartments (Amtrak Baggage Handling Building)	67	64	60
ML4	One Santa Fe Apartments and Studios (Emergency Security Operations Center)	71	64	64

Source: Appendix H of this EIR

Notes:
dBA=A-weighted decibel; ID=identification; L_{dn}=day-night average noise level; L_{eq}=equivalent noise level; L_{max}=maximum sound level; ML=monitoring location

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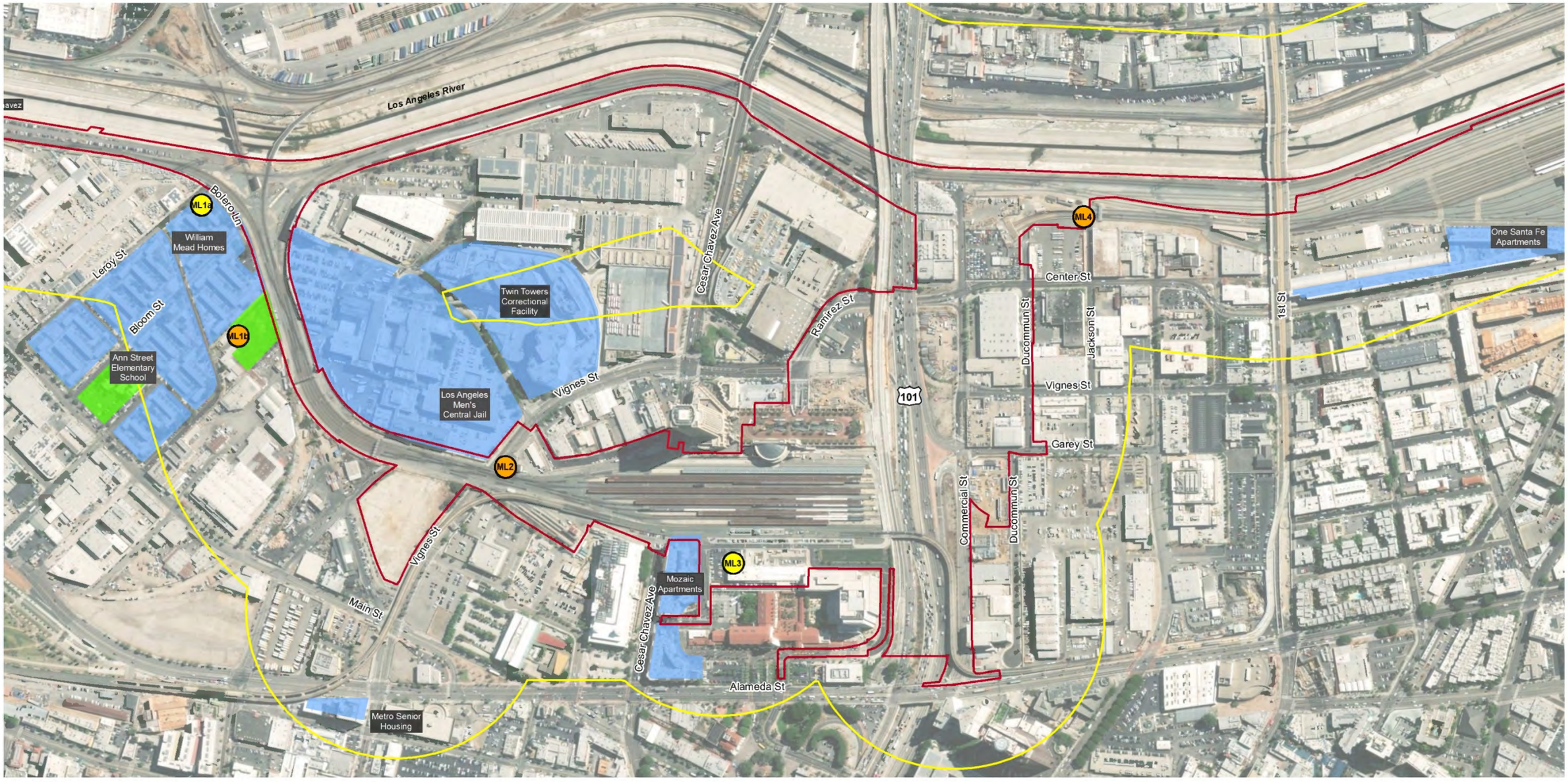
Figure 3.6-4. Noise-/Vibration-Sensitive Land Uses, Community Noise and Vibration Measurement Locations, and Sensitive Receptor Clusters



Source:
Appendix H of this EIR

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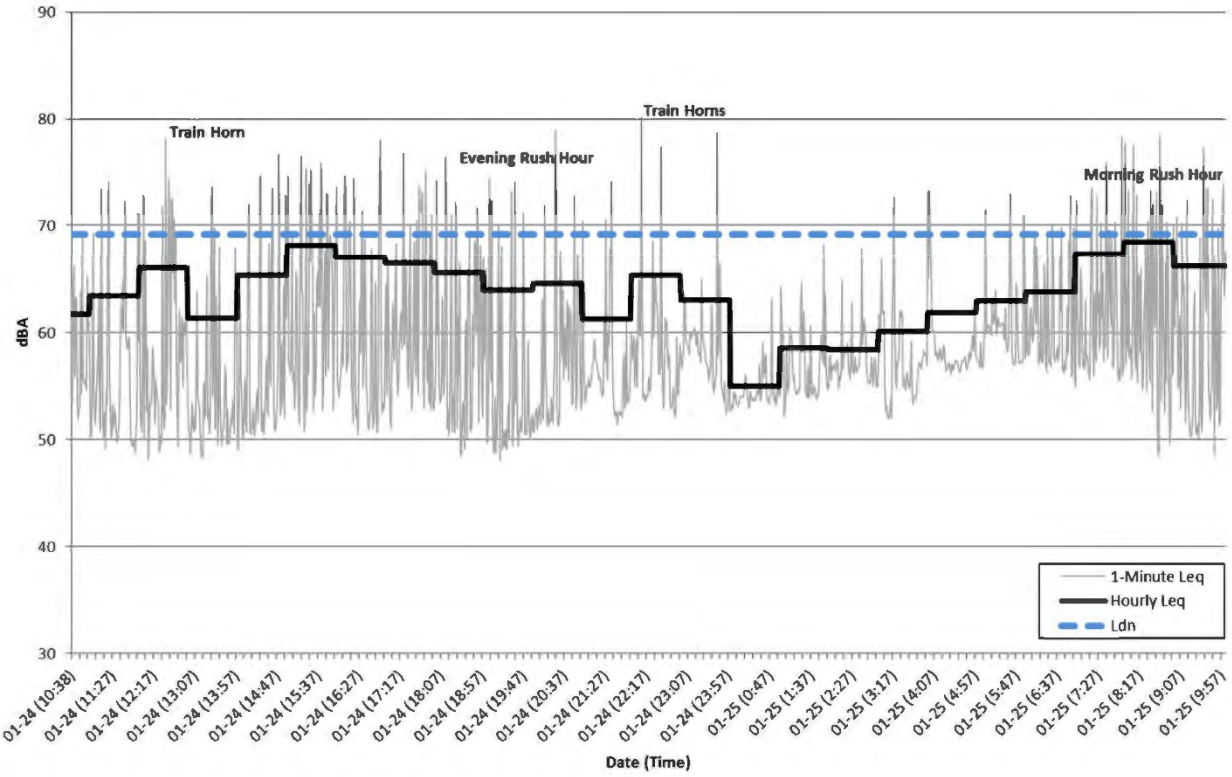
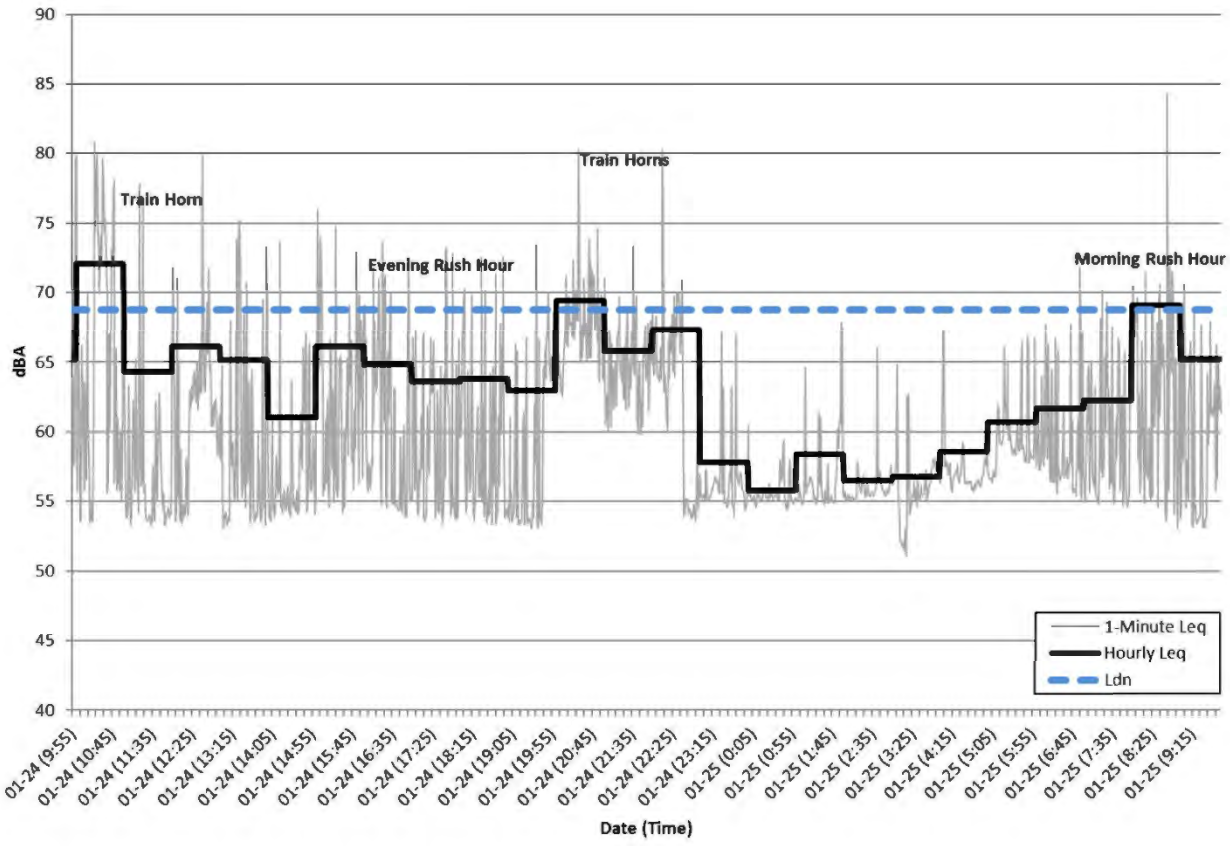
ML1 – William Mead Homes. William Mead Homes is located in Segment 1 of the project study area, which is in close proximity to the lead tracks in the throat segment. Two locations were selected to monitor noise levels, one on a building rooftop located approximately 112 feet from the tracks (ML1a) and one in the facility athletic fields (ML1b) (Figure 3.6-4). These two locations were selected due to security concerns identified by management personnel of the William Mead Homes when approached about selecting ground level locations. Ground locations near Building 16 of the William Mead Homes would not be suitable due to the high likelihood of equipment tampering or theft. At the athletic fields, the location selected was adjacent to the park and within a fenced area that is secured, which was agreed to with the management of William Mead Homes since other locations at the athletic fields were identified as having a high likelihood of equipment tampering or theft. The noise meters at ML1a and ML1b were set up January 24, 2017, with the measurements lasting 24-hours. An additional location was selected for the vibration measurements in front of the nearest structure to the railroad ROW. Additional details are provided in Appendix H of this EIR. Figure 3.6-5 and Figure 3.6-6 are time history charts of the monitored 1-hour Leq levels.

Figure 3.6-5. Monitoring Location 1a – Hourly Equivalent Noise Level Time History



Source: Appendix H of this EIR

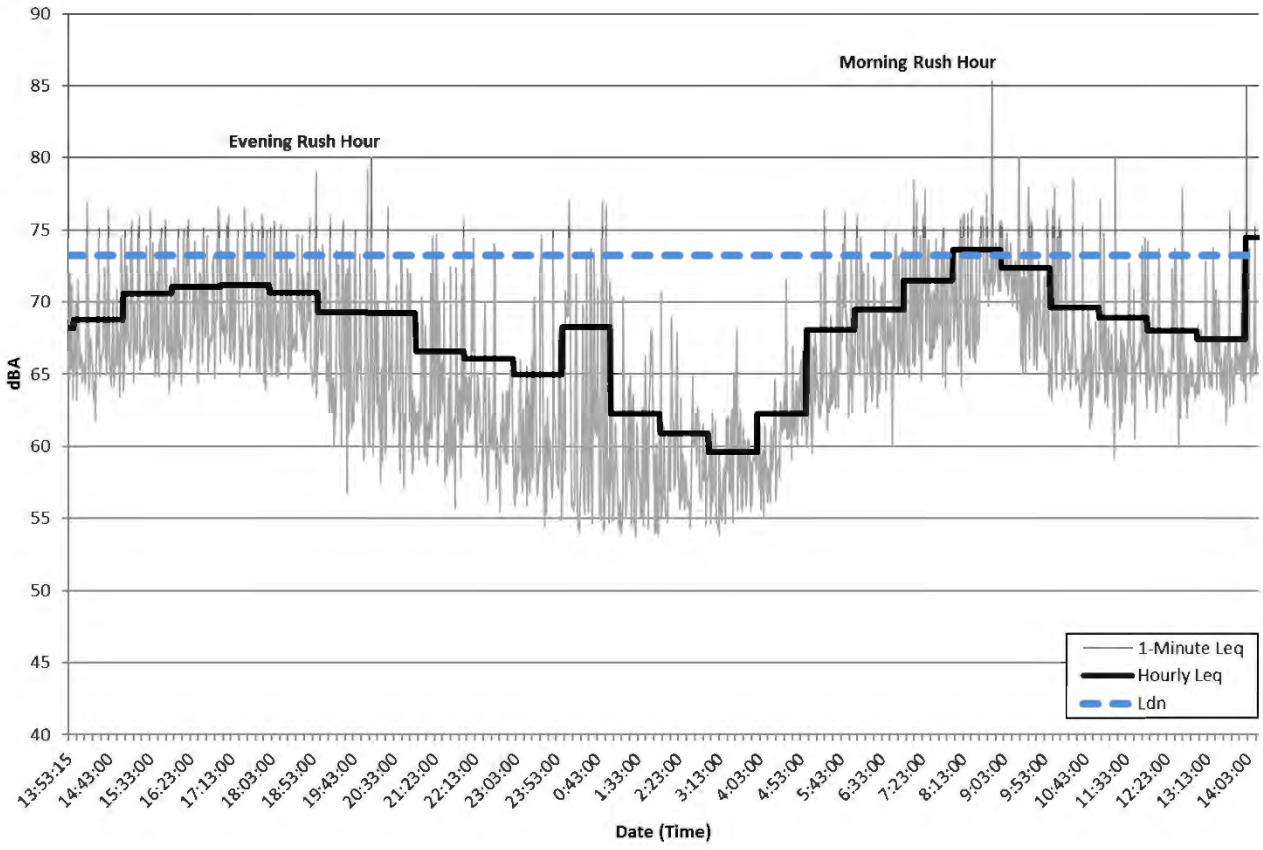
Figure 3.6-6. Monitoring Location 1b – Hourly Equivalent Noise Level Time History



Source: Appendix H of this EIR

ML2 – Twin Towers Correctional Facility. Permission was not granted for the correctional facility, so a suitable, alternate location was determined to be the terminal tower, approximately 366 feet from the original location (Figure 3.6-4). The terminal tower location was closer in proximity to the railroad tracks, approximately 43 feet. A noise meter was set up January 25, 2017, with the measurements lasting 24 hours. Figure 3.6-7 provides the time-history chart of the measured hourly L_{eq}.

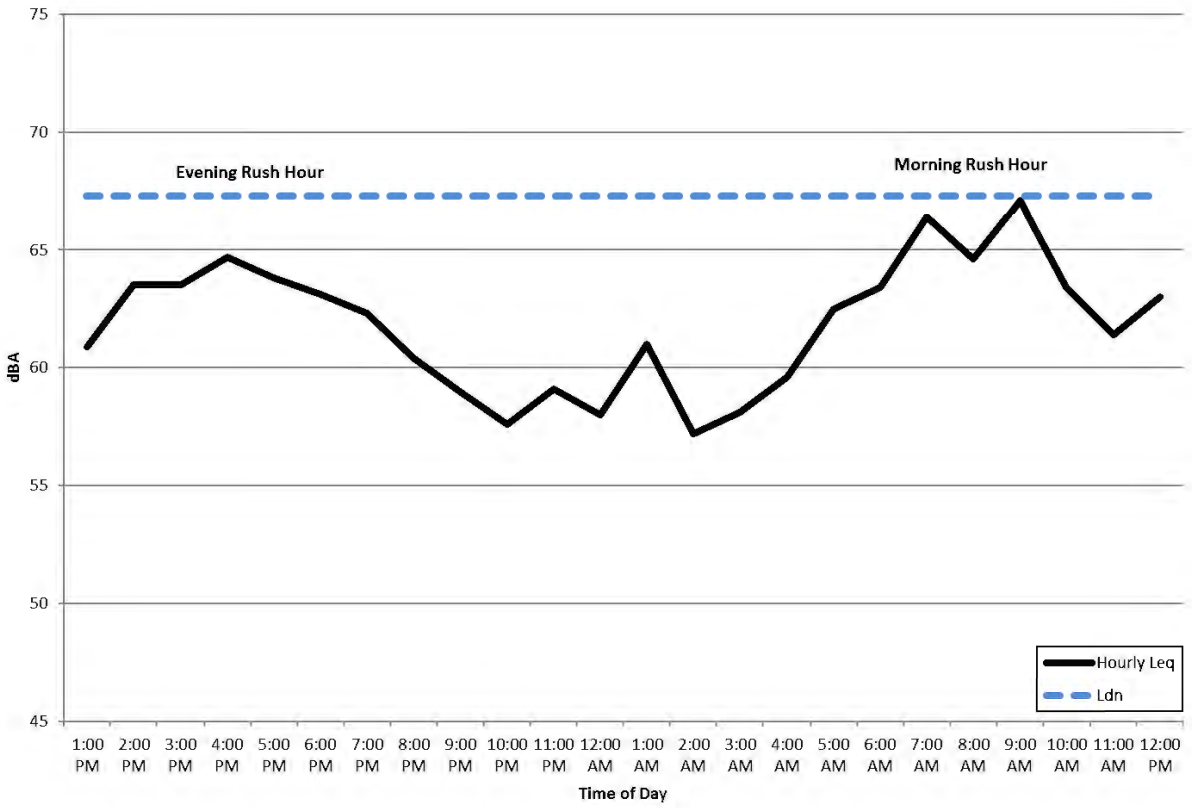
Figure 3.6-7. Monitoring Location 2 – Hourly Equivalent Noise Level Time History



Source: Appendix H of this EIR

ML3 – Mozaic Apartments. Noise monitoring to capture exiting ambient conditions, including sounds from the railyard, were conducted adjacent to the Mozaic Apartments on the rooftop of the Amtrak Baggage Handling building (Figure 3.6-4). This location is representative of existing noise levels at the Mozaic Apartment Building, located approximately 50 feet from the nearest Gold Line tracks. The noise monitor was set up on January 24, 2017 at 1:37 PM on the northeast corner of the rooftop of the building. Winds were calm during the measurement effort. The sound level meter was field calibrated and secured for 24 hours on a tripod that was kept on the rooftop with sandbags. Observed noises at this location included street traffic, idling trains, moving trains, and the public address system at LAUS. Figure 3.6-8 is a time-history chart of the measured hourly Leq. Because of equipment limitations at this location, 1-minute Leq intervals could not be collected and are not included on Figure 3.6-8.

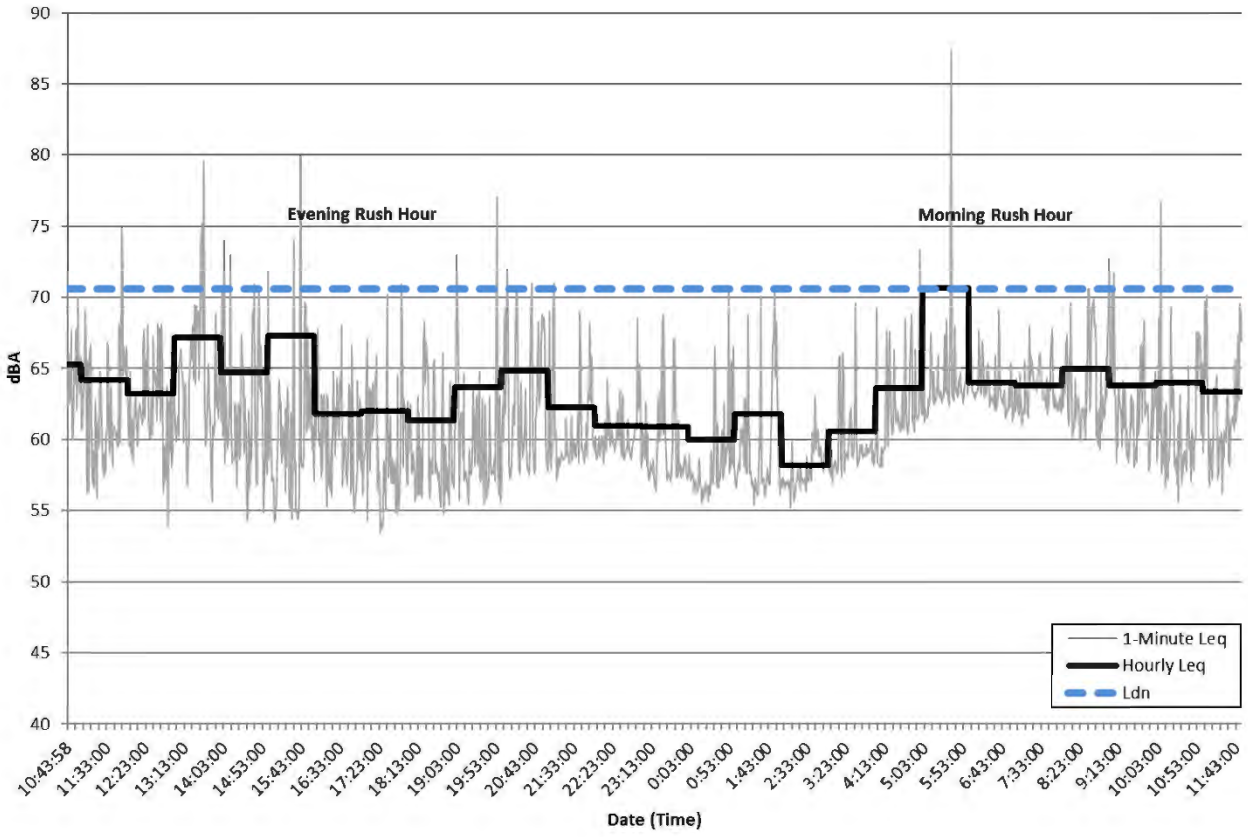
Figure 3.6-8. Monitoring Location 3 – Hourly Equivalent Noise Level Time History



Source: Appendix H of this EIR

ML4 – One Santa Fe Apartments and Studios. Permission to enter the apartments was not granted, so the Metro Emergency Security Operations Center was determined to be a suitable location (Figure 3.6-4). This location is roughly the same distance from the existing railroad tracks as the One Santa Fe Apartment complex and in a similar acoustical environment (i.e., urban, exposed to roadway and railroad traffic, etc.). Noise monitoring started on January 25, 2017 and lasted 24 hours. Figure 3.6-9 provides a time-history chart of the ML4 measurement data.

Figure 3.6-9. Monitoring Location 4 – Hourly Equivalent Noise Level Time History



Source: Appendix H of this EIR

Existing Vibration Levels

Existing vibration levels were monitored at ML1a and ML3 to identify community existing vibration levels associated with rail operations as well as background, non-rail vibration levels. The highest measured vibration levels from rail operations for ML1a and ML3 are provided in Table 3.6-6. The measurement position at ML1a was located approximately 30 feet from Building 16 at William Mead Homes. At ML3, the monitoring position was conducted at ground level; whereas the first floor units of Mozaic Apartments are above grade.

Table 3.6-6. Existing Rail Operation Vibration Levels

Site ID	Location	Vibration Levels (L_{max} VdB)
ML1a	William Mead Homes	69
ML3	Mozaic Apartments	84

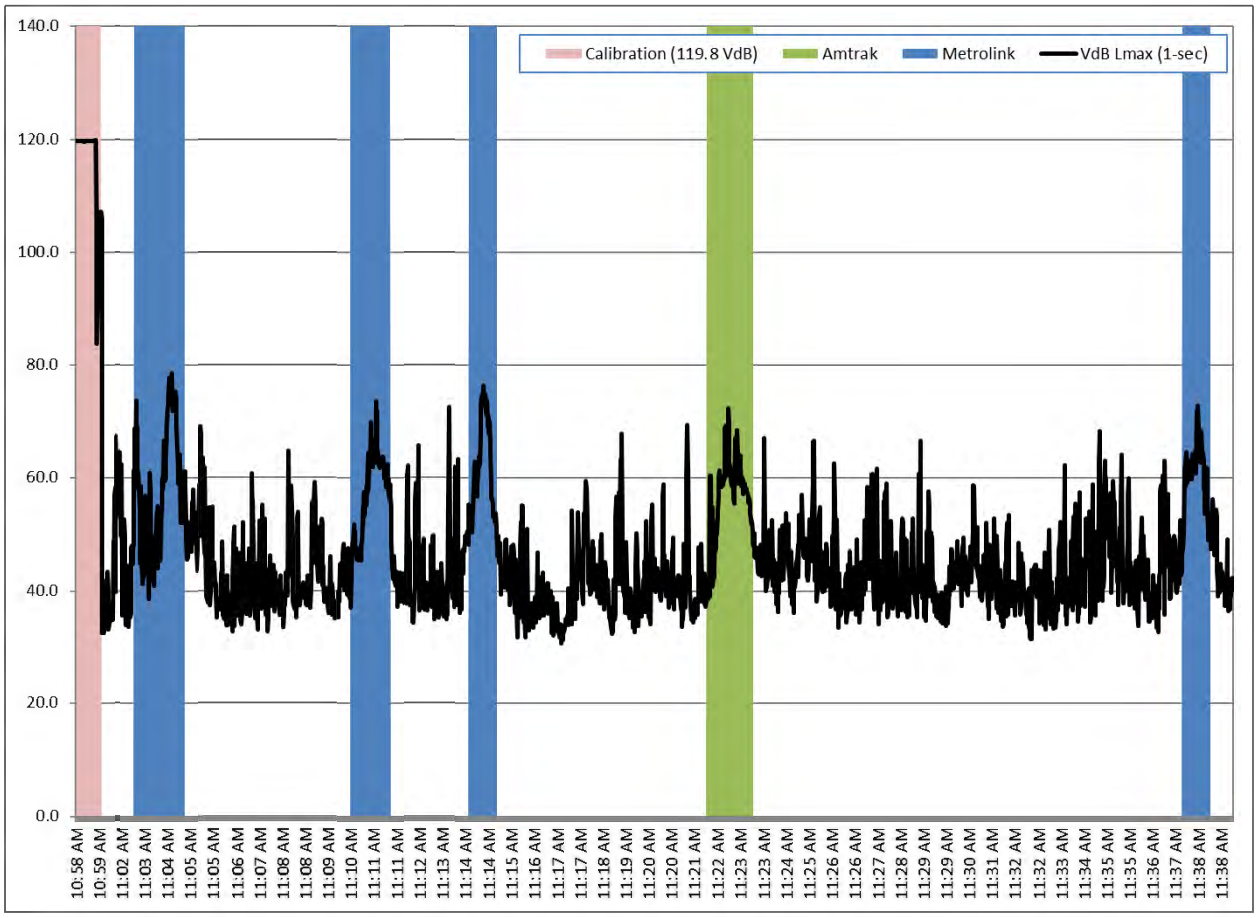
Source: Appendix H of this EIR

Notes:
ML=monitoring location; L_{max}=maximum sound level; VdB=velocity in decibels; ML1a adjusted to be representative of the building location.

ML1a – William Mead Homes. Rail vibration events were measured, which included Metrolink and Amtrak trains. Vibration levels during train events were variable with the highest monitored VdB 1-Second Lmax provided in Table 3.6-6. Because the vibration sensor was located approximately 30-feet from the building in the direction of the train tracks, existing vibration levels would be lower at the building itself. Figure 3.6-10 provides a 1-second time history chart of the monitored VdB with train events identified.

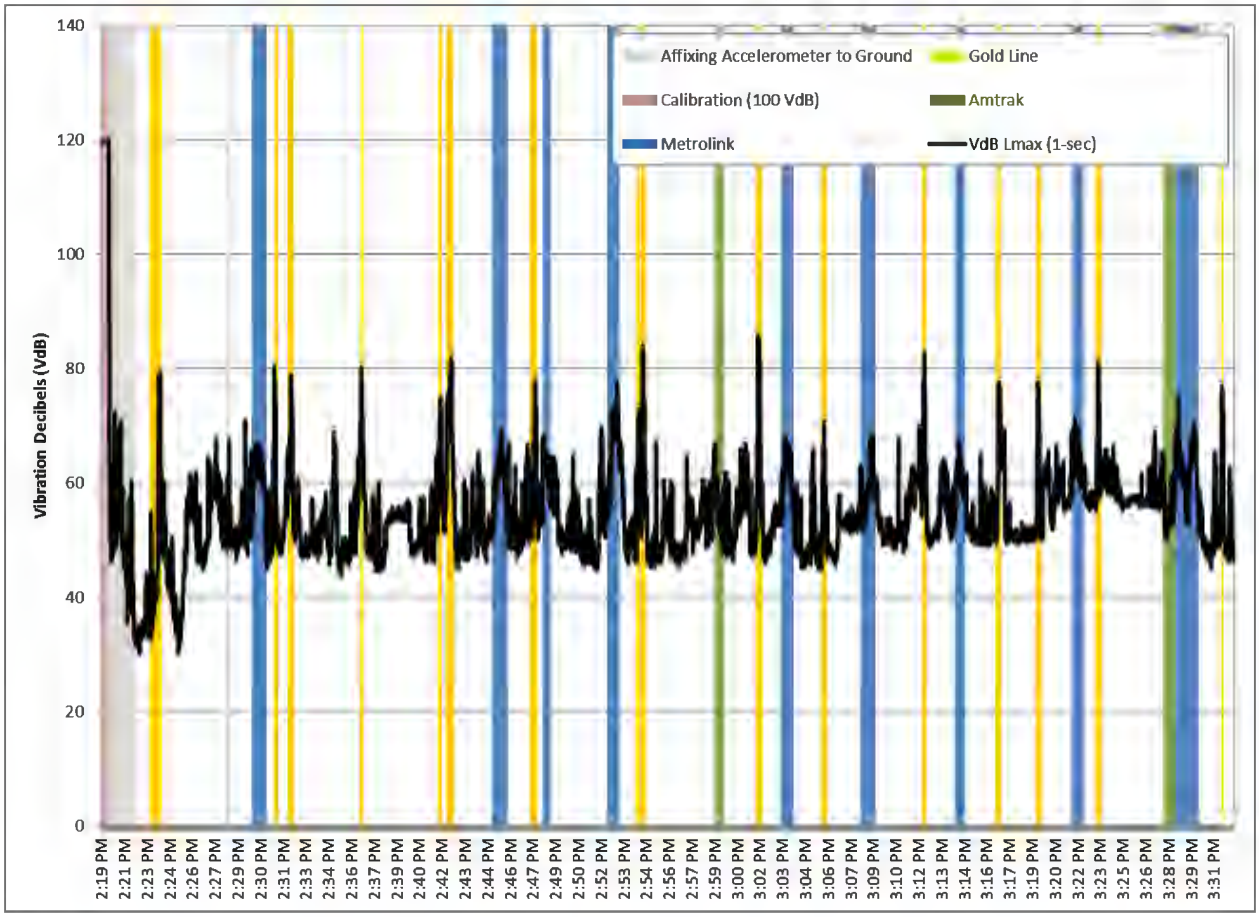
ML3 – Mozaic Apartments. The monitoring unit was firmly affixed to the sidewalk with adhesive at a distance representative of the corner of the nearest point of the Mozaic Apartment complex to the LAUS platforms. Rail vibration events were measured which included the Gold Line, Metrolink and Amtrak trains which were operating on several different tracks accessing various platforms. Vibration levels during train events were variable with the highest monitored VdB 1-second provided in Table 3.6-6. Figure 3.6-11 provides a 1-second time history chart of the monitored VdB with train events identified. Existing vibration levels at this location currently exceed the FTA/FRA threshold for Category 2 land uses.

Figure 3.6-10. Monitoring Location 1a – 1-Second Velocity in Decibels Time History with Rail Events



Source: Appendix H of this EIR

Figure 3.6-11. Monitoring Location 3 – 1-second Maximum Sound Level Velocity in Decibels with Time History



Source: Appendix H of this EIR

3.6.5 Environmental Impacts

Thresholds of Significance

The proposed project would result in a significant noise or vibration impact under CEQA if the project would result in:

A. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

B. Exposure of persons to, or generation of, excessive groundborne vibration or ground borne noise levels

C. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

D. A substantial temporary or periodic increase in ambient noise levels existing without the project

E. Exposure of persons residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport

F. Exposure of persons residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip

Thresholds Requiring No Further Analysis

The following criteria were determined to result in no impact or are otherwise inapplicable to the actions associated with the project.

E. Public Airport or Public Use Airport – The project study area is not located within 2 miles of a public airport or public use airport. No new heliports or airport facilities are proposed as part of the project. Based on these considerations, no further discussion related to airport compatibility issues is required. No impact would occur.

F. Private Airstrip – No new heliports or airport facilities are proposed as part of the project, and no private airstrips are located in the project study area. Based on these considerations, no further discussion related to airport compatibility issues is required. No impact would occur.

Analysis

THRESHOLDS 3.6-A AND 3.6-C	A. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. C. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Direct Impacts – Operations

2026 Condition

In the 2026 condition, regional/intercity rail service would operate at increased levels of service, as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR). In the 2026 condition, new lead tracks would not be constructed near William Mead Homes in the throat segment (Segment 1). In the concourse segment (Segment 2), Tracks 1 and 2 would be utilized by Metro's Gold Line, and the remaining tracks (Tracks 3 through 14) would be used by regional/intercity trains. In the run-through segment (Segment 3), construction of two new run-through tracks would result in a new source of project-related noise for land uses nearby.

As shown in Table 3.6-7, noise levels in the 2026 condition would range from 45 to 67 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 57 to 67 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes). In 2026, moderate impacts would occur at 24 multifamily residences (all at William Mead Homes). No moderate or severe impacts would

occur at the Mozaic Apartments, Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, Metro Senior Housing, One Santa Fe Apartments, or the daycare and the park/athletic field near William Mead Homes.

Based on the results in Table 3.6-7, impacts are considered less than significant. The FRA and FTA manuals include provisions for consideration of mitigation for moderate impacts. Although implementation of Mitigation Measure NV-1 (described in Section 3.6.6) is not required for the proposed project in the 2026 condition because impacts are considered less than significant, Metro may construct the sound wall in accordance with Mitigation Measure NV-1 earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.

Figure 3.6-12 depicts the noise contours associated with the moderate impact areas at William Mead Homes for the proposed project in the 2026 condition.

Table 3.6-7. Operational Noise Levels (2026)

Noise-sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure (dBA)	Proposed Project		
				Range of Sound Levels (dBA))	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	50-69	0	24
	3	2	66	57-67	0	0
Metro Senior Housing	2	123	60	50	0	0
Los Angeles County Men's Central Jail	2	4,000[a]	73	54	0	0
Twin Towers Correctional Facility	2	9,500[a]	73	54	0	0
Mozaic Apartments East Building	2	176	67	48-62	0	0
Mozaic Apartments West Building	2	96	67	45-51	0	0
One Santa Fe Apartments/Studios	2	438	71	45-61	0	0
Project Total	2	14,748a	60–73	45-67	0	24
	3	2	66	57-67	0	0

Source: Appendix H of this EIR

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles County Men's Central Jail, and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore, only interior noise levels are of concern. The prisons are built out of concrete, and have thick windows to keep prisoners inside; therefore, interior sound levels are estimated to be at least 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted decibel; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level

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Figure 3.6-12. Noise Impact Areas at William Mead Homes – Proposed Project (2026 Condition)

Source: Appendix H of this EIR

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2031 Condition

In the 2031 condition, regional/intercity rail service would operate at increased levels, as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR). In the throat segment, the proposed project includes one new lead track that would be constructed within the railroad ROW in closer proximity to William Mead Homes (Building 16). In the concourse segment (Segment 2), Tracks 1 and 2 would be utilized by Metro's Gold Line, and the remaining tracks (Tracks 3 through 14) would be used by regional/intercity trains. In the run-through segment (Segment 3), construction of the new run-through tracks would result in increased project-related noise levels for land uses nearby.

As shown in Table 3.6-8, noise levels in the 2031 condition for the proposed project would range from 47 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 63 to 73 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes) (Table 3.6-8).

Also shown in Table 3.6-8, in the 2031 condition, the proposed project would result in moderate impacts on 73 multifamily residences (40 William Mead Homes units and 33 Mozaic Apartment units) and severe impacts on 40 multifamily residences (all William Mead Homes units) and one park/athletic field near William Mead Homes.

- For William Mead Homes, severe operational noise impacts in the 2031 condition is considered a significant impact. Mitigation Measure NV-1 (described in Section 3.6.6) is proposed to reduce operational noise impacts for the proposed project to a level less than significant.
- For the Mozaic Apartments, although exterior noise levels at the Mozaic Apartments would result in moderate noise impact at 33 units, specifically at the balconies of the units located closest to LAUS, mitigation measures are not proposed for consideration because exterior areas (balconies) of the Mozaic Apartments are already exposed to relatively high existing noise levels from transit and railroad operations located at LAUS. Right of entry was not granted by the owner of the Mozaic Apartments, both interior and exterior, to document existing noise exposure from LAUS. The Mozaic Apartments were constructed in 2005 and, as part of the planning process, the developer was required to design the building in accordance with City of Los Angeles Municipal Code, Section 91.1207.14.2 since they are located in close proximity to railroad tracks. The City's code requires that new buildings located in close proximity to train tracks be constructed in such a manner to ensure interior sound levels are 45 dBA L_{dn} or lower. With or without implementation of the proposed project, interior sound levels are assumed to be 45 dBA L_{dn} or lower, because noise attenuation measures in the form of thick pane windows and concrete structures (as opposed to other noise absorbing materials) are already in place, as required by the City of Los Angeles. Furthermore, as with the existing train movements at LAUS, with the proposed project, most of (e.g., over 80 percent) the train movements would occur during daytime hours, during the peak-period, rather than during nighttime hours when rail activity could result in greater sleep disturbance. For these reasons, impacts are considered less than significant.

- The Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility are located within the project study area. These two jails do not have outdoor uses and are not predicted to be subjected to noise levels that exceed severe or moderate noise limits. Additionally, these two facilities are comprised of buildings made with concrete with thick windows. Project interior noise levels are estimated to be at least 20 dB lower than those experienced at the exterior of these structures consistent with U.S. Department of Transportation (USDOT) Federal Highway Administration guidance for interior sound level attenuation which would be similar for railroad noise sources (Appendix H of this EIR). Interior noise levels would be below 45 dBA L_{dn}, which is a level that the U.S. EPA has identified as a level that does not interfere with interior activities (e.g., speech and sleeping) and has a low potential for annoyance (Appendix H of this EIR). For the reasons above, impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified, and impacts are considered less than significant.

Figure 3.6-13 depicts the noise contours associated with moderate and severe impact areas at William Mead Homes for the proposed project in the 2031 condition.

Table 3.6-8. Operational Noise Levels (2031)

Noise-sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure(dBA)	Proposed Project		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	59-75	40	40
	3	2	66	63-73	1	0
Metro Senior Housing	2	123	60	59	0	0
Los Angeles County Men's Central Jail	2	4,000a	73	62	0	0
Twin Towers Correctional Facility	2	9,500a	73	58	0	0
Mozaic Apartments East Building	2	176	67	53-66	0	33
Mozaic Apartments West Building	2	96	67	50-55	0	0
One Santa Fe Apartments/Studios	2	438	71	47-63	0	0
Project Total	2	14,748a	60-73	47-75	40	73
	3	2	66	63-73	1	0

Source: Appendix H of this EIR

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles County Men's Central Jail and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore, only interior noise levels are of concern. The prisons are built out of concrete and have thick windows to keep prisoners inside; therefore, exterior sound levels would be 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted Decibel; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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Figure 3.6-13. Noise Impact Areas at William Mead Homes – Proposed Project (2031 Condition)

Source: Appendix H of this EIR

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2040 Condition

In the 2040 condition, additional regional/intercity rail train movements through LAUS are anticipated to occur, and the planned HSR system would be in operation, as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR). In the throat segment (Segment 1), quieter, electrified HSR trains would share the two western lead tracks while regional/intercity rail trains would operate on the remaining eastern four lead tracks. In the concourse segment (Segment 2), Tracks 1 and 2 would be utilized by Metro's Gold Line, and Tracks 3 through 6 would be used by CHSRA for the planned HSR system, while the remaining tracks would be used by regional/intercity rail trains. In the run-through segment (Segment 3), a greater amount of regional/intercity trains, in addition to HSR trains, would operate on up to 10 run-through tracks, thereby resulting in higher project-related noise levels for noise-sensitive land uses nearby.

As shown in Table 3.6-9, noise levels in the 2040 condition for the proposed project would range from 47 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 56 to 73 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic facility near William Mead Homes). As shown in Table 3.6-9, in the 2040 condition, the proposed project would result in moderate impacts on 49 multifamily residential units (16 at William Mead Homes and 33 at the Mozaic Apartments) and severe impacts on 30 multifamily residential units (24 at the William Mead Homes complex and 6 at the Mozaic Apartments) and one park/athletic field near William Mead Homes.

- For William Mead Homes, severe operational noise impacts in the 2040 condition is considered a significant impact. Mitigation Measure NV-1 (described in Section 3.6.6) is proposed to reduce operational noise impacts for the proposed project to a level less than significant.
- For Mozaic Apartments, although noise attenuating measures are already in place, severe impacts would occur. For the same reasons as those described previously, interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower. Additionally, most of (e.g., over 80 percent) the train movements would occur during daytime hours, during the peak-period, rather than during nighttime hours when rail activity could result in greater sleep disturbance. Impacts are considered less than significant.
- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described above. Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified. Impacts are considered less than significant.

Figure 3.6-14 depicts the noise contours associated with moderate and severe noise impact areas at William Mead Homes with implementation of the proposed project, in the 2040 condition.

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Table 3.6-9. Operational Noise Levels (2040)

Noise-sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure(dBA)	Proposed Project		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	54-75	24	16
	3	2	66	56-73	1	0
Metro Senior Housing	2	123	60	54	0	0
Los Angeles County Men's Central Jail	2	4,000[a]	73	63	0	0
Twin Towers Correctional Facility	2	9,500[a]	73	59	0	0
Mozaic Apartments East Building	2	176	67	52-68	6	33
Mozaic Apartments West Building	2	96	67	49-58	0	0
One Santa Fe Apartments/Studios	2	438	71	47-63	0	0
Project Total	2	14,748[a]	60-73	47-75	30	49
	3	2	66	56-73	1	0

Source: Appendix H of this EIR

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles County Men's Central Jail and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore only interior noise levels are of concern. The prisons are built out of concrete and have thick windows to keep prisoners inside; therefore, exterior sound levels are estimated to be 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted Decibel; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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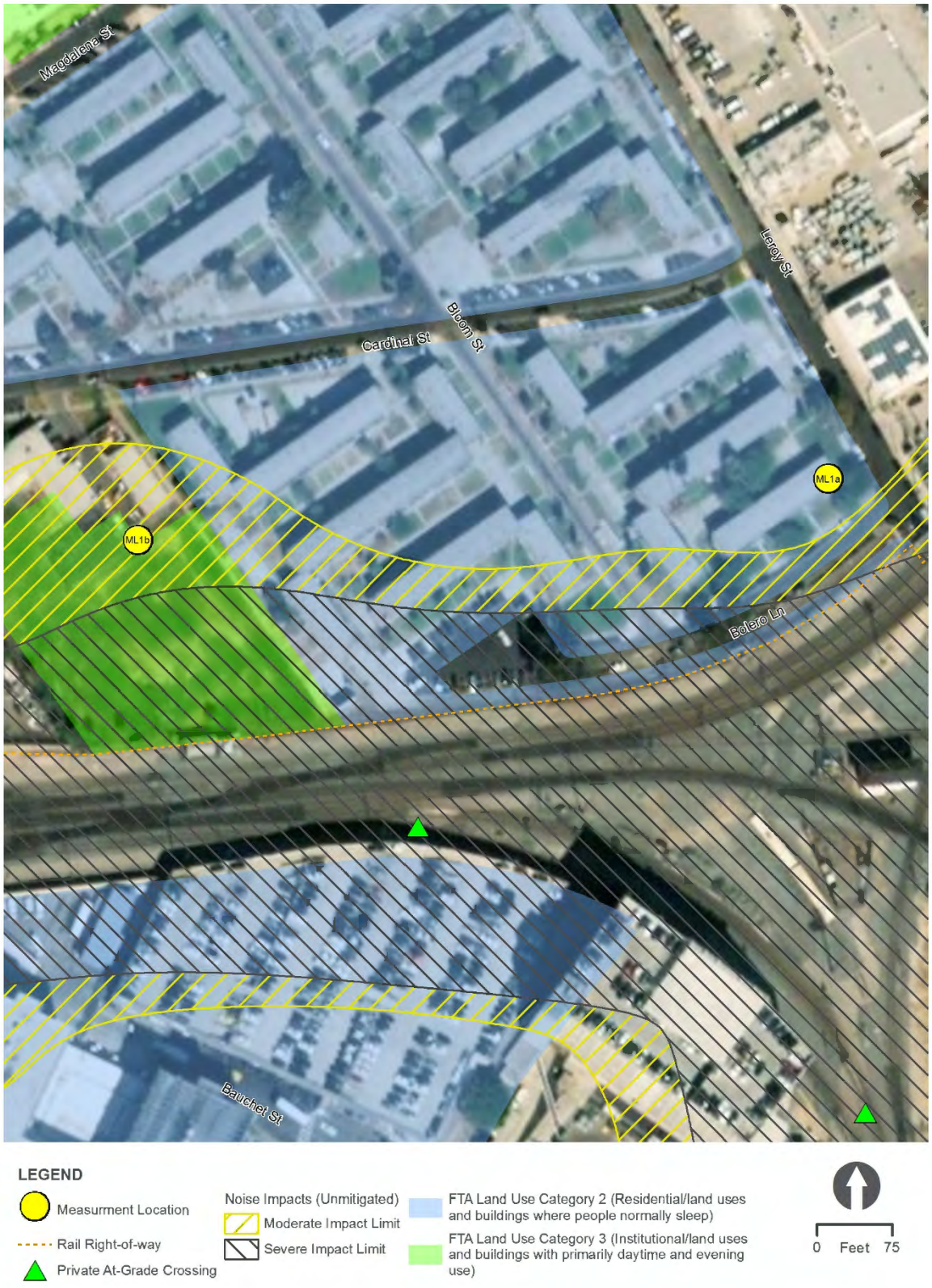
Figure 3.6-14. Noise Impact Areas at William Mead Homes – Proposed Project (2040 Condition)



Source: Appendix H of this EIR

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Indirect Impacts

Implementation of the proposed project could encourage residential and commercial infill development around LAUS that could indirectly result in the placement of new noise-sensitive land uses near project elements; however, it is unknown if and when such land use development would occur. Additionally, new development would be required to comply with City of Los Angeles Municipal Code, Section 91.1207.14.2. In this context, impacts are considered less than significant.

THRESHOLD 3.6-B	Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels

Direct Impacts – Construction

Construction of the proposed project would result in temporary vibration from use of heavy equipment and machinery. Building demolition would also be required in limited circumstances along Commercial Street. The vibration levels from construction activities were estimated using the method described in Section 3.6.3, and the results are summarized in Table 3.6-10.

Two pieces of construction equipment (pile driver and vibratory roller) were utilized in this assessment because those pieces of equipment have the highest construction vibration levels anticipated to be used during construction. Vibration from pile driving has the highest vibratory level but would only be used for limited durations and at select locations where piles are required to be driven. The vibratory roller is more likely to be used, especially in areas near noise-sensitive receivers. Table 3.6-10 indicates that within approximately 50 feet of a pile driving activity, there is potential for vibration-related structural damage. The vibratory roller is not predicted to damage structures because the vibratory roller would not be used within 25 feet of a sensitive structure, a distance that eliminates concern of structural damage. The source levels are estimates provided in the FTA guidance and are generally conservative; however, it is possible that ultimately whatever pile driver is used will have a somewhat different source level.

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Table 3.6-10. Groundborne Vibration and Groundborne Noise Levels (Construction)

Equipment	PPV at 25 feet (inch/second)	VdB at 25 feet	50 feet		75 feet		100 feet		150 feet		200 feet		300 feet	
			PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB
Impact Pile Driver	0.644	104	0.228	95	0.124	90	0.081	86	0.044	80	0.028	77	0.015	72
Vibratory Roller	0.21	94	0.074	85	0.040	80	0.026	76	0.014	70	0.009	67	0.005	62

Source: Appendix H of this EIR

Notes:
PPV=peak particle velocity; VdB=velocity in decibels

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From an annoyance perspective, impact pile driving would be characterized as a frequent source of vibration, as there would be more than 70-pile strikes (i.e., events) per day. Mozaic Apartments are the nearest sensitive land uses and are within 300 feet from pile driving activities (if this construction technique is utilized). Additionally, use of the vibratory roller may occur near some sensitive land uses continuously over the course of several days and would be considered a frequent vibration source during construction. The vibratory roller would be used in closer proximity to sensitive areas, such as William Mead Homes (Category 2 land use). Per the FTA manual, the frequent impact threshold for Category 2 land uses is 72 VdB (Appendix H of this EIR).

Vibration from construction of the proposed project could be considered an annoyance to residential land uses situated within approximately 300 feet of an impact pile driver and 140 feet of the vibratory roller; however, pile driving activities would be restricted from occurring within 50 feet of a sensitive land use and therefore impacts from a damage perspective would occur. Nevertheless, because construction would occur within 300 feet of an impact pile driver and 140 feet of the vibratory roller from sensitive land uses, a severe impact would occur related to William Mead Homes and Mozaic Apartments from an annoyance perspective. This is considered a significant impact. Mitigation Measure NV-2 (described in Section 3.6.6) is proposed to reduce actual construction-related vibration impacts, while Mitigation Measure NV-3 (described in Section 3.6.6) is proposed to reduce the annoyances caused by construction-related vibration impacts. Upon implementation of proposed mitigation, impacts would be reduced to a level less than significant.

Direct Impacts – Operations

Vibration-sensitive land uses and structures near the proposed project would be limited to those Category 2 uses within 200 feet of the project alignment (i.e., the screening distance per FTA guidance). Category 2 uses within 200 feet of the alignment include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex.

2026 Condition

In the 2026 condition, although additional train movements would occur, there would be no changes to train speeds or the track alignment near William Mead Homes and, consequently, there would be no changes to vibration levels. In Segment 2: Concourse Segment and Segment 3: Run-Through Segment of the project study area, the track alignment would change slightly to accommodate Platform 4 modifications, a temporary run-through track ramp, and new run-through tracks crossing US-101. As a result, vibration levels would change slightly at the front row building of the Mozaic Apartment complex with regional/intercity rail trains operating at 10 miles per hour on Tracks 3 and 4.

2031 Condition

Category 2 uses within 200 feet of the proposed project include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex. For the proposed project, regional/intercity rail trains would operate on new lead tracks within the existing railroad ROW, as close as 100 feet from the buildings within William Mead Homes, at speeds of up to 35 miles per hour.

2040 Condition

For the proposed project, regional/intercity trains and HSR trains would operate on shared tracks as close as 100 feet from the William Mead Homes buildings. The proposed project would result in increased train movements in close proximity to Mozaic Apartments, with the Gold Line trains as close as 40 feet, HSR trains as close as 75 feet, and regional/intercity rail trains as close as 185 feet. The estimate of train movements is conservative to assess the highest anticipated vibration levels at the Category 2 land uses.

The results of the vibration analysis are provided in Table 3.6-11.

Table 3.6-11. Groundborne Vibration and Noise Levels (Operations)

Location	Rail Line	Existing Condition	2026		2031		2040	
		VdB	VdB	dBA[1]	VdB	dBA[1]	VdB	dBA[1]
William Mead Homes	HSR	NA	No Change		NA[2]	NA	55	20
	Regional/Intercity Rail	69			68	33	68	33
Terminal Annex	Gold Line	NA	57	21	57	21	57	21
	HSR		NA[2]	NA	NA[2]	NA	54	19
	Regional/Intercity Rail		53	18	53	18	53	18
Mozaic Apartments	Gold Line	84	55	20	55	20	55	20
	HSR	NA	NA[2]	NA	NA[2]	NA	43	8
	Regional/Intercity Rail	77	56	21	56	21	56	21

Source: Appendix H of this EIR

Notes:

[1] ***FTA indicates that typical groundborne noise in dBA is calculated by subtracting 35 dB from the calculated VdB value. See Section 3.6.2 for vibration thresholds.***

[2] ***HSR infrastructure in the interim phase of the project would operate conventional passenger rail.***

[3] ***The westernmost William Mead Home building closest to the proposed project is within 200 feet but beyond 100 feet from crossovers.***

dBA=A-weighted decibel; NA=Not Applicable; VdB=velocity in decibels

As indicated in Table 3.6-11, operational groundborne vibration and noise levels would be below the FTA impact criteria for Category 2 land uses and Category 3 land uses (Appendix G of this EIR). Additionally, there are no predicted increases of 3 VdB or greater from operation of the proposed project. Therefore, no operational groundborne vibration or groundborne noise impacts would occur. Impacts are considered less than significant.

Indirect Impacts

Operation of the project is unlikely to result in indirect impacts related to groundborne vibration that would result in vibration-related annoyance or physical damage to adjacent structures. Although land use changes (and intensification) are expected with or without the project, these changes would need to be approved by local jurisdictions and would be subject to environmental review. This would include any new development proposed around LAUS and along Commercial Street that might otherwise be sensitive to operational sources of vibration. Impacts are considered less than significant.

THRESHOLD 3.6-D	A substantial temporary or periodic increase in ambient noise levels existing without the project

Direct Impacts – Construction

Construction of the proposed project would take place in phases over the course of approximately 6 years. Construction activities associated with the project would result in temporary periods of relatively high noise levels. The noise levels from construction activities were estimated using the method described in Section 3.6.3, and the results are summarized in Table 3.6-13. Table 3.6-13 provides estimates of peak day noise levels for each construction phase and project segment.

During construction, impacts would occur at Category 2 land uses at distances of up to approximately 250 feet under daytime (7:00 AM to 10:00 PM) impact criteria (i.e., 80 dBA L_{eq}) and approximately 300 feet under nighttime (10:00 PM to 7:00 AM) impact criteria (i.e., 70 dBA L_{eq}). It is anticipated that some construction work would take place during nighttime hours to utilize the efficiencies of working during off-peak times of the day, and meet Metro's desired construction completion timeframe.

At William Mead Homes specifically, construction of the sound wall required as part of Mitigation Measure NV-1 would also result in construction noise impacts. Specifically, construction noise associated with the installation of the sound wall and use of heavy machinery is presented in Table 3.6-12.

Table 3.6-12. William Mead Homes Sound Wall Construction Noise Levels

Equipment	Quantity	L_{max} at 50-feet	Composite dBA L_{eq} (hourly) at Distance (feet)				
			50-feet	100-feet	200-feet	400-feet	500-feet
Backhoe	1	78	79	73	67	61	59
185 cubic foot per minute compressor	1	78					
Concrete pump truck	1	81					
400 amp welder	1	74					

Notes:
Usage factors obtained from Federal Highway Administration Roadway Construction Noise Model 2006
dBA=A-weighted decibel; L_{eq}=equivalent noise level; L_{max}=maximum sound level

Category 2 land uses (i.e., residential) exist within the respective daytime and nighttime impact distances (250 feet and 300 feet) and include William Mead Homes and Mozaic Apartments; therefore, the construction noise impact is considered a significant impact. Mitigation Measure NV-2 (described in Section 3.6.6) is proposed to reduce construction-related noise impacts. Mitigation Measure NV-3 (described in Section 3.6.6) also includes provisions to reduce the annoyances caused by construction-related noise impacts (in addition to vibration impacts). Although construction-related noise impacts would be reduced through implementation of Mitigation Measures NV-2 and NV-3 (described in Section 3.6.6), impacts would remain significant and unavoidable.

Direct Impacts – Operations

An evaluation of potential increases in ambient noise levels is addressed under Threshold 3.6-A and 3.6-C.

Indirect Impacts

Indirect impacts related to construction induced vibration are addressed under Threshold 3.6-B.

Table 3.6-13. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1,000
Segment 1: Throat Segment	NA	Drill rig	1	79	86	80	74	68	62	60
		Wheelloader	4	79						
		Excavator	3	81						
		Concrete mixer truck	1	79						
		Crane	1	81						
		Forklift	2	75						
		Water truck	2	74						
Segment 2: Concourse Segment	NA	Drill Rig	1	79	86	80	74	68	62	60
		Wheelloader	4	79						
		Excavator	3	81						
		Concrete mixer truck	1	79						
		Crane	1	81						
		Forklift	2	75						
		Water truck	2	74						

Table 3.6-13. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1,000
Segment 3: Run-Through Segment	Cast-in-drilled-hole piles	Drill Rig	2	79	85	79	73	67	61	59
		Wheelloader	2	79						
		Concrete pump	2	81						
		Concrete mixer truck	4	79						
		Crane	1	81						
		Haul truck	2	76						
	Superstructure Placement	Concrete pump	2	81	83	77	71	65	59	57
		Concrete mixer truck	3	79						
		Forklift	2	75						
		Crane	2	81						
	Pile Driving for Abutments	Pile driving machine	1	101	94	88	82	76	70	68
		Wheel loader	1	79						
		Crane	1	81						
	Bridge Earthwork	Excavator	1	81	81	75	69	63	57	55
		Wheel loader	1	79						
		Hauling truck	2	76						
		Water truck	1	74						

Table 3.6-13. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3] Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1,000
	Commercial Street Earthwork	Dozer	2	82	84	78	72	66	60	58
		Wheel loader	2	79						
		Hauling truck	2	76						
		Water truck	1	74						
	Commercial Street Paving	Backhoe	1	78	83	77	71	65	59	57
		Grader	1	85						
		Asphalt concrete paver	1	77						
		Roller compactor	1	80						
		Asphalt concrete /base delivery truck	1	74						
		Forklift	1	75						
		Water truck	1	74						
	Commercial Street Concrete Work	Concrete pump	2	81	84	78	72	66	60	58
		Concrete mixer truck	6	79						
	BNSF West Bank Yard Earthwork	Dozer	2	82	84	78	72	66	60	58
		Wheel loader	2	79						

Table 3.6-13. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1,000
		Haul truck	2	76						
		Water truck	1	74						
	BNSF West Bank Yard Rail Placement	Compactor	1	83	85	79	73	67	61	59
		Ballast regulator	4	82						

Source: Appendix H of this EIR

Notes:

[1] ***Equipment mix obtained from the project's engineers 7/8/2016***

[2] ***Measured Lmax at given reference distance obtained from the Federal Highway Administration Roadway Construction Noise Model, Federal Highway Administration 2006 and/or FTA Noise and Vibration Guidance 2006.***

[3] ***Distance factor determined by the inverse square law defined as 6 dBA per doubling of distance as sound travels away from an idealized point.***

Usage factor assumed to be that identified in *Federal Highway Administration* Roadway Construction Noise Model.

L_{eq}=equivalent noise level; L_{max}=maximum sound level; NA= Not Applicable

3.6.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to noise and vibration.

NV-1 Construct Sound Wall: Prior to reaching the forecasted maximum daily regional/intercity train movements through LAUS in 2031 (770 trains), Metro shall construct a sound wall up to 22 feet in height to reduce operational noise impacts at William Mead Homes. The sound wall shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have an approximate sound transmission class rating of 50 and a surface density of at least 4 pounds per square foot. Metro may construct the sound wall earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.

NV-2 Employ Noise- and Vibration-Reducing Measures during Construction: The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Noise and vibration reduction measures that would be implemented include, but are not limited to, the following:

- Design considerations and project layout:
  - Construct temporary noise walls, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers
  - Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available
  - Site equipment on the construction site as far away from noise-sensitive sites as possible
  - Construct walled enclosures around especially noisy activities or clusters of noisy equipment (i.e., shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures)
- Sequence of operations:
  - Restrict pile driving to daytime periods
  - Combine noisy operations to occur in the same time period
    - The total noise level produced would not be significantly greater than the level produced if the operations were performed separately
  - Avoid nighttime activities to the maximum extent feasible
    - Sensitivity to noise increases during the nighttime hours in residential neighborhoods

- Alternative construction methods:
    - Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible
        - Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use
    - Use specially-quieted equipment, such as quieted and enclosed air compressors and properly-working mufflers on all engines
    - Select quieter demolition methods, where possible (e.g., sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers)

In an effort to keep construction noise levels below FTA's construction noise or vibration criteria, Metro shall monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring shall be conducted at the first row of residences at William Mead Homes and Mozaic Apartments, within 300 feet of construction activities, approximately). Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance further away. If FTA's construction noise or vibration criteria are exceeded, the contractor shall be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (examples above).

NV-3 Prepare a Community Notification Plan for Project Construction: To proactively address community concerns related to construction noise and vibration, prior to construction, Metro and/or the construction contractor shall prepare and maintain a community notification plan. Components of the plan shall include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Updates to the plan shall be prepared as necessary to indicate changes to the construction schedule or other processes. Metro shall identify a project liaison to be available to respond to questions from the community or other interested groups.

3.6.7 CEQA Significance Conclusion

Implementation of Mitigation Measure NV-1 (described in Section 3.6.6) would reduce operational noise impacts to a level less than significant. Construction of the sound wall for the proposed project would mitigate significant impacts on William Mead Homes in 2031 and 2040 by blocking the line of sight from the receptors to the noise source (e.g., locomotives and railcars). A sound wall's effectiveness is a function of the path length difference between the noise source (trains), receiver (William Mead Homes residents), and wall. The projected sound levels at the receiver decrease in response to the placement of a sound wall, which increases the path length difference. Based on the noise analysis provided in Appendix H of this EIR, the sound wall proposed in Mitigation Measure NV-1 would need to be up to 22 feet in height to be effective in mitigating operational noise to a level less than significant.

Upon implementation of Mitigation Measure NV-1, noise levels at the moderately- and severely-impacted units for the proposed project would be reduced by 12 dB and 7 dB at impacted locations, respectively. Based on these reductions, upon implementation of mitigation, significant operational noise impacts would be reduced to a level less than significant.

Table 3.6-14 provides the noise levels at William Mead Homes before and after the application of Mitigation Measure NV-1. Figure 3.6-15 depicts the approximate placement of the sound wall at William Mead Homes for the proposed project.

Upon implementation of Mitigation Measures NV-2 and NV-3 (described in Section 3.6.6), significant impacts from construction-related noise and vibration would be reduced; however, impacts from construction-related noise would remain significant and unavoidable.

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Table 3.6-14. 2040 Operational Noise Levels at William Mead Homes (Unmitigated and Mitigated)

Receptor ID	Existing Noise Exposure (dBA)	Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})	Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})	Noise Reduction from Mitigation (Insertion Loss)	Unmitigated FTA Level of Noise Impact	Mitigated FTA Level of Noise Impact
WM6	69	68	61	7	Moderate	None
WM8	69	75	63	12	Severe	None
PK1	66	68	61	7	Severe	Moderate

Source: Appendix H of this EIR

Notes:
dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level

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Implementation of Mitigation Measure NV-2 (described in Section 3.6.6) would reduce impacts on sensitive receptors associated with temporary, short-term increased equipment noise, groundborne noise, and vibration from project construction. Mitigation Measure NV-3 (described in Section 3.6.6) would reduce the annoyance of noise and vibration impacts during the construction phase. Implementation of Mitigation Measure NV-1 would further reduce construction-related noise levels.

Although the mitigation measures reduce noise generated during construction, noise levels would remain above 80 dBA L_{eq} (within 100 feet) during daytime hours throughout much of project study area and would result in the most impact within Segment 2, where the Mozaic Apartments occur.

Additionally, nighttime construction activities in close proximity to William Mead Homes and Mozaic Apartments could exceed 70 dBA L_{eq} at distances of up to 300 feet, which would exceed FTA's 8-hour nighttime noise standard. Based on these considerations, impacts related to construction would remain significant and unavoidable.

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Figure 3.6-15. Location of Sound Wall at William Mead Homes (Proposed Project)

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3.7 Biological Resources

3.7.1 Introduction

This section provides an evaluation of the proposed project in relation to existing biological resources within the biological stud area (BSA). Biological resources that are evaluated include federally and state-listed threatened and endangered plant and animal species, vegetation communities, and waters of the U.S., including wetlands. Information contained in this section is summarized from the *Link US Natural Environment Study (Minimal Impacts)* (Appendix I of this EIR), in combination with published sources.

3.7.2 Regulatory Framework

Table 3.7-1 identifies and summarizes applicable federal, state, and local laws; regulations; and plans relative to biological resources.

Table 3.7-1. Applicable Laws, Regulations, and Plans for Biological Resources

Law, Regulation, or Plan	Description
Federal	
Endangered Species Act	The Endangered Species Act defines and lists species as "endangered" or "threatened," designates critical habitat for listed species, and provides regulatory protection for listed species.
MBTA	The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).
CWA - Section 404	Section 404 of the CWA establishes a program to regulate the discharge of fill materials into waters of the U.S., including wetlands. The Section 404 permit program authorizes discharges to waters of the U.S. through the USACE Nationwide Permit or Individual Permit Programs based on the area affected by temporary and permanent impacts.
CWA - Section 401	Section 401 of the CWA protects water quality by regulating the dumping or flow of pollutants into streams, lakes, and rivers.
State	
California Endangered Species Act	The California Endangered Species Act prohibits the take of listed species, except as otherwise provided in state law.
California Fish and Game Code - Section 2080 and 2081	Section 2080 of the California Fish and Game Code prohibits take, importation, exportation, possession, purchase, and sale of any species that are determined to be endangered or threatened. The California Endangered Species Act allows for take incidental to otherwise lawful activity under the provisions of Section 2081(b).

Table 3.7-1. Applicable Laws, Regulations, and Plans for Biological Resources

Law, Regulation, or Plan	Description
California Fish and Game Code - Sections 3503 and 3503.5	Sections 3503 and 3503.5 of the California Fish and Game Code provide regulatory protection to resident and migratory birds and all birds of prey within California.
California Fish and Game Code - Section 1602	Section 1602 of the California Fish and Game Code requires a permit for any activity that would result in the modification of the bed, bank, or channel of a stream, river, or lake, including water diversion and damming and removal of vegetation from a floodplain. This permit type governs both activities that modify the physical characteristics of the stream and activities that may affect fish and wildlife resource that use the stream and surrounding habitat (i.e., riparian vegetation or wetlands).
CEQA	Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA Guidelines Section 15065 ("Mandatory Findings of Significance") and Section 15380 ("Rare or Endangered Species").
Local	
City of Los Angeles Tree Ordinance No. 177404	The City of Los Angeles Tree Ordinance No. 177404, Preservation of Protected Trees, of the City's municipal code discourages the removal or relocation of protected trees. A protected tree means any Southern California native tree species which measures 4 inches or more in cumulative diameter, 4.5 feet above the ground level at the base of the tree. Protected tree species include oaks, Southern California black walnut, western sycamore, and California bay. In addition, any act that will cause a protected tree to die, including, but not limited to, acts that inflict damage upon the root system or other part of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk.
City of Los Angeles General Plan Framework Open Space and Conservation Elements	This chapter of the General Plan includes conservation policies that seek ways to create and utilize open space, addressing matters of land use, urban form, and parks development. Policies include conservation and watershed development goals to protect, conserve, and enhance natural resources.

Notes:
CEQA= California Environmental Quality Act; CFR=Code of Federal Regulations; CWA= Clean Water Act;
MBTA= Migratory Bird Treaty Act; No.=Number; USACE= United States Army Corps of Engineers; U.S.=United States

3.7.3 Methods for Evaluating Environmental Impacts

Findings and conclusions contained in this analysis are based on the *Link US Natural Environment Study (Minimal Impacts)* (Appendix I of this EIR). The findings contained in the *Link US Natural Environment Study (Minimal Impacts)* are based on a general vegetation and habitat survey for biological resources within the BSA conducted in 2015. Impacts associated with the project were evaluated based on observed site conditions and the potential presence of sensitive biological resources. In conducting the impact analysis for biological resources, three principal factors were taken into consideration:

- Level of the impact (e.g., substantial/not substantial)
- Uniqueness (rarity) of the affected resource
- Resource sensitivity

The evaluation considers the interrelationship of these three components. For example, a relatively small magnitude impact on a federally or state-listed species or associated habitat would be considered significant if the species is very rare and believed to be very susceptible to disturbance. Conversely, common wildlife species found in urban areas are not typically rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact.

3.7.4 Existing Conditions

Vegetation Communities and Land Cover Types

As identified in Table 3.7-2, the BSA supports two distinct vegetation communities or land cover types, with urban/developed land occupying the greatest extent within the BSA. The majority of the BSA is made up of paved roadways, man-made structures, unvegetated areas, landscaped areas, and disturbed areas. Figure 3.7-1 depicts the location of the vegetation communities and land cover types within the BSA. Appendix I of this EIR includes a detailed discussion of these vegetation communities and cover types.

Table 3.7-2. Existing Vegetation Communities and Land Cover Types within the Biological Study Area

Vegetation Community or Land Cover Type	Acreage
Urban/developed	108.1
Disturbed habitat	5.7
Total	113.8

Source: Appendix I of this EIR

Botanical Species

Sensitive plants include those listed by the U.S. Fish and Wildlife Service (USFWS) or the CDFW as threatened or endangered, candidates for listing by USFWS or CDFW or those that are considered sensitive by CDFW or the California Native Plant Society.

California Natural Diversity Database record searches indicated 37 special-status plant species with known occurrences within the 9 U.S. Geological Survey 7.5-minute quadrangles including and surrounding the BSA (Appendix I of this EIR). Due to the lack of native, undisturbed habitat within the BSA, none of the 37 special-status plants are expected to occur within the BSA. Further information on these species, including their status, habitat requirements, and an explanation as to why they are not expected to occur within the BSA, is provided in Appendix I of this EIR.

Wildlife Species

Sensitive wildlife species are animal species or subspecies listed as threatened, endangered, or a candidate for listing by USFWS or by CDFW, or considered sensitive by CDFW. A sensitive designation includes those listed as rare or "species of special concern" (SSC) and includes a number of migratory bird species protected under the Migratory Bird Treaty Act (MBTA).

California Natural Diversity Database record searches indicated 33 special-status wildlife species with known occurrences within the 9 7.5-foot quadrangles including and surrounding the BSA (Appendix I of this EIR). Table 3.7-3 shows the two state-designated SSCs (western mastiff bat and western yellow bat) with the potential to occur within the BSA. Further information on the other sensitive wildlife species in the California Natural Diversity Database record search results, including their status, habitat requirements, and an explanation as to why they are not expected to occur within the BSA, is provided in Appendix I of this EIR.

Figure 3.7-1. Vegetation Communities and Land Cover Types within the Biological Study Area

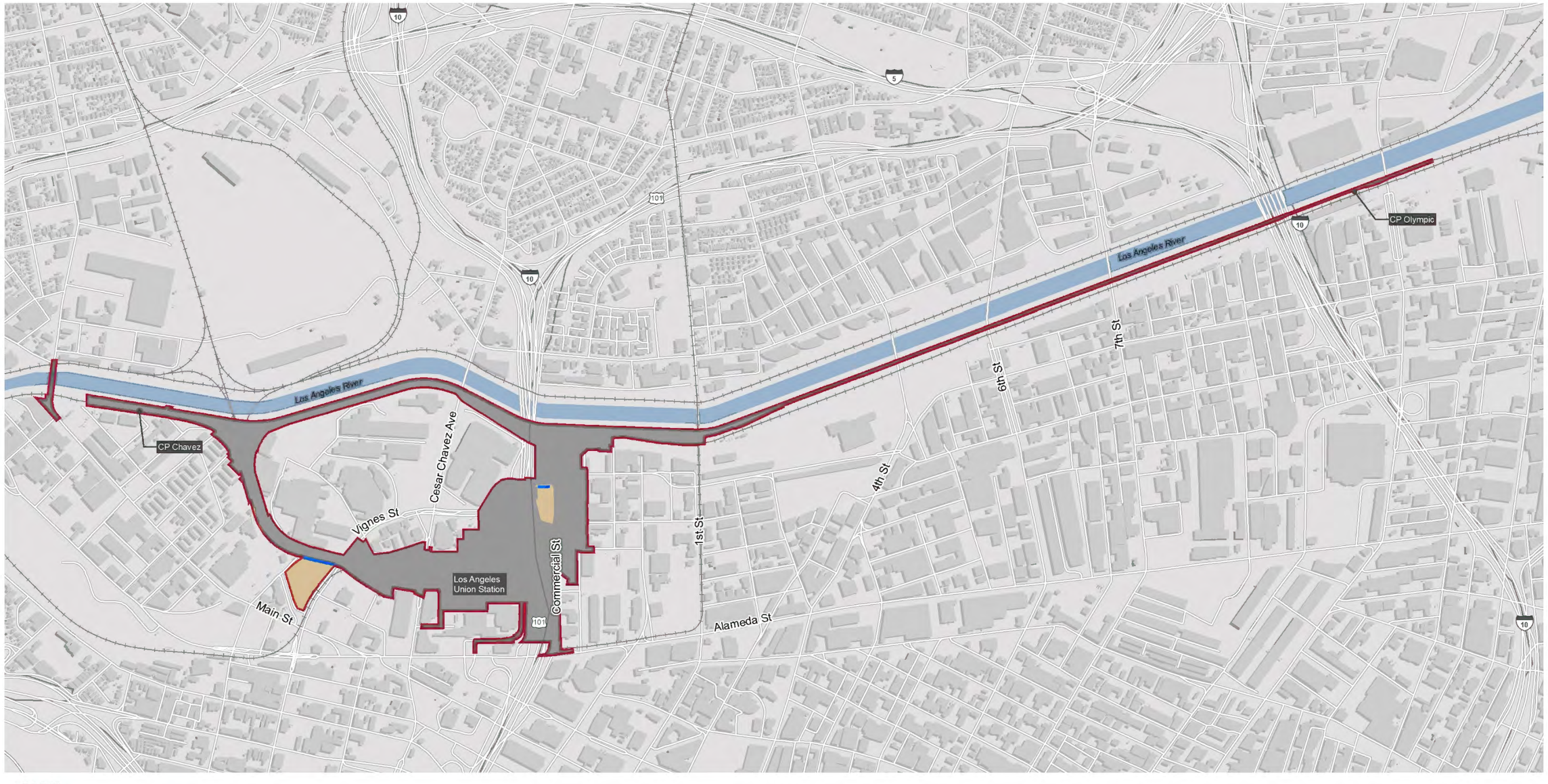

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Table 3.7-3. Sensitive Zoological Species with Potential to Occur within the Biological Study Area

Species	Sensitivity Status	Observed On Site?	Potential for Occurrence
Western mastiff bat (*Eumops perotis californicus*)	SSC	No	Low[1] - May roost in bridges
Western yellow bat (*Lasiurus xanthinus*)	SSC	No	Low[1] – May roost in naturally occurring or planted (ornamental) trees, including palm trees

Source: ***Appendix I of this EIR***
Notes:
[1] Although the potential for maternity roosts to occur within the BSA is considered low, there is still the potential for their occurrence and, therefore, preconstruction surveys would be required (see Mitigation Measure BIO-1)

SSC=species of special concern

Migratory Birds

Migratory birds are protected under the MBTA. Suitable habitat for migratory birds includes mature trees (greater than 24 inches in diameter), utility poles, building rafters and eves, and bridges.

Several migratory bird species were observed in the BSA, including American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Carduelis psaltria*). Suitable habitat that would support breeding, roosting, and foraging migratory birds occurs throughout the BSA.

Jurisdictional Areas

The only area subject to U.S. Army Corps of Engineers (USACE) and CDFW jurisdiction within the BSA is the reach of the Los Angeles River located below the Main Street Bridge. The Los Angeles River is a concrete-lined flood control channel surrounded by urban, commercial, residential, and industrial development. The project would be constructed outside of the channel (i.e., above the Main Street Bridge crossing of the Los Angeles River) and would not modify or otherwise impact the concrete-lined flood control channel in this area or in any other areas associated with construction or operation of the proposed project.

Two ditches are present within the BSA (Figure 3.7-1). The first ditch is located west of the existing railroad tracks in the throat segment, east of a disturbed lot containing trees, shrubs, and non-native vegetation. The second ditch is a 2-foot-wide concrete-lined ditch located along a fenceline on the corner of Commercial Street and Center Street in the run-through segment. This ditch flows into an existing storm drain. These two ditches were constructed in upland and are, therefore, proposed non-jurisdictional.

Based on these findings, no Clean Water Act (CWA) Section 401 or 404 permits or state streambed alteration agreements are required.

Wildlife Dispersal Corridors or Linkages

Wildlife movement corridors, also called dispersal corridors or landscape linkages, are linear features primarily connecting at least two significant habitat areas. Wildlife corridors and linkages may function at various levels depending upon various factors and, as such, the most successful wildlife corridors and linkages would accommodate all or most of the necessary life requirements of predator and prey species.

The BSA occurs within a heavily developed urban area more than 5 miles east and north of any significant open space patches. While there are larger open space patches to the north and east of the project, these areas are separated from the project by I-5 and SR 110. The reach of the Los Angeles River, located below the Main Street Bridge in the project study area, may support some north-south movement for urban-adapted wildlife, but this function would be limited due to the lack of vegetated cover throughout the study area. Arroyo Seco, located approximately 0.8 mile to the north of the project study area, may support some east-west wildlife movements.

Habitat Conservation Plan

The BSA is not located within the boundary of an approved habitat conservation plan, natural community conservation plan, significant ecological area, or other approved local, regional, or state habitat conservation plan. The nearest adopted significant ecological area is Griffith Park, which is located approximately 10 miles northwest of the BSA.

3.7.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts on biological resources would be considered significant if the project would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS

C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

F. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project.

B. *Riparian Habitat or Other Sensitive Natural Communities* - The BSA does not contain riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFW or USFWS. Therefore, there is no potential for direct or indirect impacts on riparian habitat or other sensitive natural communities to occur. No impact would occur.

C. *Federally Protected Wetlands* - The BSA does not contain federally protected wetlands as defined by Section 404 of the CWA. Therefore, there is no potential for direct or indirect impacts on federally protected wetlands to occur. No impact would occur.

F. *Conflicts with Adopted Habitat Conservation Plan or Natural Community Conservation Plan* - The BSA is not within an established habitat conservation plan, natural community conservation plan, significant ecological area, or other approved local, regional, or state habitat conservation plan. In this context, implementation of the project would not conflict with the provision of any of these types of plans. No impact would occur.

Impact Analysis

THRESHOLD 3.7-A	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS

Direct and Indirect Impacts – Construction

Special-Status Bats

As shown in Table 3.7-3, two special-status wildlife species were identified as having the potential to occur within the BSA. These state-designated SSCs include western mastiff bat and western yellow bat.

Removal of naturally occurring or ornamental (planted) trees, including palms, as part of project construction may result in direct impacts on special-status wildlife species that may use these areas to roost, if present in the BSA. Track work and bridge modifications at Vignes Street and Cesar Chavez Avenue may also result in potential direct and indirect construction-related impacts in the full build-out condition. The Vignes Street and Cesar Chavez Avenue bridge falsework and construction work areas would be situated to avoid flight paths of special-status bat species, if present, to minimize potential construction-related impacts, including abandonment of roost sites. Safety improvements at the Main

Street Bridge crossing of the Los Angeles River would not be conducted on the underside of the bridge where bats could be roosting; however, improvements at this location could result in indirect impacts on special-status bats and maternity colonies. Specific impacts on special-status bat species are described below.

No western mastiff bats or western yellow bats were observed within the BSA during the general biological survey; however, surveys were conducted during the daytime when bats are typically roosting and more difficult to observe. In addition, given the presence of suitable habitat and the amount of time that would elapse before actual construction of the project commences, it is possible that western mastiff bat or western yellow bat roosting and maternity sites could be located within or adjacent to the BSA. If construction occurs during the bat maternity season (May 1 through August 31), there is a potential for direct impacts (e.g., maternity site abandonment) and indirect impacts (e.g., noise, vibration, dust, night lighting, and human encroachment) to occur on western mastiff bats as a result of construction activities in the vicinity of bridges and on western yellow bats as a result of removal of naturally occurring or planted (ornamental) trees, including palm trees. This is considered a significant impact. Mitigation Measure BIO-1 (described in Section 3.7.6) is proposed to reduce impacts to a level less than significant.

Migratory Birds

Several migratory bird species were observed in the BSA, and suitable habitat that would support breeding migratory birds is present in the BSA. Construction of the track, bridge improvements at Vignes Street and Cesar Chavez Avenue, safety improvements at the Main Street Bridge crossing of the Los Angeles River, and other construction activities may interfere with MBTA-covered species during the nesting season. Impacts on MBTA-covered species during the nesting season are considered a significant impact. Mitigation Measure BIO-2 (described in Section 3.7.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Special-Status Bats

After construction is complete and the project is operational, the project would involve increased train traffic and periodic maintenance of Metro's ROW. Based on the limited availability of suitable habitat for special-status bat species in the BSA, the corresponding impacts of operations on each species (i.e., increased risk of being struck by a train) are not anticipated to substantially reduce the regional population size of these species. Impacts are considered less than significant.

Migratory Birds

As a result of the urban nature of the project site, any birds utilizing the site for breeding during project operations are expected to be urban-adapted. Therefore, the corresponding impacts of operations on these species (e.g., increased risk of being struck by a train) are not anticipated to substantially reduce their regional population sizes. Impacts are considered less than significant.

Indirect Impacts - Operations

Special-Status Bats

After construction is complete and the project is operational, the project would involve increased train traffic and periodic maintenance in the railroad ROW. Based on the limited availability of suitable habitat for special-status bat species in the project area, the corresponding impacts of operations on each species (i.e., increased risk of a maternity roost being disturbed by maintenance activities or vibration, noise and dust resulting from increased train traffic) are not anticipated to substantially reduce the regional population size of these species. Impacts are considered less than significant.

Migratory Birds

Temporary, indirect impacts that may affect MBTA-covered species during operations include increased noise, vibration, dust, night lighting, and human encroachment. However, as a result of the urban nature of the project site, any birds utilizing the site for breeding during project operations are expected to be urban-adapted. The corresponding impacts of operations on these species (e.g., increased risk of being struck by a train) are not anticipated to substantially reduce their regional population sizes. Impacts are considered less than significant.

THRESHOLD 3.7-D	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites

Direct Impacts – Construction

As indicated in Section 3.7.4, the BSA occurs within a heavily developed urban area more than 5 miles east and north of any significant open space patches. Any larger open space patches to the north and east of the project are separated from the project by highways. The reach of the Los Angeles River located below the Main Street Bridge in the project study area may support some north-south movement for urban-adapted wildlife, but this function would be limited due to the lack of vegetated cover throughout the study area. Arroyo Seco, located approximately 0.8 mile to the north of the project study area, may support some east-west wildlife movements.

Project construction would not obstruct local north-south wildlife movement that may be occurring via the Los Angeles River, or local east-west movements that may be occurring via the Arroyo Seco. Impacts are considered less than significant.

Indirect Impacts

Project construction is over 0.8 mile away from Arroyo Seco; therefore, it is not expected to impact any potential wildlife movement occurring there. Noise and light from project construction could inhibit what limited wildlife movement occurs in the Los Angeles River. Given the unvegetated, concrete-lined nature of the river and the urban nature of the surroundings, any wildlife utilizing the river is expected to be urban-adapted. The corresponding indirect impacts on these species from construction are not

anticipated to substantially reduce their regional population sizes or interfere substantially with their movement. Impacts are considered less than significant.

Direct Impacts – Operations

Once operational, the project would involve increased train traffic and periodic maintenance of Metro's ROW. As indicated above, the project design does not obstruct local north-south wildlife movement that may be occurring via the Los Angeles River, or local east-west movements that may be occurring via the Arroyo Seco. Impacts are considered less than significant.

Indirect Impacts

The project is over 0.8 mile away from Arroyo Seco; therefore, operation of the proposed project is not expected to impact any wildlife movement occurring there. Additional noise and light from project operations could inhibit what limited wildlife movement occurs in the Los Angeles River. Given the unvegetated, concrete-lined nature of the river and the urban nature of the surroundings, any wildlife utilizing the river is expected to be urban-adapted. The corresponding indirect impacts on these species from operations are not anticipated to substantially reduce their regional population sizes or interfere substantially with their movement. Impacts are considered less than significant.

THRESHOLD 3.7-E	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Direct Impacts – Construction

The project may require the removal or disturbance of one or more native tree species (western sycamore or other species observed during reconnaissance surveys) that are considered a Protected Tree under the City of Los Angeles Tree Ordinance. Removal of protected trees would conflict with local ordinances and policies protecting biological resources. This is considered a significant impact. Mitigation Measure BIO-3 (described in Section 3.7.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once constructed, the project would not require the removal of additional trees. However, future maintenance activities would be required throughout the duration of operation, and limited pruning or vegetation clearing would be required to keep the railroad corridor free of debris. Vegetation maintenance activities would be limited to the railroad ROW and would not extend into adjacent sensitive habitats. Impacts are considered less than significant.

Indirect Impacts

The project could result in indirect impacts affecting the root systems of adjacent native trees. Trenching, grading, soil compaction, and the placement of fill or impervious surfaces within the driplines of protected trees could lead to root damage ultimately resulting in death of the tree. This is considered a

significant impact. Mitigation Measure BIO-3 (described in Section 3.7.6) is proposed to reduce this impact to a level less than significant.

3.7.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to biological resources to a level less than significant.

BIO-1 Bats: Preconstruction surveys for roosting special-status bats (including western mastiff bats and western yellow bats) and other native bat species shall be conducted by a Metro-approved qualified bat biologist within 2 weeks prior to construction. Surveys shall be conducted where suitable habitat and/or bridge structures that will be removed or have modifications to the substructure are present. All locations with suitable roosting habitat (including potential maternity roosts) shall be surveyed using an appropriate combination of structure inspection, exit counts, acoustic surveys, or other suitable methods. Surveys shall be conducted during the appropriate season and time of day/night to ensure detection of day- and night-roosting bats (i.e., preferably one daytime and one nighttime survey shall be conducted at each location with suitable roosting habitat during the maternity season, May 1 through August 31). If no roosts are detected, trees that provide suitable roosting habitat may be removed under the guidance of the qualified bat biologist.

If a roost is detected, passive exclusion shall include monitoring the roost for 3 days to determine if the roost is active. If the roost is determined to support a reproductive female with young, the roost shall be avoided until it is no longer active. If the roost remains active during the 3 monitoring days and observations confirm it is not a maternity colony, a temporary bat exclusion device shall be installed under the supervision of a Metro-approved qualified bat biologist. At the discretion of the biologist, based on his or her expertise, an alternative roosting structure(s) may be constructed and installed prior to the installation of exclusion devices. Exclusion shall be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or torpid (overwintering) individuals during the winter. If it cannot be determined whether an active roost site supports a maternity colony, the roost site shall not be disturbed, and construction within 300 feet shall be postponed or halted until the roost is vacated and the young are volant (able to fly). Exclusion efforts shall be monitored on a weekly basis and continued for the duration of project construction activities and removed when no longer necessary.

The following avoidance and minimization measures shall be implemented during construction:

- All work conducted on bridges shall occur during the day. If this is not feasible, lighting and noise shall be directed away from night roosting and foraging areas.
- Combustion equipment (such as generators, pumps, and vehicles) shall not be parked or operated under a bridge. Construction personnel shall not be present

directly under a roosting colony. Construction activities shall not severely restrict airspace access to the roosts.

- Removal of mature trees that provide suitable bat roosting habitat shall be conducted outside of the maternity season (May 1 through August 31); that is, removal shall be conducted between September 1 and April 30. Because bats may be present in a torpid state during the winter, suitable roosting habitat shall be removed before the onset of cold weather (approximately November 1) or as determined by a qualified bat biologist).
- When removing palm trees, the dead fronds shall be removed first before felling the palm to allow any bats to escape.

BIO–2 MBTA Species: Vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a Metro-approved qualified bird biologist shall conduct preconstruction surveys to locate active nests within 7 days prior to vegetation removal in each area with suitable nesting habitat. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be reduced based on species-specific and site-specific conditions as determined by the qualified biologist. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active.

Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at the bridges that will be removed or that will have modifications to the substructure before the nesting season (February 1 through September 30) to prevent nesting at the bridges by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA.

In addition, if work on existing bridges with potential nest sites that will be removed or will have modifications to the substructure is to be conducted between February 1 and September 30, all bird nests shall be removed prior to February 1. Immediately prior to nest removal, a qualified biologist shall inspect each nest for the presence of torpid bats, which are known to use old swallow nests. Nest removal shall be conducted under the guidance and observation of a qualified biologist. Removal of swallow nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion unless a nest exclusion device has already been installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be

continued to keep the structures free of swallows until October or the completion of construction.

BIO-3 Protected Trees: Preconstruction surveys for protected trees (native trees 4 inches or more in cumulative diameter, as measured at 4.5 feet above the ground level, that are subject to protection under Ordinance No. 177404, Preservation of Protected Trees of the City of Los Angeles' municipal code, including oaks, southern California black walnut, western sycamore, and California bay), shall be conducted by a registered consulting arborist with the American Society of Consulting Arborists at least 120 days prior to construction. The locations and sizes of all protected trees shall be identified prior to construction and overlaid on project footprint maps to determine which trees may be protected in accordance with Ordinance No. 177404. The registered consulting arborist shall prepare a Protected Tree Report and shall submit three copies to the City of Los Angeles Department of Public Works. Any protected trees that must be removed due to project construction shall be replaced at a 2:1 ratio (or up to a 4:1 ratio for protected trees on private property) except when the protected tree is relocated on the same property, the City of Los Angeles has approved the tree for removal, and the relocation is economically reasonable and favorable to the survival of the tree. Each replacement tree shall be at least a 15-gallon specimen, measuring 1 inch or more in diameter, 1 foot above the base, and shall be at least 7 feet in height measured from the base.

3.7.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measures BIO-1 through BIO-3, significant impacts related to biological resource would be reduced to a level less than significant.

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3.8 Hydrology and Water Quality

3.8.1 Introduction

This section provides an evaluation of the proposed project in relation to existing floodplains, hydrology, and water quality conditions within the project study area. Information contained in this section is summarized from the following reports:

- *Link US Water Quality Assessment Report* (WQAR) (Appendix J of this EIR)
- *Link US Preliminary Low Impact Development* (LID) *Report* (Appendix K of this EIR)
- *Link US Preliminary Geotechnical Report* (Appendix L of this EIR)
- *Link US Concourse and Platform Waterproofing Analysis Technical Memo* (HDR 2016f)

3.8.2 Regulatory Framework

Table 3.8-1 identifies and summarizes applicable laws, regulations, and plans relative to hydrology and water quality.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
Federal	
FEMA	FEMA administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues FIRMs that identify which land areas are subject to flooding and flood hazard zones in the community. The design standard for flood protection covered by the FIRMs is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 (0.01) annual exceedance probability (i.e., the 100-year flood event).

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
CWA	The CWA of 1972 is the primary federal law that governs and authorizes the U.S. EPA and the states to implement activities to control water quality. The following are important CWA sections: • Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines. • Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below). • Section 402 establishes the NPDES, a permitting system to control point source discharges from industrial, municipal, and other facilities if their discharges go directly to surface waters (except for dredge or fill material). RWQCB administers this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and MS4s. • Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the USACE.
Federal Anti-degradation Policy	The Federal Anti-degradation Policy, established in 1968, is designed to protect existing uses, water quality, and national water resources.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
State	
Porter-Cologne Water Quality Control Act (California Water Code)	The California Water Code is California's statutory authority for the protection of water quality. Under this act, the state must adopt water quality policies, plans, and objectives that protect the state's waters. Unlike the CWA, which regulates only surface water, the Porter-Cologne Water Quality Control Act regulates surface water, groundwater, and discharges to land.
Water Quality Control Plan, Los Angeles Region (Basin Plan)	The Water Quality Control Plan for the Los Angeles Region (Basin Plan) prepared by the Los Angeles RWQCB (Region 4) outlines the regulatory process for the protection of the beneficial uses of all regional waters. According to the Basin Plan, the beneficial uses established for the Los Angeles Region include municipal, agricultural, industrial, groundwater recharge, freshwater replenishment, navigation, hydropower, water recreation, fishing, aquaculture, freshwater habitat, saline water habitat, estuarine habitat, wetland habitat, marine habitat, wildlife habitat, preservation of biological habitats, rare, threatened, or endangered species, aquatic organisms, spawning reproduction, and/or early development, and shellfish harvesting.
California Toxics Rule	Under the California Toxics Rule, the U.S. EPA has proposed water quality criteria for priority toxic pollutants for inland surface waters, enclosed bays, and estuaries. These federally promulgated criteria create water quality standards for California waters and satisfy CWA requirements.
Caltrans MS4 Permit	Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater." SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all respective ROWs, properties, facilities, and activities in the state. SWRCB or the RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted. Caltrans' MS4 Permit (Order No. 2012-0011-DWQ) was adopted September 19, 2012, and became effective July 1, 2013, as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014), and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015).
NPDES IGP	The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ IGP implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the U.S. The IGP regulates discharges associated with 10 federally defined categories of industrial activities. The IGP requires the implementation of BMPs, a site-specific SWPPP, and monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to stormwater and no discharges to waters of the U.S.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
NPDES CGP	The CGP (Order No. 2009-009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Orders No. 2010-0004-DWQ and 2012-0006-DWQ, which are currently in effect. The permit regulates stormwater discharges from construction sites that result in a disturbed soil area of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop SWPPP; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.
Small MS4 Phase II Permit	MS4 permits were issued in two phases: • Under Phase I, which started in 1990, the RWQCBs adopted NPDES stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 or more people) municipalities. The City of Los Angeles, along with other cities in Los Angeles County, has been issued a Phase I MS4 permit as a group. • On April 30, 2003, as part of Phase II, the SWRCB issued a General Permit for the Discharge of Stormwater from Small MS4s (Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities (population less than 100,000), including non-traditional Small MS4s, which are facilities such as military bases, public campuses, prisons, and hospital complexes. The Phase II Small MS4 General Permit covers Phase II Permittees statewide. On February 5, 2013, the current Phase II Small MS4 General Permit (Order No. 2013-0001-DWQ) was adopted and became effective July 1, 2013. One of the non-traditional Small MS4 categories included in the permit are local transportation planning agencies, such as Amtrak, Bay Area Rapid Transit, CalTrain, Golden Gate Bridge (Highway and Transportation District), MTS, North County Transit District, and Valley Transportation Authority. These categories and agencies are reflected in Attachment B of the permit. Metro was not included in the permit as a non-traditional Small MS4; however, CHSRA was designated on August 22, 2014, as being included under the Phase II Small MS4 General Permit. The addition of CHSRA will be reflected in an updated copy of Attachment B to the permit which will be posted by the SWRCB. The CHSRA is currently preparing the guidance documents that specify the stormwater runoff controls to reduce the discharge of pollutants and the post-construction stormwater standards. There is no time line when these guidance documents will be available for public use. It is assumed that CHSRA will be on dedicated tracks south of LAUS, and this portion of the project will be under the jurisdiction of the Phase II permit. For purposes of compliance with stormwater quality requirements, the CHSRA tracks will be designed to comply with local MS4 requirements as it is assumed that local requirements are more stringent than Phase II MS4 requirements.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
Local	
SCRRA Design Criteria Manual	SCRRA has established engineering criteria for track and bridges under its jurisdiction, which requires that culverts conveying cross-track flood flows be designed to freely pass low flows and accommodate high-water conditions. New and replacement bridge and culvert openings will be sized for two high-water design discharge events, designated low chord/soffit event and subgrade event. If insufficient channel area exists to meet SCRRA's criteria, even with maximum widening, consideration will be given to adding relief structures on the overbank floodplain, raising the SCRRA grade, or other reasonable alternatives.
WQCMPUR	In 2009, the City of Los Angeles adopted the WQCMPUR, a 20-year strategy for clean stormwater and urban runoff. The WQCMPUR was developed by Los Angeles Bureau of Sanitation and Watershed Protection Division to develop a water quality master plan with strategic directions for planning, budgeting, and funding to reduce pollution from urban runoff in the City. The WQCMPUR seeks a broad watershed-based perspective to improve water quality and bring the City into compliance with the CWA.
Municipal NPDES Permit	The City of Los Angeles is a permittee under the Phase I NPDES Permit and Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, except those discharges originating from the City of Long Beach MS4, Order No. R4-2012-0175 (NPDES No. CAS004001). The NPDES permit prohibits discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards. Under the NPDES permit, the City as a permittee is responsible for the management of storm drain systems within its jurisdiction. Cities are required to implement management programs, monitoring programs, implementation plans, and all BMPs outlined in the MSWMP and to take any other actions as may be necessary to protect water quality to the MEP. In addition, each city is required to implement a MSWMP and develop a long-term assessment strategy for effectiveness of the MSWMP. On December 13, 2001, the Los Angeles RWQCB adopted Order No. 01-182, the NPDES Stormwater Permit for Los Angeles County and cities within (NPDES No. CAS004001). The permit was issued to Los Angeles County (Principal Permittee) and 84 cities (Permittees) to reduce pollutants discharged from their MS4 to the MEP statutory standard. The permit became effective September 2, 2002.
City of Los Angeles Stormwater LID Ordinance (Ordinance #181899)	In November 2011, the City adopted the Stormwater LID Ordinance (Ordinance #181899) to amend Los Angeles Municipal Code Sections 64.70.01 and 64.72 and expand on the existing SUSMP requirements by incorporating LID practices and principles and expanding the applicable development categories. The LID Ordinance requires stormwater mitigation for a larger number of development and redevelopment categories than was previously required under SUSMP. All development and redevelopment projects that create, add, or replace 500 square feet or more of impervious area need to comply with the LID Ordinance. If applicable to the LID Ordinance, project applicants would also be required to prepare an LID Plan.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
Updated Stormwater LID Ordinance (Ordinance #183833)	On August 25, 2015, the City adopted an updated Stormwater LID Ordinance (Ordinance #183833) to amend Los Angeles Municipal Code Section 64.70 et seq. and expand on the LID requirements and eliminated the requirement for a SUSMP. Subsequently, on May 9, 2016, the City of Los Angeles, Board of Public Works adopted an update to the LID Manual (formally retitled as *Planning and Land Development Handbook for LID, Part B Planning Activities 5th Edition*, dated May 9, 2016) as authorized by Section 64.72 of the Los Angeles Municipal Code approved by Ordinance #183833. The LID Manual was made publicly available via the City website on October 2016. The updated LID Manual removed the requirement for a SUSMP and a Site Mitigation Plan, and now the required LID document is only the LID Plan.
City of Los Angeles Municipal Code	Stormwater discharge is regulated under Chapter VI Public Works and Property, Article 4.4 – Stormwater and Urban Runoff Pollution Control of the City of Los Angeles Municipal Code. Under Article 4.4, discharge of non-stormwater is permissible only when connection to the storm drain system is made in accordance with a valid city permit, approved construction plan, or a NPDES permit and/or NOI. In addition, projects within the City are required to comply with the requirements of the CGP and the Municipal NPDES Permit, which includes preparation of a SWPPP and implementation of construction and post-construction BMPs.
General Waste Discharge Requirements for Dewatering	On June 6, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Groundwater from Construction and project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES No. CAG994004) (Dewatering Permit). This permit covers discharge of groundwater and non-stormwater construction dewatering discharges in the Los Angeles and Ventura region.
General Waste Discharge Requirements for Dewatering from Contaminated Activities	On March 7, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES No. CAG914001) (Dewatering Permit for Contaminated Activities). This permit covers discharge of groundwater and non-stormwater construction dewatering waste that is contaminated in the Los Angeles and Ventura region.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Hydrology and Water Quality

Law, Regulation, or Plan	Description
City of Los Angeles General Plan	The City of Los Angeles adopts the General Plan during different timeframes depending on the element in question. The General Plan is a dynamic document consisting of several elements, four of which are relevant to this section: Safety Element, Conservation Element, Framework Element, and the Health and Wellness Element. The Safety Element addresses the issue of protection of its people from unreasonable risks associated with natural disasters (e.g., fires, floods, earthquakes). The Conservation Element focused on the protection of natural resources. The Framework Element addresses long-term growth that sets a citywide context to guide the subsequent amendments of the City's community plans, zoning ordinances, and other pertinent programs. The Health and Wellness Element also addresses water quality and provides a high-level policy vision, measurable objectives, and implementation programs to elevate health as a priority for the City's future growth and development.

Notes:
BMP=best management practice; Caltrans=California Department of Transportation; CGP=Construction General Permit; CHSRA=California High Speed Rail Authority; CWA=Clean Water Act; FEMA=Federal Emergency Management Agency; FIRM=Flood Insurance Rate Map; DWQ=Division of Water Quality; IGP=Industrial General Permit; LAUS=Los Angeles Union Station; LID=low impact development; Metro= Los Angeles County Metropolitan Transportation Authority; MEP=maximum extent practicable; MS4=Municipal Separate Storm Sewer System; MSWMP=Municipal Stormwater Management Program; MTS=Metropolitan Transit System; NFIP=National Flood Insurance Program; No.= Number; NOI=Notice of Intent; NPDES=National Pollutant Discharge Elimination System; ROW=right-of-way; RWQCB=Regional Water Quality Control Board; SCRRA=Southern California Regional Rail Authority; SUSMP=Standard Urban Stormwater Mitigation Plan; SWPPP=Stormwater Pollution Prevention Plan; SWRCB=State Water Resources Control Board; U.S.=United States; U.S. EPA=United States Environmental Protection Agency; USACE=U.S. Army Corps of Engineers; VOC=volatile organic compound; WQCMPUR=Water Quality Compliance Master Plan for Urban Runoff

3.8.3 Methods for Evaluating Environmental Impacts

This section summarizes the results of the Link US WQAR, the Link US Preliminary LID Report, and other drainage studies prepared for the project. These studies provide an evaluation of potential impacts on existing drainage systems for each of the jurisdictions affected as a result of the project, including Caltrans and the City. Preconstruction and post-construction drainage conditions were modeled, and stormwater management BMPs were identified to avoid or minimize impacts on hydrology and water quality. This section also evaluates the adequacy of the existing drainage flow patterns to determine whether the proposed drainage facilities meet the applicable design requirements. The physical area for other anticipated drainage system improvements to support the planned HSR system is also considered as part of this analysis. The procedures and practices that would be applied to reduce potential for impacts on drainage systems and stormwater management were also considered as part of the evaluation.

3.8.4 Existing Conditions

Regional Hydrology

This project study area lies within the Los Angeles River watershed. The eastern portion spans from the Santa Monica Mountains to the Simi Hills and, in the west, from the Santa Susana Mountains to the San Gabriel Mountains. The watershed encompasses and is shaped by the path of the Los Angeles River, which flows from its headwaters in the mountains, eastward to the northern corner of Griffith Park. Here the channel turns southward through the Glendale Narrows before it flows across the coastal plain and into San Pedro Bay, near Long Beach. The Los Angeles River has evolved from an uncontrolled, meandering river providing a valuable source of water for early inhabitants to a major flood protection waterway. The Los Angeles River watershed covers over 834 square miles.

Based on the Basin Plan, the Los Angeles River watershed is divided into hydrologic subareas (HSA) that are subdivided into hydrologic areas, all within a specific hydrologic unit (HU). The project is located entirely within the Central HSA Split (405.15) of the Coastal Plain hydrologic area (405.10) of the Los Angeles-San Gabriel HU (405.00) (Appendix J of this EIR).

Local Hydrology

The Los Angeles River is located immediately east of the project study area. The river is the primary drainage facility in the area and facilitates alluvial groundwater recharge through spreading basin turnouts. The portion of the Los Angeles River adjacent to the project study area is entirely concrete lined. This portion of the river is designated as Reach 2 in the Basin Plan (from Figueroa Street, City of Los Angeles [upstream] to Carson Street, City of Long Beach [downstream]) and as Reach 3 in the Los Angeles River Master Plan (from Arroyo Seco [upstream] to Washington Boulevard [downstream]). From this point forward, references will be made to Reach 2, unless noted otherwise. Runoff from the project study area is discharged to various storm drain systems, some of which cross portions of the project, and eventually to Reach 2 of the Los Angeles River.

Precipitation and Climate

Local climate conditions are characterized by warm summers, mild winters, infrequent rainfall, moderate humidity, and moderate breezes during the daytime. Periods of hot weather, winter storms, and Santa Ana winds occasionally disrupt the mild climate. Precipitation generally occurs as rainfall during the major storms with snowfall occurring at higher elevations. The average annual rainfall is 15.5 inches.

Surface Streams

The Los Angeles River is highly modified with concrete lining the majority of its length. Along the middle section of the river, it is unlined and supports a natural habitat for fish and other wildlife species; however, the majority of the river is a concrete channel that carries urban runoff, tertiary-treated effluent from several municipal wastewater treatment plants, and illegal dumping. This activity contributes to the impaired water quality in the Los Angeles River and its tributaries.

Drainage and Flood Control Improvements

Exhibit G of the City of Los Angeles General Plan identifies the project study area to be located within a dam inundation area. Drainage and flood control structures and improvements within the project study area are under the jurisdiction of the following entities: City of Los Angeles Department of Public Works, Los Angeles Bureau of Engineering (LABOE); Caltrans; and SCRRA. Facilities within the project study area, under the jurisdiction of Los Angeles County in Segment 1 (throat segment) of the project study area at Bolero Lane and Leroy Street near Mission Tower, are proposed to be protected in place and are not anticipated to be impacted as part of the project.

Floodplains

Floodplains for the project study area are shown on Panel 060137-0075D of the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Map (FIRM) (FEMA n.d.). This panel was revised in July 1998 and shows that the 100-year flood boundary does not extend over the west bank of the river in the project study area. The entire project footprint is located in Zone X, Areas of Minimal Flooding.

Municipal Supply

The regional potable water supply is delivered by LADWP. The supply is comprised of a mixture of local groundwater resources, recycled water from local water reclamation facilities, and imported water. Approximately half of the water demand is met through the importation of water.

Groundwater Hydrology

The Coastal Plain of Los Angeles (Central) (Basin Number 4-11.04 of the South Coast Hydrologic Region) is the major groundwater basin located in the project study area. The general quality of groundwater in the project study area has been degraded due to land use and contaminants that seep into the subsurface. Commercial and industrial activities include leaking aboveground and underground storage tanks containing various and large quantities of hazardous materials discharging these contaminants and presenting themselves as inorganic and organic pollutants. Inadequate storage, handling, and disposal practices also contribute to the pollution. Pesticides and fertilizers also degrade groundwater quality. In addition, overloaded or improperly treated septic tanks and illegal discharges are also sources of bacteria and pollutants.

Based on the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR), the groundwater levels within the project study area range between depths of approximately 14 and 48 feet below ground surface (bgs) (corresponding groundwater table elevations range from about 222 to 256 feet mean sea level [MSL]). Historical groundwater depths as shallow as 13.5 feet bgs are reported, but more recent measurements indicated a steady groundwater level decline. The groundwater quality within the project study area is not specifically known, but the groundwater may contain inorganic constituents, as well as organic contaminants from solvent and petroleum hydrocarbon pollution associated with industrial activities in the area (Appendix L of this EIR). Developers of underground facilities, as well as temporary excavations during construction, should anticipate encountering groundwater, if greater than approximately 20 feet bgs. See

the *Link US Phase I Environmental Site Assessment* (Phase I ESA) (Appendix M of this EIR) regarding potential groundwater contamination.

Water Quality Objectives/Standards and Beneficial Uses

Surface Water Quality Objectives/Standards and Beneficial Uses

Beneficial uses of water are defined in the Water Quality Control Plan for the Los Angeles River Basin, Region 4 (Basin Plan) as those uses necessary for the survival or well-being of humans, plants, and wildlife. Per the Basin Plan, the surface water beneficial uses for Reach 2 of the Los Angeles River, where the project is located, are as follows:

- MUN – Municipal
- GWR – Groundwater Recharge
- IND – Industrial Service Supply
- REC-1 – Water Contact Recreation
- REC-2 – Non-Contact Water Recreation
- WARM – Warm Freshwater Habitat
- WILD – Wildlife Habitat
- WET – Wetland Habitat

Water quality objectives, as defined by the California Water Code Section 13050(h), are the "limits or levels of water quality constituents or characteristics, which are established for the reasonable protection of beneficial uses or the prevention of nuisance within a specific area." The stipulated surface water quality objectives for inland surface waters which include streams, rivers, lakes, and wetlands, as identified in the Basin Plan, are listed in Table 3.8-2, along with the numeric and narrative water quality objectives for the Los Angeles River.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
Ammonia, un-ionized	Discharges for 4-day average concentration will not exceed 0.035 mg/L; 1-hour average concentration will not exceed 0.233 mg/L.
Bacteria, Coliform	In waters designated for REC-2 and not designated for REC-1, the fecal coliform concentration will not exceed a log mean of 2,000/100 ml (based on a minimum of no less than four samples for any 30-day period), nor will more than 10 percent of samples collected during any 30-day period exceed 4,000/100 ml.
Bioaccumulation	Toxic pollutants will not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
Biochemical oxygen demand	Waters will be free of substances that result in increases in the biochemical oxygen demand that adversely affect beneficial uses.
Biostimulatory substances	Waters will not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
Chloride	Chloride will not exceed 190 mg/L.
Chlorine (residual)	Chlorine residual in wastewater discharged to inland surface waters will not exceed 0.1 mg/L.
Color	Waters will be free of coloration that causes nuisance or adversely impacts beneficial uses.
Exotic vegetation	Exotic vegetation will not be introduced around stream courses to the extent that such growth causes nuisance or adversely impacts beneficial uses.
Floatables	Waste discharges will not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Fluoride	Surface waters designated as MUN will not exceed 2 mg/L as a result of controllable water quality factors, depending on air temperature.
Methylene blue activated substances	Waters designated as MUN will not exceed 0.05 mg/L as a result of controllable water quality factors.
Nitrogen (Nitrate, Nitrite)	Waters will not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Oil and grease	Waters will not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or objects in the water, or that cause nuisance or otherwise adversely impact beneficial uses.
Oxygen (dissolved)	At a minimum, the mean annual dissolved oxygen concentration of all waters will be greater than 7 mg/L, and no single determination will be less than 5 mg/L, except when natural conditions cause lesser concentrations. The dissolved oxygen content of all surface waters designated as WARM will not be depressed below 5 mg/L as a result of waste discharges.
Pesticides	No individual pesticide or combination of pesticides will be present in concentrations that adversely affect beneficial uses. There will be no increase in pesticide concentrations found in bottom sediments or aquatic life.
pH	The pH of inland surface waters will not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels will not be changed more than 0.5 units from natural conditions as a result of waste discharge.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
PCBs	The purposeful discharge of PCBs (the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) to waters of the region, or at locations where the waste can subsequently reach waters of the region, is prohibited. Pass-through or uncontrollable discharges to waters of the region, or at locations where the waste can subsequently reach water of the region, are limited to 70 picograms/liter (30-day average) for protection of human health and 14 nanograms/liter and 30 nanograms/liter (daily average) to protect aquatic life in inland fresh waters and estuarine waters, respectively.
Radioactivity	Radioactive materials will not be present in the waters of the region in concentrations that are deleterious to human, plant, or animal life. Waters designated MUN will meet the limits specified in the CCR, Title 22.
Solids (suspended and settleable)	Waters will not contain suspended or settleable material in amounts that cause nuisance or adversely impact beneficial uses as a result of controllable water quality factors.
Sulfate	Sulfates will not exceed 350 mg/L.
Taste and odor	Waters will not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely impact beneficial uses.
Temperature	The natural receiving water temperature of all regional waters will not be altered unless it can be demonstrated to the satisfaction of the regional board that such alteration in temperature does not adversely impact beneficial uses. For waters designated WARM, water temperature will not be altered by more than 5°F above the natural temperature. At no time will these WARM-designated waters be raised above 80°F as a result of waste discharges.
Total dissolved solids	Total dissolved solids will not exceed 1,500 mg/L.
Toxic substances	Toxic substances will not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. The concentrations of contaminants in waters that are existing or potential sources of drinking water will not occur at levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota will not adversely impact beneficial uses.
Turbidity	Waters will be free of changes in turbidity that cause nuisance or adversely impact beneficial uses. Increases in natural turbidity attributable to controllable water quality factors will not exceed the following limits: where natural turbidity is between 0 and 50 nephelometric turbidity units, increases will not exceed 20 percent. Where natural turbidity is greater than 50 nephelometric turbidity units, increases will not exceed 10 percent.

Source: Appendix J of this EIR

Notes:
°F=degrees Fahrenheit; CCR=California Code of Regulations; PCB=polychlorinated biphenyls; pH=potential of hydrogen; mg/L=milligrams per liter; ml=milliliter; MUN=municipal and industrial supply; REC-1=Water Contact Recreation; REC-2= Non-contact Water Recreation; WARM=warm freshwater habitat

Groundwater Quality Objectives/Standards and Beneficial Uses

The following beneficial uses are identified in the Basin Plan for the Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin Number 4-11.04 of the South Coast Hydrologic Region):

- MUN - Municipal
- AGG - Agricultural Supply
- IND - Industrial Service Supply
- PROC - Industrial Process Supply

Groundwater recharge was the only beneficial use identified for groundwater within the project study area. This use is related to the Los Angeles River, between Figueroa Street and the Los Angeles River Estuary (Willow Street), which includes Reaches 1 and 2.

The stipulated water quality objectives for groundwater, as identified in the Basin Plan, are listed in Table 3.8-3. The narrative water quality objectives for the Los Angeles River (as related to US-101) only identified chlorine and polychlorinated biphenyls (PCB) in the Caltrans Water Quality Planning Tool.

Table 3.8-3. Groundwater Quality Objectives

Constituent	Concentrations
Bacteria	In groundwater used for domestic or MUN supply, the concentration of coliform organisms over any 7-day period will be less than 1.1/100 ml.
Boron	Boron will not exceed 1.0 mg/L.
Chemical constituents and radioactivity	Groundwater designated for use as domestic or MUN supply will not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in Title 22. Groundwater will not contain concentrations of chemical constituents in amounts that adversely impact any designated beneficial use.
Chloride	Chloride will not exceed 150 mg/L.
Nitrogen (Nitrate, Nitrite)	Groundwater will not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Sulfate	Sulfates will not exceed 250 mg/L.
Taste and odor	Groundwater will not contain taste or odor-producing substances in concentrations that cause nuisance or adversely impact beneficial uses.
Total dissolved solids	Total dissolved solids will not exceed 700 mg/L.

Source: Appendix J of this EIR
Notes:
ml=milliliter; mg/L=milligrams/liter; MUN=municipal and domestic supply

Existing Water Quality

The Surface Water Ambient Monitoring Program maintains water quality stations along the Los Angeles River. The most recent water quality data collected occurred June 29, 2005. Table 3.8-4 summarizes water quality measurements collected by the Surface Water Ambient Monitoring Program at Site No. 412CE0104 and 412LAR007 of the Los Angeles River (HU Code 18070105) for selected constituents.

Table 3.8-4. Los Angeles River Water Quality - 2005 Results

Analyte	Unit	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~ 0.8 mile below Highway 110 Station Code
Specific Conductivity, Total	microsiemens/centimeter	1323	945
Oxygen, Dissolved, Total	mg/L	21.31	12.5
Temperature	°C	29.81	25.1
Velocity	feet/second	—	0
Salinity, Total	parts per thousand	0.65	0.4
Turbidity, Total	nephelometric turbidity unit	4.7	—
Oxygen, Saturation, Total	percentage	284.2	—
pH	none	9.7	—
Nitrite as N, Dissolved	mg/L	1.42	—
OrthoPhosphate as P, Dissolved	mg/L	0.343	—
Chloride, Dissolved	mg/L	107	—
Hardness as CaCO3, Total	mg/L	332	—
Ammonia as N, Total	mg/L	0.059	—
Nitrogen, Total Kjeldahl	mg/L	2.86	—
Phosphorus as P, Total	mg/L	0.597	—
Nitrate as N, Dissolved	mg/L	2.6	—
Chlorophyll a, Particulate	micrograms/liter	63.7	—

Table 3.8-4. Los Angeles River Water Quality - 2005 Results

Analyte	Unit	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~ 0.8 mile below Highway 110 Station Code
Sulfate, Dissolved	mg/L	226	—

Source: Appendix J of this EIR

Notes:
°C = degree Celsius; pH=potential of hydrogen; mg/L=milligrams per liter

Regional Water Quality

Pollutants from dense clusters of residential, industrial, and other urban activities in the Los Angeles Basin have impaired water quality in the immediate project vicinity. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff), is the high number (in the thousands) of point source industrial, construction, and municipal permits issued north and south of the project study area (Los Angeles River watershed, Watershed Management Initiative, December 2001).

Section 303(d) List of Impaired Waters

Within the Central HSA Split of the Coastal Plain hydrologic area of the Los Angeles-San Gabriel HU, the Los Angeles River is the receiving waterbody that is listed as an impaired waterbody on the 2014/2016 CWA Section 303(d) list and the 2012 CWA Section 303(d) list (according to the Caltrans Water Quality Planning Tool). The reason for the difference in the pollutants of concern (POC) between the two lists is due to the difference of the list approval date. Once the Caltrans Water Quality Planning Tool is updated to reflect the 2014/2016 CWA Section 303(d) list, both POCs should match. A summary of the hydrologic information, Section 303(d) listed water bodies and their associated POCs, total maximum daily load (TMDL), and targeted design constituents are shown in Table 3.8-5.

Table 3.8-5. 2014/2016 and 2012 Clean Water Act Section 303(d) Listed Waterbodies and Pollutants of Concern

Jurisdiction	HU	Hydrologic Area	Hydrologic Sub-Area #	Water Body	POCs
Los Angeles RWQCB[1]	Los Angeles-San Gabriel	Coastal Plain	Central HSA Split	Los Angeles River, Reach[2]	Ammonia[3], Indicator Bacteria[3], Copper[3], Nutrients (Algae)[3], Oil, Trash[3]
Los Angeles RWQCB (Caltrans)[2]	Los Angeles River[4]	Los Angeles[4]	412.104	Los Angeles River, Reach[2]	Ammonia[3], Coliform Bacteria, Cooper[3], Lead[3], Nutrients (Algae)[3], Oil, Trash[3]

Notes:
1 ***2014/2016 Section 303(d) Approved List***
2 ***Caltrans Water Quality Planning Tool (based on 2012 Section 303(d) Approved List)***
3 ***POCs with a U.S. EPA-approved TMDL***
4 ***Based on CalWater Watershed Data***

Caltrans=California Department of Transportation; HSA=hydrologic subarea; HU=hydrologic unit; POC=pollutant of concern; RWQCB=Regional Water Quality Control Board; TMDL=total maximum daily load

A targeted design constituent is a pollutant that has been identified during Caltrans runoff characterization studies to be discharging with a load or concentration that commonly exceeds allowable standards and that is considered treatable by currently available Caltrans-approved treatment BMPs. It is a requirement of the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit to provide treatment of the Caltrans-identified targeted design constituents.

Existing Runoff and Drainage

Within the project study area, six major storm drains have been identified. Drainage in the project study area is managed by Metro (and SCRRA), the City, and Caltrans. Runoff in the area is generated from a combination of hard surfaces, including roadways, buildings, and bridges. A network of underground facilities collect runoff (e.g., curbside catch basins and inlets) and direct the flows to the Los Angeles River. Drainage from LAUS is directed to a 120-inch reinforced concrete pipe (RCP) within Cesar Chavez Avenue,

which subsequently drains into the Los Angeles River. Drainage from the El Monte Busway and US-101 is managed by Caltrans and distributed into two major systems. The first is comprised of a large box structure that extends along Vignes Street, and then easterly along Ducommun Street, before discharging into the Los Angeles River. A second system enters a lift station that enters a 75-inch underground pipe system along Alameda Street and drains southerly and ultimately to the Los Angeles River, between Fourth and Sixth Streets. Runoff along Commercial Street enters a 42-inch RCP system along Ducommun Street and ultimately discharges to the Los Angeles River.

3.8.5 Environmental Impacts

Thresholds of Significance

The proposed project would result in a significant impact under CEQA on floodplains, hydrology, and water quality if they would:

A. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

B. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site

C. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

D. Expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

E. Violate any water quality standards or waste discharge requirements

F. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site

G. Otherwise substantially degrade water quality

H. Place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary map or FIRM or other flood hazard delineation map

I. Place within a 100-year flood hazard area structures which would impede or redirect flood flows

J. Inundation by seiche, tsunami, or mudflow

Thresholds Requiring No Further Evaluation

The following thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the project.

H. *Housing within a 100-year Flood Hazard Area* – The proposed project would not involve construction of residential housing; therefore, it would not place housing within a 100-year flood hazard area as mapped on the most recent FIRMs for the project study area. Under CEQA, no impact would occur.

I. *Place Structures in a 100-year Flood Hazard Area* – The proposed project is not within a 100-year flood hazard area; therefore, its implementation would not involve the construction of structures within the 100-year flood hazard area that would otherwise impede or redirect floods. Under CEQA, no impact would occur.

J. *Inundation by Seiche, Tsunami, or Mudflow* – In recognition of the project's inland location and the lack of proximity to the ocean, a large lake or other body of water, the risk related to exposing people or structures to a tsunami or seiche is negligible. Also, the project is located on relatively flat ground; therefore, the hazard of mudflows adversely impacting the proposed project is very low. Under CEQA, no impact would occur.

Analysis

THRESHOLD 3.8-A	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

Direct Impacts – Construction

Based on the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR), the groundwater levels within the project study area range between depths of approximately 14 to 48 feet bgs. The Los Angeles River is located immediately east of the project study area and is the primary drainage facility in the area consisting of a concrete-lined channel, facilitating alluvial groundwater recharge through spreading basin turnouts.

During construction, it is assumed that groundwater dewatering would be required. These groundwater dewatering activities would be considered temporary and only result in extraction of water from the upper aquifer, which is not currently used for potable uses. Hence, production rates or well levels would not be affected. Impacts are considered less than significant

Direct Impacts – Operations

There are no groundwater recharge facilities in the project study area, and operation of the proposed project would not require groundwater extraction for consumptive use. The project would not substantially deplete

groundwater supplies or substantially interfere with groundwater recharge. Based on the Los Angeles County Department of Public Works Groundwater Well Data website, there are no active drinking water and groundwater extraction wells within 1 mile from the project, but there are several inactive wells within this same distance from the project. Therefore, local ground pumping and water levels would not be substantially affected. Impacts are considered less than significant.

Indirect Impacts

The proposed project would be constructed in accordance with standard engineering practices. Therefore, no indirect impact related to groundwater would occur. Under CEQA, no impact would occur.

THRESHOLD 3.8-B	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site

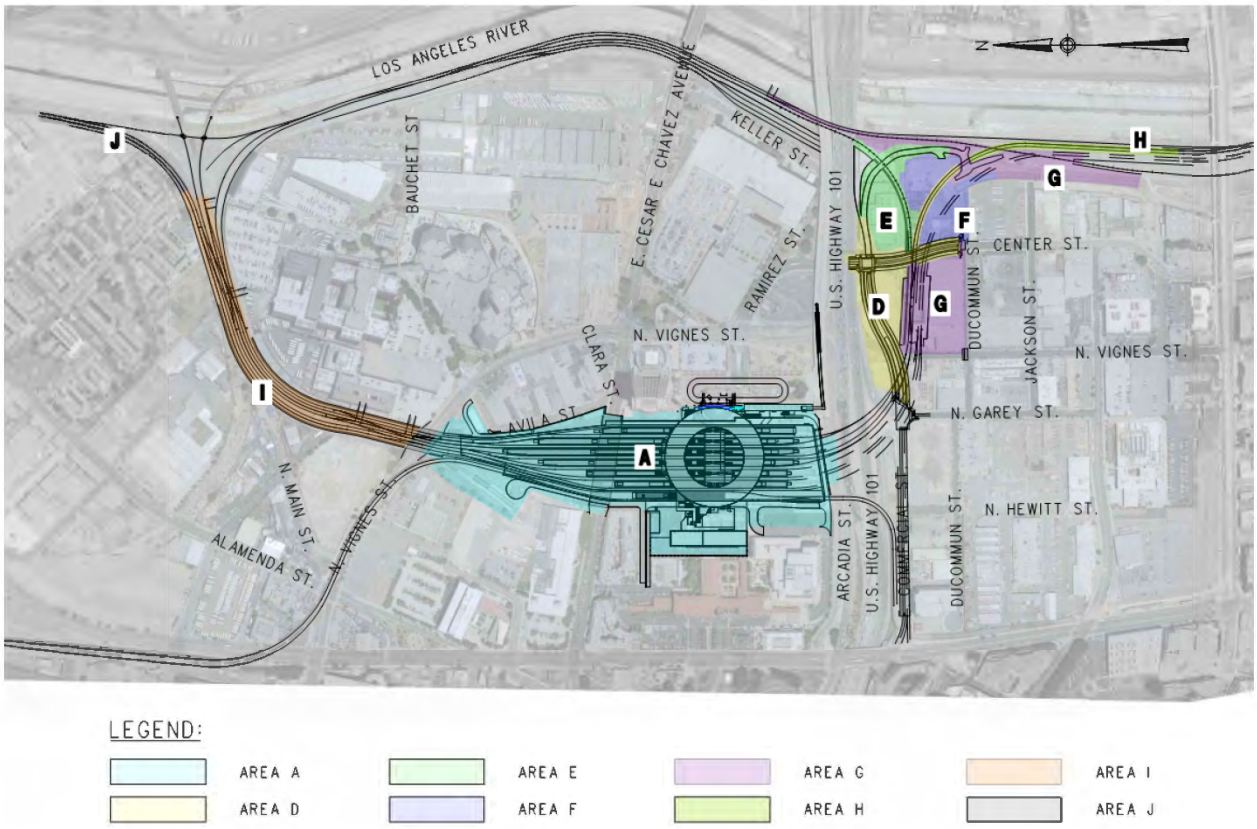
Direct Impacts – Construction

During construction, the proposed project would require substantial amounts of grading and excavation to reconfigure existing drainage patterns and ensure that connections to existing drainage infrastructure are maintained and/or improved. Changes in localized drainage during construction would be most pronounced on site, which includes the railroad ROW, Caltrans ROW, private properties, and City-owned ROW. Extensive grading is anticipated to construct the run-through track infrastructure south of LAUS in Segment 3 in the interim condition, and elevate the rail yard in Segment 2 (concourse segment) in the full build-out condition. Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, if not properly managed. This is considered a significant impact. Mitigation Measure HWQ-1 (described in Section 3.8.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

As discussed in the Link US Preliminary LID Report, the site has eight major drainage areas, which are identified as Areas A, D, E, F, G, H, I, and J, as depicted on Figure 3.8-1.

Figure 3.8-1. Overview of Major Drainage Areas for Post-Construction Conditions



Proposed drainage patterns in each of the tributaries are described below:

Tributary Area A

To maintain the existing drainage pattern and implement a stormwater treatment system, Tributary Area A was divided into eight sub areas to analyze the capture and conveyance of stormwater to the appropriate location for treatment. Specific descriptions of each sub area are provided below. The sub area has two points of connection to the existing municipal storm drain system:

- 108-inch RCP in Cesar Chavez Avenue just east of the Cesar Chavez Bridge
- 138-inch reinforced concrete arch on US-101

Both existing systems ultimately discharge to the Los Angeles River.

Runoff from the rail yard area would drain into a ballasted track bed supported by a cellular concrete slab on-grade. The cellular concrete slab on-grade would slope away from the tracks and direct runoff into the underdrains (8-inch diameter perforated corrugated metal pipes) running adjacent and parallel to the tracks. These underdrains would be connected to a cross drain line (36-inch RCP) that would then connect to a stormwater capture system (cistern) that would treat stormwater for use and detain and attenuate

overflow before conveyance to one of the two existing municipal storm drain systems previously mentioned. All stormwater that is not utilized on site would be discharged to the municipal storm drain system.

Runoff from the rail yard north of the pedestrian passageway (Sub Areas A1, A2, and A4) is tributary to the proposed Garden Track Cistern and would be discharged to the existing municipal storm drain in Cesar Chavez Avenue. The rail yard south of the pedestrian passageway and the West Plaza, the baggage handling building, and adjacent parking areas (Sub Areas A3, A5, A6, and A8) are tributary to the West Plaza cistern and would be discharged to the municipal storm drain in US-101.

- Sub Area A1 – Sub Area A1 primarily encompasses the throat portion of the rail yard and the portion of the rail yard known as the Garden Tracks, both located north of Cesar Chavez Avenue. Precipitation that falls in these two areas would be collected and conveyed to the Garden Track cistern for treatment, located north of Cesar Chavez Avenue. Treated runoff and overflow (matching existing capacities and patterns) would be conveyed to the existing municipal storm drain system in Avila Street, which eventually outlets to the 108-inch City of Los Angeles storm drain pipe in Cesar Chavez Avenue.
- Sub Area A2 - Sub Area A2 encompasses the portion of the rail yard between Cesar Chavez Avenue and the existing pedestrian passageway. Precipitation that falls in this area of the rail yard would be collected and conveyed to the proposed Garden Track cistern for treatment and detention. Treated runoff and overflow (matching existing capacities and patterns) would be conveyed from the cistern to the existing municipal storm drain system in Avila Street, which connects to the 108-inch City of Los Angeles storm drain pipe in Cesar Chavez Avenue, and ultimately discharges to the Los Angeles River.
- Sub Area A3 – Sub Area A3 encompasses the portion of the rail yard between the existing passenger tunnel and the access road along the southern end of the platforms. Precipitation that falls in this area would be collected and conveyed to the proposed West Plaza cistern for treatment and detention. Treated runoff and overflow would be conveyed to the existing 138-inch arch pipe in the US-101, which ultimately discharges to the Los Angeles River.
- Sub Area A4 – Sub Area A4 is primarily made up of the slope to the east of the Garden Track and west of the postal annex building. The area slopes west, away from the LAUS property. Runoff from this area would be collected and conveyed to the proposed Garden Track cistern for treatment and detention. As the design progresses, the method of conveyance to the cistern will need to be further assessed. Overflow and treated runoff would be conveyed to the existing storm drain system in Avila Street, which connects to the 108-inch City of Los Angeles storm drain pipe in Cesar Chavez Avenue, and ultimately discharges to the Los Angeles River.
- Sub Area A5 – Sub Area A5 encompasses the West Plaza, the baggage handling building, adjacent parking, and the proposed loading dock. Precipitation that falls into this area would be collected and conveyed to the proposed West Plaza cistern for treatment and detention. Overflow and treated runoff would be conveyed to the existing 138-inch arch pipe in US-101, which ultimately discharges to the Los Angeles River.

- Sub Area A6 – Sub Area A6 encompasses the slope to the south of the West Plaza, between the MWD building and the access road. Precipitation that falls in this area would be collected and conveyed to the proposed West Plaza cistern for treatment and detention. Overflow and treated runoff is conveyed to the existing 138-inch arch pipe in US-101, which ultimately discharges to the Los Angeles River.
- Sub Area A7 – Sub Area A7 primarily includes the walkway along the west side of Patsaouras Transit Plaza. This area is not tributary to the rail yard, but rather is part of the Patsaouras Transit Plaza drainage system. This area is included in the analysis, as the area is affected by the proposed improvements. As a result of the proposed improvements, the area of Sub Area A7 would be reduced from 1.1 acre in the preconstruction condition, to 0.7 acre in the post-construction condition. The difference of 0.4 acre, which is tributary to Patsaouras Transit Plaza in the preconstruction condition, becomes tributary to the rail yard in the post-construction condition. This reduction in area reduces the total runoff flow and directs it to the treatment system at the West Plaza cistern, effectively improving the drainage condition in the Patsaouras Transit Plaza drainage system.
- Sub Area A8 – Sub Area A8 encompasses a small portion of the viaduct crossing over US-101 and is included to account for the small volume of runoff that is not captured in the catch basins on the viaduct.

Tributary Area D

Area D encompasses the area along Center Street, between Ducommun Street and under US-101, proposed Commercial Street area (realigned), and the areas west of Center Street. Deck drainage from the overhead viaduct would be tied into existing drainage systems. The existing 18-inch vitrified clay storm drain pipe (built in 1909) running along Commercial Street would be connected to a 24-inch/36-inch storm drain pipe running along Center Street. This pipe connects to a 138-inch arch pipe system located within the freeway ROW that runs easterly across the El Monte Busway and US-101, southerly along Vignes Street, then easterly along Ducommun Street, and ultimately discharges to the Los Angeles River. Removal and realignment of a portion of the existing 18-inch vitrified clay storm drain would occur as a result or realigning Commercial Street.

- Sub Area D1 – Sub Area D1 primarily encompasses the proposed realigned Commercial Street, west of the red line tunnel. Due to constraints on running a storm drain pipe across the red line tunnel, the runoff from this area would be routed to the 138-inch arch pipe.
- Sub Area D2 – Sub Area D2 primarily encompasses the slopes south of proposed Commercial Street and north of the proposed run-through tracks. The runoff from the slope would drain to a proposed v-ditch, which drains to an inlet connecting to the storm drain pipe on Center Street. The slopes would be impervious with landscaping.

- Sub Area D3 – Sub Area D3 primarily encompasses Center Street and Commercial Street east of the red line tunnel, and a portion of the proposed Division 20 access road east of Center Street. The runoff from streets would drain to catch basins and inlets on the street, which connect to the storm drain pipe on Center Street.

Tributary Area E

Area E primarily encompasses the area between Aliso Street to the north, Center Street to the west, Ducommun Street to the south, and the Los Angeles River to the east, and includes the loop track and proposed Metro Division 20 access road. A portion of the existing 22-inch vitrified clay storm drain system (in the area where the existing Commercial Street is located), which drains to the Los Angeles River, would be preserved. Track drainage from the loop track would be collected from a track underdrain, which drains to the 22-inch drain system. Runoff within this area would be collected via catch basins draining to the 22-inch storm drain system and ultimately to the Los Angeles River.

- Sub Area E1 – Sub Area E1 primarily encompasses the graded, pervious area north of proposed loop track and south of Metro's Division 20 access road. The runoff from this area drains to the low point where an inlet is proposed and connected to the existing 22-inch pipe on existing Commercial Street.
- Sub Area E2 – Sub Area E2 primarily encompasses the drainage area of loop track and Metro's Division 20 access road. The runoff from this area flows to a trench drain located at the low point of access road and track underdrains, and eventually drains to the existing 22-inch pipe at the location close to the Los Angeles River.

Tributary Area F

Area F encompasses the Division 20 red line portal and parking lot and Metro owned property. Runoff within this area drains to the existing 138-inch arch pipe system, which discharges to the Los Angeles River.

- Sub Area F1 – Sub Area F1 primarily encompasses the Division 20 Red Line portal area.
- Sub Area F2 – Sub Area F2 primarily encompasses the Metro-owned property where hazardous soils are stored. The drainage pattern for this area would remain the same.

Tributary Area G

Area G is primarily composed of the drainage tributary area to the 42-inch RCP system along Ducommun Street. It primarily encompasses the run-through tracks on the embankment structure between Vignes Street and Center Street, the proposed maintenance access road adjacent to the tracks, and slopes at south, as well as the BNSF West Bank Yard and the main line tracks on the west bank of the Los Angeles River.

- Sub Area G1 – Sub Area G1 primarily encompasses the run-through tracks on the embankment structure and proposed maintenance access road. Runoff would drain to a dirt trapezoidal ditch and be collected into inlets, which would drain to a 42-inch RCP system along Ducommun Street and ultimately discharge to the Los Angeles River.

- Sub Area G2 – Sub Area G2 primarily encompasses the slopes south of the run-through tracks and future HSR tracks. The runoff from the slope would drain to a proposed v-ditch, which drains to an inlet ultimately connecting to the 42-inch pipe along Ducommun Street. The slopes would be impervious with landscaping.
- Sub Area G3 – Sub Area G3 primarily encompasses Ducommun Street, between Vignes Street and Center Street. The drainage pattern would remain the same as the existing condition.
- Sub Area G4 – Sub Area G4 primarily encompasses the regional/intercity rail run-through tracks, BNSF tracks, and Amtrak track along the west bank of the Los Angeles River. The runoff would drain to track underdrains connecting to the 42-inch RCP.

Tributary Area H

Area H encompasses the run-through tracks located south of Ducommun Street along the west bank of the Los Angeles River. Track underdrains would collect track runoff that would drain to an existing inlet located at the concrete ditch by the west bank of Los Angeles River.

Tributary Area I

Proposed lead tracks and access roads are located within this area. The majority of the southern portion of the track bed would be supported by a cellular concrete slab on-grade that would be sloped away from the tracks and designed to direct runoff into perforated underdrains located adjacent to the tracks. The proposed storm drain line along the rail access roads would collect the runoff from the underdrains and drain south to the 66-inch RCP at Vignes Street.

Tributary Area J

Area J encompasses the lead tracks for the proposed project, parallel to Bolero Lane, north of Bloom Street. An existing 30-inch RCP collects the runoff from an existing funnel intake and an existing concrete ditch located along Bolero Lane and discharges to the Los Angeles River. Track underdrains collecting track runoff drain to this existing 30-inch RCP.

California Department of Transportation Right-of-Way

Stormwater collected on the common viaduct/deck over US-101 would be collected through a series of inlets in the center of the structure and directed, untreated, to the Caltrans on-site drainage system through one of the structure's columns. It is assumed that only a small amount of stormwater north of the Caltrans ROW would be added to this area.

As discussed above, the proposed project would result in alterations to the existing drainage patterns in the project study area that could result in localized flooding if not properly managed. This is considered a significant impact. Mitigation measures in the form of post-construction BMPs are proposed to reduce potential impacts on water quality. Because Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from the US-101, as well as other portions of the project study area, each agency is anticipated to implement different post-construction BMPs based on applicable regulations, and each

agency would retain partial responsibility for long-term maintenance of BMPs. Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8.6) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

No indirect impact related to alterations in drainage patterns would occur because all project-related infrastructure would be constructed in accordance with standard engineering practices. Therefore, no impact would occur.

THRESHOLD 3.8-C	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

Direct Impacts – Construction

POCs during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction, excavated soil would be exposed, and there would be increased potential for soil erosion. In addition, excavated soils would be contaminated, and the contractor would be required to follow protocol consistent with the Link US Phase I ESA (Appendix M of this EIR), or forthcoming Phase II ESA, for disposition of the soils. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Construction of the safety improvements at the Main Street at-grade public crossing may require some minor grading, excavation, and other site preparation activities. If not properly managed, sediments, petroleum products, and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater into the Los Angeles River. This is considered a significant impact. Mitigation Measure HWQ-1 (described in Section 3.8.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Implementation of the proposed project would not result in an increase in impervious surface within Caltrans ROW. Because the US-101 overhead viaduct is a non-Caltrans structure proposed within Caltrans ROW and would act as a roof to a small portion of the highway, the runoff generated from the non-Caltrans structure would offset the reduced runoff along the highway (impervious surface of the US-101 overhead viaduct is 0.46 acre). Therefore, the runoff associated with the US-101 overhead viaduct would not exceed the capacity of the tributary Caltrans system below (Appendix J of this EIR).

Implementation of the proposed project would increase impervious surfaces outside of Caltrans ROW by 3.5 acres. An overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and exceed the capacity of some on-site drainage systems. This is considered a significant impact. The proposed project includes capture and use BMPs, bioretention BMPs, and structural BMPs that would provide permanent stormwater treatment. Post-construction BMPs incorporated into the design are summarized below:

- In Segment 1: Throat Segment, a structural stormwater vault would address the area north of Vignes Street; a capture and use BMP (cistern) would address the rest of this segment, including a portion of the concourse area (Segment 2: Concourse Segment).
- In Segment 2: Concourse Segment, capture and use BMP (cisterns) are proposed. The extent of BMPs in the concourse area would be refined in final design.
- In Segment 3: Run-Through Segment, south of US-101, bioretention BMPs are proposed for the proposed project and the build alternative. Bioretention BMPs would be applied on reconstructed public streets south of US-101 (i.e, Commercial Street, Center Street, Ducommun Street). City of Los Angeles Green Street Standard Plans may be used and modified with bioretention features and impermeable liners to convey the underdrains to a nearby storm drain system. This approach would require concurrence from the City of Los Angeles. A structural BMP (Contech Jellyfish Filter) would address the area south of Ducommun Street, where the tracks sit on the cellular concrete.

Because Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from the US-101 and other portions of the project study area, each agency is anticipated to implement different post-construction BMPs based on applicable regulations, and each agency would retain partial responsibility for long-term maintenance of BMPs. Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8.6) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

Project-related components would be constructed in accordance with standard engineering practices. Therefore, no indirect impact related to exceeding the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff is anticipated. No impact would occur.

THRESHOLD 3.8-D	Expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

Direct Impacts – Construction

According to Exhibit G of the City of Los Angeles' Safety Element (City of Los Angeles 1996a), the eastern portion of the project study area is located within or adjacent to a potential inundation area. As identified in the Link US WQAR, drainage and flood control structures and improvements within the project study area are under the jurisdiction of the following entities: City of Los Angeles Department of Public Works,

LABOE, Caltrans, and SCRRA. Facilities within the jurisdiction of Los Angeles County are not included as part of the project.

The project study area is also located on land that is protected by levees for the 1 percent (100-year) annual chance flood, Zone X, per FEMA's NFIP. The project study area is not located within a 100-year or 500-year floodplain; therefore, construction activities would not be subject to impacts associated with flooding. Although the proposed project would improve and modify drainage within the project study area to maintain existing drainage flow patterns and accommodate for increased flow volumes, the proposed project would not increase or negatively impact the project study area's vulnerability to levee and dam failure. The proposed project would not increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. Impacts are considered less than significant.

Direct Impacts – Operations

Although the eastern portion of the project study area is located in an inundation zone, the proposed project is not located within a 100-year or 500-year floodplain; therefore, project facilities would not be subject to flooding. Furthermore, the proposed new canopies, platforms, and other project facilities would be designed and constructed in accordance with standard engineering practices to ensure the proposed project would not expose people or structures to a risk of loss, injury, or death involving flooding. The proposed project would result in improvements or modifications to drainage areas within the project study area to maintain similar drainage flow patterns and to accommodate increased flow volumes. According to the drainage analysis, if floodwaters were to overflow the channel system, they would inundate the surrounding lower lying properties and sections of the local roadway system; however, water levels would not reach the elevation of the existing freeway from the 100-year event. NFIP determined the maximum allowable increase in floodplain elevation due to the proposed project is 1 foot. Therefore, the proposed project would not impact any floodplain areas or require the need to update the flood maps, given the project would occur outside the flood zones. In this context, the proposed project would not expose people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. Impacts are considered less than significant.

Indirect Impacts

Project-related components would be constructed in accordance with standard engineering practices. Therefore, no indirect impact would occur. Impacts are considered less than significant.

THRESHOLD 3.8-E AND 3.8-G	E. Violate any water quality standards or waste discharge requirements G. Otherwise substantially degrade water quality

Direct Impacts – Construction

Construction of the various project components, including the safety improvements at the Main Street at-grade public crossing, could result in a significant impact on water quality and exceed water discharge requirements if runoff is not properly managed. Grading activities would involve the operation of heavy equipment and cutting of shallow excavations. Although the project study area is relatively flat, and the potential for soil erosion is considered to be low, stormwater runoff could result in short-term erosion within areas of exposed or stockpiled soils. Furthermore, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase runoff and erosion potential. If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation.

Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials may also expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River. Similarly, tainted soil may be subject to erosion from storm events. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water.

Groundwater may also be encountered during construction, which may be contaminated. If not addressed properly, the extracted groundwater could substantially degrade surface water.

This is considered a significant impact. Mitigation Measures HWQ-1, HWQ-6, and HWQ-7 (described in Section 3.8.6) are proposed to reduce potential impacts to a level less than significant.

Direct Impacts – Operations

During operation, minor amounts of oil and grease would originate from train cars during operation, which could discharge oil, grease, and other chemical pollutants into existing drainage systems. This is considered a significant impact. Post-construction BMPs are required to treat the runoff prior to discharge to the local storm drain system through capture and use, bioretention, and structural BMPs. Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8.6) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

The potential indirect impacts resulting from post-construction runoff is a potential increase in the quantity of water delivered to adjacent or nearby water bodies during storms. Increased impervious surfaces can interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt, concrete, and other compacted surfaces and routed to drainage systems where large volumes of runoff are discharged to the nearest receiving water. This process is referred to as hydromodification and can contribute to streambank scouring and downstream flooding,

which can result in loss of aquatic life and damage to property. Drainage runoff from the proposed project above-ground facilities would enter one of numerous drainage systems. For these reasons, the proposed project could result in on- and off-site discharges that could indirectly impact downstream surface waters by increasing scour and/or sedimentation. This is considered a significant impact if not properly managed. With incorporation of Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8.6), impacts would be reduced to a level less than significant.

Also, during operation, the project would result in acquisition of parcels with current manufacturing and industrial processes permitted by the industrial general permit (IGP). These processes include treating stormwater discharges that include pollutants. This is considered a significant impact if these processes are not continued, because industrial stormwater may not be treated and could negatively impact the storm drain system. Mitigation Measure HWQ-8 (described in Section 3.8.6) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.8-F	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site

Direct Impacts – Construction

According to the Link US WQAR, due to the paucity of unpaved surface soils within the project study area, the erosion potential under natural conditions is low. According to the National Resources Conservation Service soil survey, the soil erodibility factor within the project footprint is approximately 0.32. The estimates are based primarily on a percentage of silt, sand, and organic matter; soil structure; and saturated hydraulic conductivity. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Construction would occur over a multiyear period with multiple phases of construction. Over the course of construction, activities would extend over multiple rainy seasons; however, the construction schedule is anticipated to be phased to minimize the amount of work during the rainy season. During construction, it may be necessary for the contractor to reroute drainage around one or more construction areas, which, in turn, may concentrate runoff and/or direct it off site, thereby resulting in substantial erosion on adjacent properties, if not properly managed. This is considered a significant impact. Construction site BMPs designated for soil stabilization and sediment control including, but not limited to, temporary measures like construction entrances, a move-in/move-out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures are appropriate BMPs required as part of the stormwater pollution prevention plan (SWPPP) to actively control sediments and stormwater discharges from the project during the construction phase, year-round. Mitigation Measure HWQ-1 (described in Section 3.8.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

As identified in the Link US WQAR, the proposed project would result in an increase of impervious surfaces in the project study area by 3.5 acres (non-Caltrans ROW). This could cause a decrease in infiltration and

increase the volume and velocity of runoff during a storm event, which transports pollutants to receiving waters and may lead to downstream erosion and increases in suspended particles and sediment. An increase in suspended particles and sediment would directly increase the turbidity. This is considered a significant impact.

Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8.6) are proposed to reduce impacts to level less than significant.

Indirect Impacts

Project-related components would be constructed in accordance with standard engineering practices. Therefore, no indirect impact related to erosion and sedimentation would occur. No impact would occur.

3.8.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to hydrology and water quality.

HWQ-1 Prepare and Implement a SWPPP: During construction, Caltrans, Metro, and CHSRA shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), as they relate to project construction activities. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during project construction. Caltrans, Metro, and CHSRA shall comply with the Risk Level 1 sampling and reporting requirements of the construction general permit (CGP). A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to State Water Resources Control Board (SWRCB) within 90 days of completion of construction and stabilization of the site.

HWQ-2 Final Water Quality BMP Selection and Maintenance Agreement (Caltrans ROW): Metro shall comply with the provisions of the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), effective July 1, 2013 (known as the Caltrans MS4 permit). This post-construction requirement shall only apply to the US-101 overhead viaduct improvements. Metro shall prepare a stormwater data report for the plans, specifications, and estimate phase that will address post-construction BMPs for the US-101 overhead viaduct in accordance with the Caltrans *Project Planning and Design Guide* (latest edition).

HWQ-3 Final Water Quality BMP Selection and Maintenance Agreement (CHSRA ROW): For the portion of the project outside Caltrans ROW that accommodates the planned HSR system, Metro shall comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), effective July 1, 2013 (known as the Phase II permit). This post-construction requirement only applies to CHSRA facilities.

HWQ-4 Final Water Quality BMP Selection and Maintenance Agreement (Non-Caltrans/Non CHSRA): Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order No. 2012-0175, NPDES No. CAS004001), effective December 28, 2012 (known as the Phase I Permit). This post-construction requirement shall apply to the entire project except for those portions under the jurisdiction of the Caltrans MS4 Permit and CHSRA's Phase II Permit. Metro shall prepare a final LID report in accordance with the City of Los Angeles *Planning and Land Development Handbook for Low Impact Development* (LID Manual), May 9, 2016. This document shall identify the required BMPs to be in place prior to project operation and maintenance.

HWQ-5 Long-Term Memorandum of Understanding: An MOU shall be executed prior to completion of the final engineering design and before approval of the corresponding plans, specifications, and estimate phase of the project. The MOU shall clarify and addresses overlapping, multiagency MS4-related technical, financial, legal, and other responsibilities for the design, construction, and operational phases of the project. Agencies involved in the MOU shall include, but not be limited to, Caltrans, CHSRA, and Metro. The MOU shall address, but not be limited to, the stormwater runoff quality to be conveyed and accepted among the affected parties.

HWQ-6 Comply with Local Dewatering Requirements: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, respectively.

HWQ-7 Comply with Local Dewatering Requirements for Contaminated Sites: The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be

to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Los Angeles, respectively.

HWQ-8 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses: Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.

3.8.7 CEQA Significance Conclusions

Upon implementation of the Mitigation Measures HWQ-1 through HWQ-8, significant impacts related to hydrology and water quality would be reduced to a level less than significant.

3.9 Geology and Soils

3.9.1 Introduction

This section provides an evaluation of the proposed project in relation to existing geology, soils, and seismic conditions within the project study area. Information contained in this section is summarized from the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR) in combination with data collected from subsequent geotechnical investigations, and other published sources.

3.9.2 Regulatory Framework

Table 3.9-1 identifies and summarizes applicable federal, state, and local laws, regulations, and plans relative to geology and soils.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology and Soils

Law, Regulation, or Plan	Description
Federal	
UBC	The UBC is published by the International Conference of Building Officials and forms the basis for California's building code, as well as approximately half of the state building codes in the U.S. It has been adopted by the California Legislature to address the specific building conditions and structural requirements for California, as well as provide guidance on foundation design and structural engineering for different soil types.
Earthquake Hazards Reduction Act	In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the U.S. through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program, which was further refined by the National Earthquake Hazards Reduction Program Act.
State	
Alquist-Priolo Special Studies Zone Act (1972)	The Alquist-Priolo Special Studies Zone Act (Alquist-Priolo Act) (California PRC Sections 2621–2630) was passed into law following the destructive February 9, 1971, San Fernando earthquake. The intent of the Alquist-Priolo Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology and Soils

Law, Regulation, or Plan	Description
CBC	The State of California provides minimum standards for building design through the CBC (CCR, Title 24). The 2016 California codes became effective January 1, 2017. With the shift from seismic zones to seismic design, the CBC philosophy has shifted from "life safety design" to "collapse prevention," meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site.
Seismic Hazards Mapping Act	The Seismic Hazards Mapping Act aims to reduce the threat of seismic hazard to public health and safety by identifying and mitigating seismic hazards. State, County, and City agencies are directed to utilize such maps in land use and permitting processes. The act also requires geotechnical investigations particular to the site be conducted before permitting occurs on sites within seismic hazard zones.
Local	
City of Los Angeles General Plan	The City's General Plan Safety Element provides a contextual framework for understanding the relationship between hazard mitigation, response to a natural disaster and initial recovery from a natural disaster. Exhibit B in the Safety Element identifies the project study area as being susceptible to liquefaction. The Conservation Element identifies dangers of inland erosion and includes objectives, policies, and programs to control erosion.
ADSP	Appendix G of the ADSP provides specific mitigation measures to address grading and local geologic hazards and requires a project-specific geotechnical investigation for new structures.
Standard Urban Stormwater Mitigation Plan	The Standard Urban Stormwater Mitigation Plan was adopted in 2000 and is part of the municipal stormwater program to address stormwater pollution from new development and redevelopment by the private sector. It includes required Best Management Practices intended to reduce erosion.

Notes:
ADSP= Alameda District Specific Plan, CBC=California Building code, CCR=California Code of Regulations, PCR=Public Resources Code, UBC=Uniform Building Code

3.9.3 Methods for Evaluating Environmental Impacts

Findings and conclusions contained in this analysis are based on the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR). Relevant literature and maps were reviewed including published geologic maps, planning documents and hazard maps, as-built logs of test borings and previous geotechnical and environmental reports for LAUS, Metro Red Line Tunnel, East Side Underpass Light Rail Transit (Gold Line Eastside Extension), and nearby developments. In addition, findings and recommendations based on results of the preliminary geotechnical investigation completed for the project in 2017 were also considered.

This review provided the basis for the evaluation of site conditions and geologic and geotechnical conditions present in the project study area.

3.9.4 Existing Conditions

Geologic Setting

The project study area is located within the Los Angeles Basin near the boundary of the Transverse Ranges Province and the northern Peninsular Ranges Geomorphic Province. The mountain ranges include the Santa Monica and San Gabriel Mountains located to the northwest of the project study area and the Palos Verdes Hills towards the southwest. The Transverse Ranges are characterized by an east-west trending complex group of mountain ranges and valleys. The Transverse Ranges are comprised predominantly of sedimentary rocks, Mesozoic granitic rocks, and ancient Precambrian rocks of all types. The northern Peninsular Ranges are characterized by a series of northwest-southwest trending mountains and faults. These mountain ranges are composed of metamorphosed sedimentary and volcanic rocks of Jurassic age that have been intruded by mid-Cretaceous plutonic rocks of the Southern California batholith and rimmed by Cenozoic sedimentary rocks.

The project study area is located west of the Los Angeles River on a gently sloping alluvial surface. Topography within the project study area slopes downward from north to south with ground elevations ranging from about 274 to 295 feet above MSL.

Local Geologic Conditions

The project study area is underlain by varying amounts of artificial fill and Holocene-age and Pleistocene alluvium deposits consisting of silty sands, sands and silts with varying amounts of gravel, and cobbles. Beneath the alluvium layers, Miocene Puente marine sedimentary formations are present. The artificial fill varies in composition, but is generally known to contain construction debris as well as imported natural earth materials. The compaction of this layer is uncertain and, therefore, this layer of fill is categorized as "uncertified fill." The artificial fill layer varies from about 5 to 15 feet in thickness, but may extend to depths as great as about 30 feet bgs in some locations.

Beneath the fill and younger alluvium, older alluvium deposits, sometimes referred as to the San Pedro Formation, overlay bedrock of the Puente and Fernando Formations. In general, bedrock was encountered at depths ranging from about 55 feet bgs, to the maximum depth explored (110 feet bgs), within LAUS. Along East Commercial Street, the Puente Formation was encountered at depths ranging from about 53 to 94 feet bgs. The material encountered consists of light gray to dark gray siltstone with interbedded claystone layers The material consisting of the Puente Formation was of low to moderate strength with locally hard, cemented and interbedded concretions. In addition, calcareous cemented zones were observed in the samples collected from the borings completed.

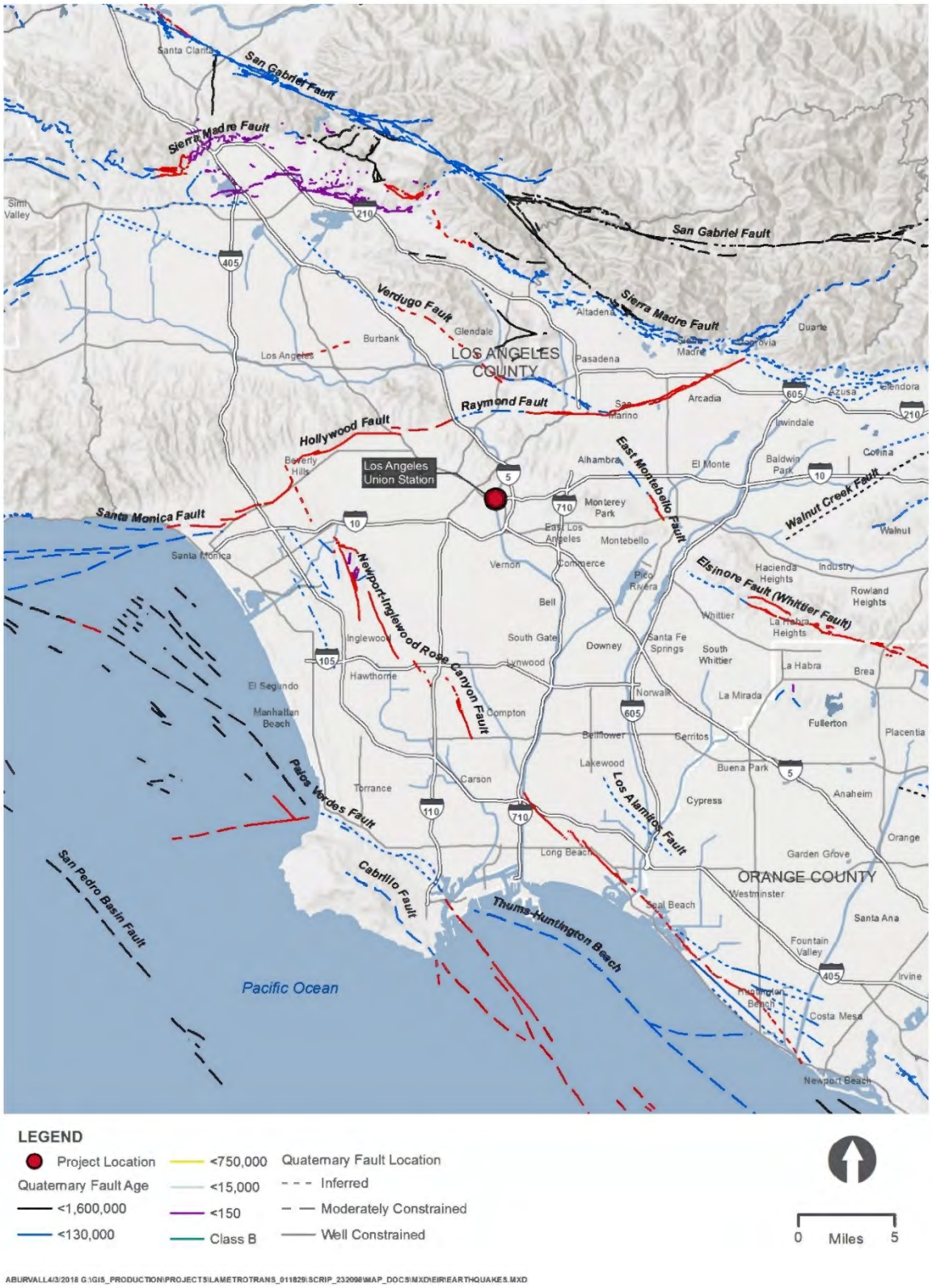
Boulders were encountered at various locations within LAUS during previous geotechnical investigations. Occasionally, boulders were encountered at shallower depths during construction of the LAUS and the Metro Red Line Tunnel.

Regional Faulting and Seismicity

There are no known active or potentially active faults mapped within the project study area. However, the project study area is underlain by northerly dipping blind thrust faults at depth. These faults are the Upper Elysian Park thrust fault and the Los Angeles segment of the Puente Hills thrust fault system. The project study area is not located within a delineated Alquist-Priolo Earthquake Fault Zone (Appendix L of this EIR).

The principal seismic hazard in the project study area is ground shaking resulting from an earthquake occurring along one of several major active or potentially active faults in Southern California. Figure 3.9-1 depicts the closest active faults to the project study area, and Table 3.9-2 shows the approximate distances and maximum earthquake moment magnitudes.

Figure 3.9-1. Project Area Location with Context of Regional Active Faults



Source: Appendix L of this EIR

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Table 3.9-2. Project Area Location with Context of Regional Active Faults

Fault Name	Distance from Project Study Area (miles)	Maximum Earthquake Moment Magnitude (Mw)[1]
Elysian Park (Upper)	0.8	6.6
Hollywood	4.3	6.6
Puente Hills (Los Angeles)	4.5	6.9
Raymond	4.6	6.7
Santa Monica	4.6	7.0
Verdugo	6.8	6.8
Newport Inglewood	8.4	7.2
Sierra Madre	11.0	7.2
Elsinore	11.6	6.9
Malibu Coast	16.7	6.6
Palos Verdes	17.7	7.2
San Gabriel	18.2	7.2
THUMS – Huntington Beach	19.6	6.6
Northridge Hills	19.3	6.4

Source: Appendix L of this EIR

Notes:
[1] This is the maximum earthquake moment magnitude, which could occur within the specified fault zone.
Mw=Moment Magnitude

Geologic Hazards

Potential geologic hazards within the region include fault-induced ground rupture, seismic ground shaking, liquefaction and seismically-induced settlement, lateral spreading, landslides, subsidence, collapsible and expansive soils, and corrosive soils. These potential geologic hazards, as expressed locally within the project study area, are described further below.

Fault-Induced Ground Rupture

As previously stated, there are no known active faults that directly intersect with the project study area. The project study area is not located within an Alquist-Priolo Earthquake Fault Zone, and blind thrust faults are not exposed at the ground surface. Therefore, these faults are not considered capable of generating surface rupture. The nearest special study zone is located approximately 5.5 miles from the project study area. Based on these circumstances, the likelihood of ground rupture to occur within the project study area is considered low.

Seismic Ground Shaking

The project study area is located within an active seismic region and is expected to experience ground shaking from an earthquake occurring along several major active or potentially active faults in Southern California. The probability that the project study area would be subject to strong seismic shaking is considered moderate to high, due to the proximity of known active faults in the region (Table 3.9-2).

Liquefaction and Seismically-Induced Settlement

Liquefaction is the loss of soil strength or stiffness due to a buildup of pore-water pressure during ground shaking. Liquefaction is associated primarily with loose (low-density), saturated, fine- to medium-grained, cohesionless soils. Effects of liquefaction can include sand boils, excessive displacements, bearing capacity failures, and lateral spreading. Seismically-induced settlement consists of dry dynamic settlement (above groundwater) and liquefaction-induced settlement (below groundwater). This settlement occurs primarily within loose to moderately dense sandy soil due to reduction in volume during, and shortly after, an earthquake event. The project study area is located within an area designated as potentially liquefiable (Appendix L of this EIR). The *Link US Preliminary Geotechnical Report* indicates that liquefaction is expected within Segments 1: Throat Segment and Segment 2: Concourse Segment of the project study area. For a preliminary liquefaction analysis, three possible ground motion criteria were selected. These three methods include AREMA Level II shaking (a relatively low-level seismic event), CHSRA's maximum considered earthquake (a moderately high seismic event), and the City of Los Angeles maximum credible earthquake (an extremely high seismic event).

Groundwater in the project study area ranges between depths of approximately 14 to 48 feet bgs (corresponding groundwater elevations range from about 222 to 256 feet MSL) depending on the season. Historical groundwater depths as shallow as 13.5 feet bgs were reported, but more recent measurements indicated a steady groundwater level decline (Appendix L of this EIR). The soils encountered below groundwater are generally alluvial deposits consisting of medium-dense to very-dense sandy silts, silty sands, and sands with gravel that are not considered susceptible to liquefaction. However, there is evidence of thin interbedded loose materials within the upper 30 feet of the project study area.

Lateral Spreading

Lateral spreading is a type of landslide motion generally characterized by progressive cracking and ground motion near a slope face. Lateral spreading is generally associated with liquefiable soils which allow the slope face and surrounding area to flow during or shortly after earthquake ground motions. Conditions

favorable for lateral spreading are frequently found along streams and waterfronts or in loosely placed, saturated, sandy fill.

The Los Angeles River is located east of the project study area and is a concrete channel. Based on the proposed improvements, as well as the known soil conditions, the potential for lateral spreading within the project study area is considered low. The portion of the project study area, located near the Los Angeles River, where limited geotechnical information is available, would require further investigation to evaluate the lateral spreading potential.

Landslides

Slope instability is related to slope gradient, soil or rock type, consolidation or cementation of the rock, and the amount of fracturing of the rock. Landsliding can be seismically induced, resulting from extended periods of ground shaking and high ground accelerations. Improper grading and excessive rainfall or irrigation can also increase the susceptibility of land sliding. Generally, slopes of 10 degrees or more are subject to seismically induced land sliding.

The project study area is nearly flat and is not adjacent to any hills or steep slopes. Therefore, the probability of landslides occurring on-site or affecting the project study area is unlikely.

Subsidence

Ground subsidence is a process characterized by downward displacement of surficial materials caused by natural phenomena such as removal of underground fluids, natural consolidation, dissolution of underground minerals, or by man-made phenomena such as underground mining or tunneling. According to United States Geological Survey (Appendix L of this EIR), the project alignment is located outside of any delineated zones of subsidence due to groundwater pumping, oil extraction, and/or peat loss. The potential for subsidence due to groundwater pumping and/or the extraction of oil in the surrounding area near LAUS is considered low. It is anticipated that the proposed improvements would impose higher loads on the existing soils than those that presently exist. Therefore, settlement, both long-term and immediate, is anticipated to occur in low density, loose deposits of silts, clays, and sands where project-related infrastructure is proposed on shallow foundations. Thin interbedded loose deposits within the upper artificial fill should be anticipated.

Collapsible Soils

Preliminary results from consolidation testing, along with the moisture and density, and soil types identified during the preliminary investigation indicates that hydrocollapse is not anticipated to have a substantial impact on foundation design and performance.

Expansive Soils

Expansive soils are generally plastic clays that can undergo a substantial increase in volume with an increase in moisture content and a substantial decrease in volume with a decrease in moisture content. Expansive soils can cause uplift pressures that can lead to structural damage. Based on the material encountered

within the top 5 feet during the preliminary geotechnical investigation, the likelihood of encountering expansive soils is considered low.

Corrosive Soils

Based on the Caltrans specifications and existing data from previous reports, the soils within the project study area have a moderate to severe corrosion potential to buried metal structures, and the potential for sulfate attack on concrete is considered low.

3.9.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts on geology and soils would be considered significant if the project would:

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42
   ii. Strong seismic ground shaking
   iii. Seismic-related ground failure, including liquefaction
   iv. Landslides

B. Result in substantial soil erosion or the loss of topsoil

C. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

D. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1994), creating substantial risk to life or property

E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project:

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i. Fault Rupture - The project study area does not traverse an active fault or a designated Alquist-Priolo Earthquake Fault Zone; therefore, the potential for fault rupture to occur within the project study area is unlikely. No impact is identified for this issue area.

   iv. Landslides - The project study area is nearly flat and is not adjacent to any hills or steep slopes. Therefore, the potential for landslides to occur within the project study area is unlikely. No impact is identified for this issue area.

E. Septic Tanks or Alternative Waste Disposal Systems - The new passenger concourse would include restroom facilities for employees and passengers and would, therefore, generate wastewater. The project would connect to local sanitary sewer infrastructure with wastewater treatment provided by the City of Los Angeles. In this context, the project would not require the use of septic tanks or an alternative wastewater disposal system. No impact is identified for this issue area.

Impact Analysis

THRESHOLD 3.9-A	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: ii. Strong seismic ground shaking; and, iii. Seismic-related ground failure, including liquefaction.

Direct Impacts – Construction

During construction, the project site would be subject to the same level of ground motion in the event of an earthquake; however, standard safety protocols, in accordance with Occupational Safety and Health Administration (OSHA) requirements, would be implemented during construction to prevent risk of loss, injury, or death if seismic activity is encountered during construction. For this reason, construction of the proposed project would not exacerbate existing hazards related to seismic ground shaking. Therefore, impacts are considered less than significant.

Direct Impacts – Operations

Once operational, the probability that the project-related infrastructure would be subject to strong seismic shaking is considered high due to the proximity of known active faults in the region. The project-related infrastructure would be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods; therefore, project implementation would not

exacerbate existing hazards posed by seismic shaking, because an improved structural response to an earthquake is anticipated to occur when compared to existing conditions. Impacts are considered less than significant.

Indirect Impacts

In general, liquefaction is expected at the project site due to the soil conditions and depth of groundwater. Based on the preliminary liquefaction analysis performed for the project, liquefaction is expected between depths of about 20 and 30 feet bgs in Segment 1:Throat Segment and Segment 2: Concourse Segment of the project study area. Based on these considerations, this is considered a significant impact. Mitigation Measure GEO-1 (described in Section 3.9.6) is proposed to reduce liquefaction-related hazards to a level less than significant.

THRESHOLD 3.9-B	Result in substantial soil erosion or the loss of topsoil

Direct Impacts – Construction

Topsoil is typically the top 2 to 3 inches of soil, primarily comprised of dark decomposed organic material. The majority of the project study area consists of disturbed areas with existing rail tracks, developed properties, and the rail yard. The LAUS campus is on disturbed area and fill. The potential for impacts relative to topsoil is extremely low due to the urban developed nature of the project study area. Impacts are considered less than significant.

Direct Impacts – Operations

Once the project is constructed, there would not be a substantial amount of exposed surfaces, which could be subjected to accelerated soil erosion during operations. The throat segment and run-through segment would still include exposed surfaces; however, the placement of ballast and other soil protection materials would provide stabilization to prevent erosion. Impacts are considered less than significant.

Indirect Impacts

The indirect impacts resulting from project-related post-construction erosion are described in Section 3.8, Hydrology and Water Quality. No indirect impacts that would generate additional erosion or loss of topsoil are anticipated due to the disturbed nature of the project study area. Impacts are considered less than significant.

THRESHOLD 3.9-C	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

Direct Impacts – Construction

The potential for subsidence due to groundwater pumping and/or extraction of oil in the surrounding area near LAUS is considered low. In addition, the project site is not located within an area prone to landslides. Based on the consolidation test results, along with the moisture and density and soil types identified during the preliminary geotechnical investigation, hydrocollapse is not anticipated to have a substantial impact on the project improvements. However, due to the presence of compressible layers within the upper 30 feet in Segment 2: Concourse Segment of the project study area, settlement, both long-term and immediate, is anticipated to occur for those improvements proposed to be founded on shallow foundations. In addition, liquefaction is expected due to the soil conditions and groundwater level. Based on these considerations, this is considered a significant impact. Mitigation Measure GEO-1 (described in Section 3.9.6) would reduce liquefaction-related hazards to a level less than significant.

Direct Impacts – Operations

As indicated above, settlement and liquefaction is anticipated to occur within the upper 30 feet of the soils in the project study area. The project infrastructure would be designed and constructed in accordance with standard engineering practices. After construction is complete and the project is operational, the likelihood that the project would be affected by either subsidence, due to the settlement of compressible layers and/or liquefaction induced settlement, is low. Impacts are considered less than significant.

Indirect Impacts

Lateral spreading is a type of landslide motion generally characterized by progressive cracking and ground motion near a slope face. Lateral spreading is generally associated with liquefiable soils which allow the slope face and surrounding area to flow during or shortly after earthquake ground motions. Conditions favorable for lateral spreading are frequently found along streams and waterfronts or in loosely placed, saturated, sandy fill (Appendix L of this EIR). The Los Angeles River is a concrete channel located southeast of LAUS. Based the preliminary geotechnical evaluation, the potential for lateral spreading at the site is considered low. Impacts are considered less than significant.

THRESHOLD 3.9-D	Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risk to life or property

Direct Impacts – Construction

Expansion potential is considered to be low for the project based on the material encountered within the top 5 feet and plasticity index test results during the preliminary geotechnical investigation. Impacts are considered less than significant.

Direct Impacts – Operations

As indicated above, the soils within the project study area are considered to have a low expansion potential based on the results from the preliminary geotechnical investigation. Project infrastructure would be constructed in accordance with standard engineering practices, which would also minimize the potential for project-related infrastructure to be subject to expansive soils. After construction is complete and the project is operational, the likelihood that the project would be affected by expansive soils is low. Impacts are considered less than significant.

Indirect Impacts

No indirect impacts related to expansive soil would occur with implementation of the project.

3.9.6 Mitigation Measures

Implementation of the following mitigation measure is proposed to reduce significant impacts related to geology and soils.

GEO-1 Prepare Final Geotechnical Report: During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following:

- Site preparation
- Soil bearing capacity
- Appropriate sources and types of fill
- Liquefaction
- Lateral spreading
- Corrosive soils
- Structural foundations
- Grading practices

In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions, and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the California Building Code (CBC), as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of project-related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria, California Amendments to the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications, and applicable local city codes (Appendix L of this EIR). The project shall be designed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.

3.9.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measure GEO-1 (described in Section 3.9.6), significant impacts related to geology and soils would be reduced to a level less than significant.

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3.10 Hazards and Hazardous Materials

3.10.1 Introduction

This section provides an evaluation of the proposed project in relation to the existing hazards and hazardous materials within the project study area. This section also provides an evaluation of hazards as they relate to wildfires, proximity to airports, and interference with adopted emergency response plans. Information contained and considered in this section is summarized from a combination of sources including the City of Los Angeles General Plan and the Link US Phase I ESA (Appendix M of this EIR).

3.10.2 Regulatory Framework

Table 3.10-1 identifies and summarizes federal, state, and local laws, regulations, and plans relative to hazards and hazardous materials.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazards and Hazardous Materials

Law, Regulation, or Plan	Description
Federal	
CERCLA	CERCLA provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified.
Hazardous Materials Transport	USDOT, along with the California Highway Patrol and Caltrans, regulates transportation of hazardous materials between states. Together, these agencies determine container types used and license hazardous-waste haulers for transportation of hazardous waste on public roads. FRA enforces the Hazardous Materials Regulations, which include requirements that railroads and other transporters of hazardous materials, as well as shippers, have and adhere to security plans and also train their employees involved in offering, accepting, or transporting hazardous materials on both safety and security matters.
NCP	The NCP is the federal plan for responding to oil spills and hazardous substances releases. The NCP establishes the National Response Team and its roles in the National Response System, which include planning and coordinating response to major discharges of oil or hazardous waste, providing guidance to Regional Response Teams, coordinating a national program of preparedness planning and response, and facilitating research to improve response activities. The U.S. EPA has pending revisions to the NCP in order to align with the National Response Framework. These revisions have not been approved to date.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazards and Hazardous Materials

Law, Regulation, or Plan	Description
Oil Pollution and Prevention Regulation	The U.S. EPA's oil spill prevention program includes the SPCC and the Facility Response Plan rules. The SPCC rule helps facilities prevent a discharge of oil into navigable waters or adjoining shorelines. The Facility Response Plan rule requires certain facilities to submit a response plan and prepare to respond to a worst-case oil discharge.
Occupational Safety and Health Act of 1970	The Occupational Safety and Health Act, which is implemented by OSHA, contains requirements, as set forth in Title 29 of the CFR Section 1910, that are designed to promote worker safety, worker training, and a worker's right-to-know. OSHA requirements would be in effect during construction and operation of the project to ensure the safety of workers. Title 49 of the CFR requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazardous materials requirements.
RCRA	Under RCRA, the U.S. EPA has the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste by large-quantity generators (1,000 kilograms/month or more). Under the RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. Additionally, all hazardous waste transporters are required to be permitted and must have an identification number. In California, the U.S. EPA has delegated RCRA enforcement to Cal/EPA, DTSC.
Right-to-Know Laws and Pollution Prevention Requirements	EO 12856 was issued on August 3, 1993, directing federal agencies to conduct their facility management and acquisition activities to minimize the quantity of toxic chemicals entering any waste stream, including releases to the environment; report to the public on toxic chemicals entering any waste stream from their facilities, including releases to the environment; improve local emergency planning, response, and accident notification; and encourage markets for clean technologies and safe alternatives to extremely hazardous substances or toxic chemicals.
Superfund Amendments and Reauthorization Act	CERCLA enlarged and reauthorized the Superfund Amendments and Reauthorization Act of 1986 (SARA, PL 99-499). The U.S. EPA compiles a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S. and its territories, known as the NPL.
SEMS-ARCHIVE	The SEMS-ARCHIVE tracks sites that have no further interest under the federal Superfund program. The list was formerly known as the Comprehensive Environmental Response, Compensation, and Liability Information System – NFRAP, renamed to SEMS-ARCHIVE by the U.S. EPA in 2015. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of U.S. EPA's knowledge, assessment at a site has been completed and that U.S. EPA has determined no further steps will be taken to list the site on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazards and Hazardous Materials

Law, Regulation, or Plan	Description
TSCA	The TSCA of 1976 provides U.S. EPA with authority to require reporting, record-keeping, and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics, and pesticides. TSCA addresses the production, import, use, and disposal of specific chemicals including polychlorinated biphenyls, asbestos, radon, and LBP. The Frank R. Lautenberg Chemical Safety for the 21st Century Act was implemented on June 22, 2016, as an update to the TSCA.
State	
Cal/EPA	Cal/EPA and the SWRCB establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following: • Aboveground Petroleum Storage Tank Act • Asbestos-Containing Material Regulations • California Accidental Release Prevention Program • Emergency Response to Hazardous Materials Incidents • Hazardous Substances Information and Training Act • Hazardous Waste Control Law • Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (i.e., Tiered Permitting) • Public Safety/Fire Regulations/Building Codes • Safe Drinking Water and Toxic Enforcement Act • Toxic Substances Control Act • Underground Storage of Hazardous Substances Act Within Cal/EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazards and Hazardous Materials

Law, Regulation, or Plan	Description
Hazardous Materials Release Response Plans and Inventory Act (Business Plan Act)	The Business Plan Act requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Per the requirements of this act, the preparation of a HMBP would be required for the safe storage, containment, and disposal of chemicals and hazardous materials related to the proposed project operations, including waste materials. As of May 11, 2016, all sections within the CCR Title 19, Division 2, Chapter 4 have been renumbered. This change was necessary because SB 84 (2015) added Article 3.9 (commenting with Section 8574.30) to Government Code Title 2, Division 1, Chapter 7, Regional Railroad Accident Preparedness and Immediate Response. These new regulations will be added immediately following the renumbering of Chapter 4.
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)	The Unified Program required the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency. The Program Elements consolidated under the Unified Programs are: Tiered Permitting, Aboveground Petroleum Storage Tank SPCC, Community-Right-To-Know, California Accidental Release Prevention, UST, and Uniform Fire Code Plans and Inventory Requirements. The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs.
Local	
City of Los Angeles General Plan, Safety Element (1996)	The Safety Element in part provides goals, objectives, policies and programs related to hazards mitigation, emergency response, and disaster recovery and implementation to carry out these policies. The Safety Element provides specifics as to selected urban rife and secondary hazards, such as; oil fields, areas with known shallow methane accumulation, natural gas transmission and distribution lines, and areas with concentrations of post-1946 high-rise buildings (greater than eight stories).
City of Los Angeles General Plan, Conservation Element	The Conservation Element in part, provides goals, objectives, policies, and programs related to conservation of fossil fuels and protection of petroleum resources. Policy 1 provides information about energy conservation and petroleum reuse and Policy 3 addresses protection of neighborhoods from accidents associated with drilling, extraction, and transport operations.
Los Angeles Hazards Mitigation Plan	Los Angeles County, in conjunction with several emergency service partners, has prepared a Local All-Hazards Mitigation Plan that sets strategies for coping with natural and man-made hazards faced by residents. The plan has a five-step risk and vulnerability assessment: 1) hazard identification; 2) profiling hazard events; 3) vulnerability assessment/inventory of existing assets; 4) risk analysis; and 5) assessing vulnerability/analyzing development trends for earthquake hazards, flood hazards, wildfire, tsunami, and non-significant hazards (i.e.,

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazards and Hazardous Materials

Law, Regulation, or Plan	Description
	water/wastewater emergency). The intent of the Plan is to develop a sustained source of action to reduce or eliminate long-term risk to people and property for both natural and technological hazards and their effects.
City of Los Angeles Building Code	Municipal Code Chapter 9, Article 1 sets forth the Los Angeles Building Code regulations relating to methane mitigation requirements. Ordinance No. 175790 amends Section 91.106.4.1 and Division 71 of Article 1, Chapter IX of the Los Angeles Municipal Code to establish citywide methane mitigation requirements and include more current construction standards to control methane intrusion into buildings. Ordinance No. 180619, which amends Section 91.7103, states that all devices, components and equipment installed in any methane-detection system shall be approved by the Fire Department as set forth in Fire Prevention Bureau Requirement No. 71.
City of Los Angeles Fire Code	Municipal Code Chapter 5, Article 7 sets forth laws and hazardous material storage and handling procedures and provisions for safe guarding of life and property from fire, explosion, panic, or other hazardous conditions. The City Fire Department is the administrative agent for the California Health and Safety Code and CCRs related to Emergency Planning and Community Right-to-Know laws and federal SARA Title III. In addition, the department maintains an Underground Tank Unit that governs the UST program CCR Title 23, Division 3, Chapters 16 through 18. The LAFD implements the Hazardous Materials Inventory and Business Emergency Response Plan Program to disclose hazardous materials stored, used, or handled on site.

Notes:
Cal/EPA=California's Environmental Protection Agency; Caltrans=California Department of Transportation; CCR=California Code of Regulations; CERCLA=Comprehensive Environmental Response, Compensation, and Liability Act; CFR=Code of Federal Regulations; DTSC=Department of Toxic Substances Control; EO=Executive Order; EPA=Environmental Protection Agency; FRA=Federal Railroad Administration; HMBP=Hazardous Materials Business Plan; LAFD=Los Angeles Fire Department; LBP=lead-based paint; NCP=National Oil and Hazardous Substances Pollution Contingency Plan; NPL=National Priorities List; NFRAP=No Further Remedial Action Planned; OSHA=Occupational Safety and Health Administration; Phase I ESA=Phase I Environmental Site Assessment; RCRA=Resource Conservation and Recovery Act; SARA=Superfund Amendments and Reauthorization Act; SB=Senate Bill; SEMS-ARCHIVE=Superfund Enterprise Management System Archive; SPCC=Spill Prevention, Control, and Countermeasures; SWRCB=State Water Resources Control Board; TSCA=Toxic Substances Control Act; USDOT=U.S. Department of Transportation; UST=underground storage tank; U.S.=United States

3.10.3 Methods for Evaluating Environmental Impacts

The analysis contained in this section is based on the Link US Phase I ESA (Appendix M of this EIR). The preparation of the Phase I ESA included an environmental records review; a data gap analysis; historical research, which included a review of Sanborn Fire Insurance Maps, historical aerial photographs, and a city directory; a site reconnaissance of the project study area; and a review of the SWRCB GeoTracker online database. Impacts associated with hazards and hazardous materials that could result from project construction and operational activities were evaluated qualitatively based on-site conditions in the project study area, proximity of the project footprint to documented recognized environmental conditions (REC), and expected construction practices.

A review of fire severity maps prepared by the California Department of Forestry and Fire Protection (Cal Fire) was also conducted to determine the project's direct and indirect risk to wildfires. The Los Angeles County Airport Land Use Compatibility Plan was reviewed for issues relating to the project's proximity to airports.

3.10.4 Existing Conditions

Terminology

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined by federal regulations as "a substance or material that ... is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> *Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

> *...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness, [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.*
>
> *Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria listed in the CCR Title 22. Cleanup requirements are determined on a case-by-case basis by the agency with lead jurisdiction over the project. Under CCR Title 22, the term "hazardous substance" refers to both hazardous materials and hazardous wastes, both of which are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (CCR Title 22, Chapter 11, Article 3).*

The Link US Phase I ESA included an evaluation of the project study area for indications of RECs. The Phase I ESA was conducted in accordance with the scope and limitations of the American Society for Testing and Materials International (ASTM) Practice E1527-13. The ASTM Practice E1527-13 defines the following categories of RECs:

- *REC* – The presence, or likely presence, of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment, (2) under conditions indicative of a release to the environment, or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not RECs (as defined below).
- *Historic Recognized Environmental Condition (HREC)* – A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).
- *Controlled Recognized Environmental Condition (CREC)* – A REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

ASTM Practice E1527-13 defines "release" as a release of any hazardous substance or petroleum product and shall have the same meaning as the definition of "release" in Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S. Code [USC] §9601(22)).

An additional condition that is not included under the definitions of a REC, but is defined by ASTM Practice E1527-13 is *de minimis*. *De minimis* is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not RECs nor controlled RECs.

In addition to the ASTM-based "REC" classification of a site, a relative risk ranking system was employed that includes several investigative elements to describe "sites of concern." A site of concern is a site that the investigative process has determined to have sufficient possibility of contamination, which warrants attention during the Phase I ESA investigation. A site of concern may or may not ultimately be classified as a REC site as defined by ASTM, yet still may be "of concern" to the project. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues associated with the site.

Once the elements of the investigation process were completed identified sites of concern were categorized using a subjective risk ranking system, classifying the sites with low risk, moderate risk, or high risk determinations. Metro concurred with the identification and classifications. The following provides general descriptions of each category:

- Low risk sites are those sites that have few indications of potential for release of hazardous materials. On some occasions, sites that have had a hazardous materials issue in the past, but have been remediated with approval of the state environmental agency or local regulatory agencies, may qualify as low risk. Examples of low risk sites include undeveloped or agricultural property, residential property, or benign commercial properties such as office buildings, warehouses, distribution facilities, or municipal facilities with no listed violation.
- Moderate risk sites are those sites that have some indications of possible hazardous materials issues. A moderate risk site may appear on a database as having a permit to handle hazardous materials, but has recorded no violations to date. Another way that a site could be interpreted as moderate risk would be if the environmental records search indicated no listing, but the site is an auto repair facility with visible surface staining. Examples of moderate risk sites include auto repair garages, welding shops, or manufacturing facilities with minor listings in the environmental database.
- High risk sites are those sites that have a high potential for releasing hazardous materials to the soil or groundwater or have a recorded release issue. Examples of high risk sites include current service stations, bulk fueling terminals, sites listed in environmental databases as having had a release, or a known release that has not been remediated.
- Indeterminate risk sites are those which, at the time of report preparation, did not include sufficient information to include a high, moderate, or low ranking. Indeterminate risk sites often require additional file review to determine the details of any related environmental issues at the site.

Airports

The project study area is located approximately 13 miles northeast of the Los Angeles International Airport and 12.5 miles southeast of the Burbank Airport. According to the Los Angeles County Airport Land Use Plan, the project study area is not located within either airport's influence area (County of Los Angeles 2004 and 2012a). According to the Federal Aviation Administration airport data (Federal Aviation Administration 2016), a total of 52 heliports are located within the City of Los Angeles. No privately owned or small-scale airports are located within 2 miles of the project study area.

Emergency Response or Evacuation Plan

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local level for all types of disasters, including human-made and natural. It is the responsibility of government to undertake an ongoing

comprehensive approach to emergency management in order to avoid or minimize the effects of hazardous events. Local governments have the primary responsibility for preparedness and response activities.

The Los Angeles County Office of Emergency Management maintains the Los Angeles County Operational Area Emergency Response Plan and the County of Los Angeles All-Hazard Mitigation Plan. The Los Angeles County Office of Emergency Management leads and coordinates disaster plans and disaster preparedness exercises for all cities and 288 special districts in Los Angeles County (County of Los Angeles 2012b).

The project study area includes a dense street network south of LAUS, ranging from major highways to local city streets. The roadways within the project study area include: the El Monte Busway, US-101, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, and Center Street.

Based on a review of disaster route maps for the Los Angeles County Operational Area (County of Los Angeles 2008b), and as shown on Figure 3.10-1, the following designated disaster routes are within the project study area:

- Cesar Chavez Avenue
- Alameda Street
- Fourth Street
- US-101
- I-10

Fire Hazards

CAL Fire maps fire hazard areas based on fuels, terrain, weather, and factors that increase an area's susceptibility to wildfires (vegetation, type, slope, and atmospheric conditions). Considering the urban nature of the project study area, the risk of wildfire is relatively low. The nearest State Responsibility Area very high fire hazard severity zone is located to the west in the Santa Monica Mountains (CAL Fire 2007). The nearest local responsibility area very high fire hazard severity zone is located west of the project study area, adjacent to Los Angeles Dodger Stadium (CAL Fire 2011).

Proximity to Schools

The following schools are located within 0.25 mile of the project footprint:

- *Ann Street Elementary* – 126 East Bloom Street (located 0.13 mile north of the throat segment)
- *Felicitas and Gonzalo Mendez Senior High* – 1200 Plaza Del Sol (located 0.16 mile west of the minor track improvements near First Street)

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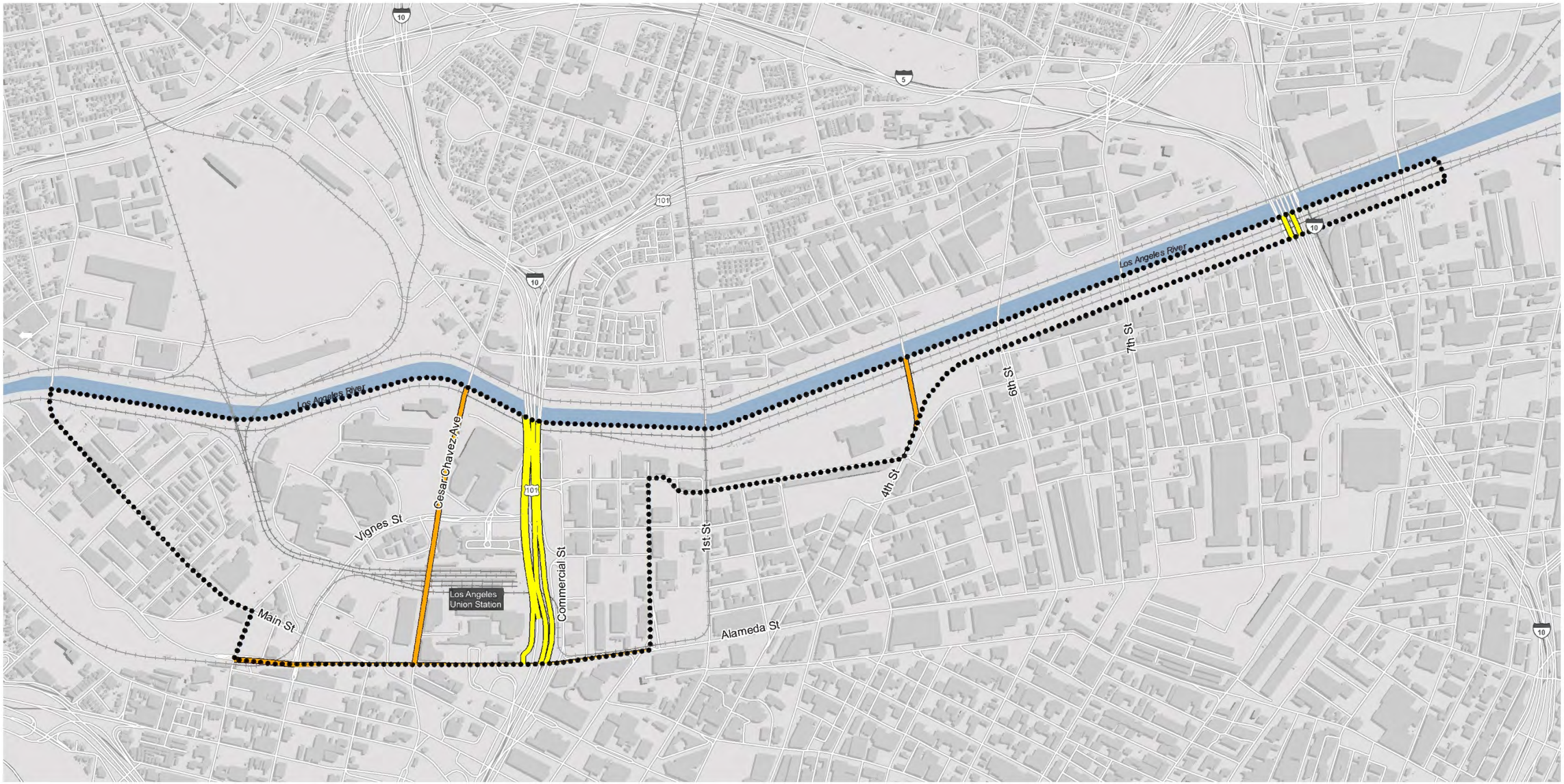
Figure 3.10-1. Evacuation Routes



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Hazardous Materials

Site and Vicinity Characteristics

The project study area is located within Downtown Los Angeles, a completely built urban environment consisting of varying land uses that have developed and transformed over time. Land uses in the project study area include residential, commercial, industrial, parks, and public land.

The project study area is located west of the Los Angeles River. Based on the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR), the local geologic substrate includes fill materials consisting of a mixture of silt, sand, and gravel, from 6 to 15 feet; Holocene and Pleistocene age alluvium up to 85 feet thick; and siltstone bedrock at approximately 85 to 90 feet bgs. Groundwater in the project study area ranges in depth between approximately 14 to 48 feet bgs (Appendix L of this EIR).

Phase I Environmental Site Assessment

To identify the existing sources of hazardous materials, a database search of the project study area was completed that included federal, state, local, and tribal databases as defined by ASTM Practice E1527-13, in addition to Environmental Database Record proprietary databases. The boundary of the project study area (throat, concourse, and run-through segments) was used to define the search parameters for the Environmental Database Record using a 0.5-mile Phase I ESA buffer area. This buffer is applied to capture adjacent areas from the project study area. The Phase I ESA included the following:

Environmental Records Review

An environmental information database search was completed on May 11, 2016. The database search resulted in 1,535 regulatory listings located within 0.5 mile of the project study area. A total of 155 REC sites were noted to have potential risk to the project, of which a total of 35 sites were determined to be a High or Moderate Risk to the project (Table 3.10-2 and Figure 3.10-2). Some listings are presented twice in Table 3.10-2 if the site is located adjacent to multiple segments of the project. To orient the reader to the location of the REC site within the project study area, the REC sites are placed in the table under the applicable segment within the project study area (i.e., throat, concourse, and run-through segments).

Data Gap Analysis

Two data gaps were identified during preparation of the Phase I ESA: 1) persons to interview with historic knowledge of specific sites and 2) lack of access to inspect specific properties. The lack of interview and limitations of site-specific property access presents a data gap; however, the review of existing historical information reduces the importance of these data gaps.

Table 3.10-2. Identified Recognized Environment Condition Sites with Moderate to High Risk Rankings

Map Code[1]	Site Name	Address	Regulatory Listings[2]	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
Throat Segment						
5	Bortz Oil Company	1746 North Spring Street	CA HIST UST , CA BOND EXP. PLAN, CA HIST CORTESE, CA LUST, ENVIROSTOR	Upgradient	CREC/Moderate Risk Land Use Restrictions	cis-1,2-dichloroethylene and vinyl chloride in groundwater
16	Western Brassworks	1440 North Spring Street	CA LUST	Upgradient	HREC/Moderate Risk Groundwater Contamination	Total TPH -d in groundwater
17	Main Street Center/Main Street Oil Depot Los Angeles Department Water	1630 North Main Street	SEMS-ARCHIVE, CORRATS, 2020 COR ACTION, US FIN ASSUR, CA HIST CORTESE, CA LUST, CA UST, ENVIROSTOR	Upgradient	REC/High Risk Open Case	Solvents, non-petroleum hydrocarbons, PCB, arsenic, metals, and VOCs in soil and groundwater
22	Witco/Allied Kelite	1250 North Main Street	ENVIROSTOR	Upgradient	HREC/High Risk Historical Industrial Land Use and Groundwater Contamination	TPH, VOCs, SVOCs, PAH, PCBs, and metals in the groundwater
25	Blossom Plaza	900 N. Broadway	ENVIROSTOR	Upgradient	HREC/Moderate Risk Active cleanup site	TPH and VOCs in soil gas, vadose zone and groundwater
31	William Mead Homes	1300 Cardinal Street	CA HIST UST, CA Cortese, ENVIROSTOR	Upgradient	REC/High Risk Historical Industrial Land Use, Potential for Residual Soil/Groundwater Contamination, Land Use Restrictions	TPH, VOCs, SVOCs, PAHs, PCBs, metals in groundwater
36	The California Endowment	1000 N. Alameda Street	CA LUST	Crossgradient	HREC/Moderate Risk	Petroleum, hydrocarbons, VOCs, and chlorinated solvents in groundwater
38	Fansteel CA Drop Forge	1033 Alhambra Avenue	CA HIST CORTESE, CA LUST	Crossgradient	HREC/Moderate Risk	Petroleum hydrocarbons due to active business practices

Table 3.10-2. Identified Recognized Environment Condition Sites with Moderate to High Risk Rankings

Map Code[1]	Site Name	Address	Regulatory Listings[2]	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
40	BNSF Mission Tower Site	1430 Bolero Lane	SLIC, ENF	Upgradient	HREC/High Risk Historical Industrial Land Use, Potential for Residual Soil/Groundwater Contamination	TPH, VOCs, SVOCs, PAHs, PCBs, metals in groundwater
43	Los Angeles County Men's Central Jail/Sheriff's Department	429 and 441 Bauchet Street	CA HIST CORTESE, LUST (2), CA UST	Downgradient	HREC/Moderate Risk	Potential residual TPH-d contamination in the groundwater
45	Van Der Horst Corporation	496 Bauchet Street	SEMS, LIENS 2	Upgradient	REC/High Risk	Residual TPH-Dx contamination in groundwater
46	Bauchet Partners / So. CA Gas Company	490 Bauchet Street	SEMS-ARCHIVE, PRP, ENVIROSTOR	Upgradient	REC/Moderate Risk	PCE, TCE and dicyclo-pentadiene in groundwater
48	U.S. Postal Service Terminal Annex	900 N. Alameda Street	CA LUST	Upgradient	HREC/High Risk	Residual TPHs, VOCs, and chlorinated solvents in groundwater
49	Chevron Station	901 N. Alameda Street	CA LUST, CA UST	Upgradient	HREC/Moderate Risk	TPH, groundwater contamination
75	Metro Division 30/LACMTA	900 Lyon Street	CA LUST, CA UST	Crossgradient	REC/High Risk Open Status	Petroleum releases in the soil and groundwater
Concourse Segment						
66	Former Aliso Sector – Denny's Site	530 E. Ramirez Street	ENVIROSTOR	Upgradient	CREC/High Risk Land Use Restrictions associated w/ former Aliso MGP site.	TPH, VOCs, cyanide, PAHs, and heavy metals in soil, soil vapor, and groundwater
67	So. CAL Gas/Former Aliso/ LA PD Central Garage	555 E. Ramirez Street	CA HIST CORTESE , CA LUST, CA UST, ENVIROSTOR	Upgradient	REC/High Risk Open Case	TPH, VOCs, cyanide, PAHs, and heavy metals in soil, soil vapor, and groundwater

Table 3.10-2. Identified Recognized Environment Condition Sites with Moderate to High Risk Rankings

Map Code[1]	Site Name	Address	Regulatory Listings[2]	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
71	Los Angeles to Pasadena Metro Blue Line Construction Author (SL204EG2409)	None listed	CA SLIC	Upgradient	HREC/High Risk Accumulation of Diesel and Petroleum, Potential soil Vapor	Diesel and petroleum, and potential soil vapor
73	So. CA Gas / Former Aliso MGP	600 Cesar Chavez Avenue	CA Cortese	Downgradient	REC/High Risk Open-Inactive Case	TPH, VOCs, cyanide, PAHs and heavy metals in soil, soil vapor, and groundwater
74	Mendoza Service, Inc.	866 E. Caesar Chavez Avenue	CA HIST CORTESE, CA LUST	Upgradient	HREC/Moderate Risk Timeframe of Reported Leak and Closure	TPH in soil and groundwater
76	Union Station	800 N. Alameda Street	SEMS-ARCHIVE	Crossgradient	HREC/High Risk Potential Soil Vapor	TPH-impacted soil was re-used on the property, and soil vapor
84	Southern CA Regional Rail Authority Track Extension (Keller Yard) Santa Fe/Macy Street	720 Keller Street Macy Street/Former Aliso Street/ Keller Street	ENVIROSTOR FINDS, ECHO, CA DEED, CA VCP, ENVIROSTOR	Crossgradient	CREC/High Risk Land Use Restrictions	TPH-Dx and Gx, VOCs, SVOCs, PAHs, PCBs, and metals in groundwater
Run-Through Segment						
55	Caltrans – Commercial	501 E. Commercial Street	CA HIST CORTESE	Upgradient	REC/High Risk Historical Industrial Land Uses, Open Cleanup Program Site	TPH, VOCs, SVOCs, PAHs, PCBs, metals in soil and groundwater
56	Vacant Lot	510 E. Commercial Street	None Listed	Upgradient	HREC/High Risk Historical Land Uses	TPH, VOCs, cyanide, PAHs and heavy metals in soil, soil vapor, and groundwater
57	PBR Realty, LLC/Caltrans District 7)	531 E. Commercial Street	CA LUST, CA SLIC	Upgradient	REC/High Risk Historical Land Uses, Open-Inactive LUST Case	TPH, VOCs, SVOCs, PAHs, PCBs, metals in soil and groundwater

Table 3.10-2. Identified Recognized Environment Condition Sites with Moderate to High Risk Rankings

Map Code[1]	Site Name	Address	Regulatory Listings[2]	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
58	Friedman Bag Company, Inc.	801 E. Commercial Street and 706 Ducommun Street	CA HIST CORTESE, CA LUST	Upgradient	HREC/Moderate Risk Historical Land Use, Potential for Residual Soil/Groundwater Contamination	Residual soil and groundwater contamination
59	A&H Greenfield Sheet Metal/ Viertel's Police Impound Garage	830 E. Commercial Street/540 Center Street	SEMS-ARCHIVE	Upgradient	REC/High Risk Potential for Residual Metals in Soil	TPH, VOCs, SVOCs, PAHs, PCB, metals, and other MGP chemicals in the soil and groundwater
60	Los Angeles County MTA c/o Environmental Services Department	840 Commercial Street	None Listed	Upgradient	HREC/High Risk Historical Land Use, Potential for Residual Soil/Groundwater Contamination.	TPH, VOCs, SVOCs, PAHs, PCBs, metals in soil and groundwater
61	Mobil #11 and #18	520 N. Alameda Street	CA HIST CORTESE , CA LUST (2), CA UST	Crossgradient	HREC/High Risk	TPH in soil and groundwater
63	Los Angeles County Metro Transportation Authority Manley Oil	410 Center Street	CA DEED, ENVIROSTORCA VCP(2) ENVIROSTOR	Crossgradient	CREC/High Risk Land Use Restrictions	TPH, VOCs, cyanide, PAHs and heavy metals in soil, soil vapor, and groundwater
64	National Cold Storage Company	820 E. Jackson Street	CA VCP, ENVIROSTOR	Downgradient	CREC/High Risk Land Use Restrictions	TPH, VOCs, cyanide, PAHs, and heavy metals in soil, soil vapor, and groundwater. Gas vent located on site
70	Unocal, Conoco Phillips Center Street Terminal/ S & P Company	501 S. Center Street / 706 Commercial Street	CA FID UST	Upgradient	REC/High Risk Open Inactive Case	Petroleum hydrocarbons, PAHs, and VOCs
102	Butterfield Sun Chemical Corp.	590 S. Santa Fe Avenue	CA HIST UST, CA HIST CORTESE, ENVIROSTOR CA LUST	Crossgradient	REC/High Risk Active Site, Distance to Project	Metals, PAHs, TPH, VOCs in soil and soil vapor

Table 3.10-2. Identified Recognized Environment Condition Sites with Moderate to High Risk Rankings

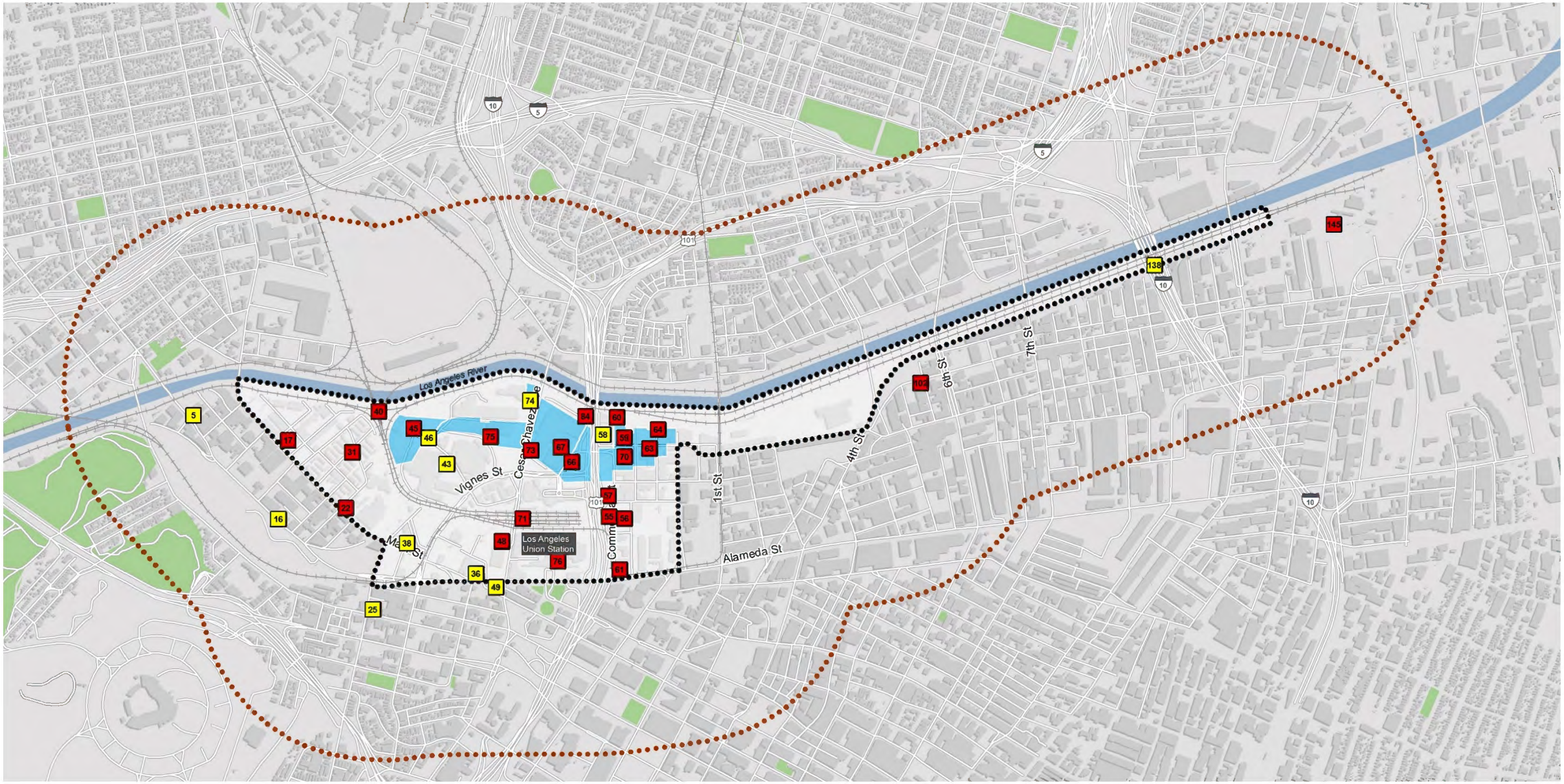
Map Code[1]	Site Name	Address	Regulatory Listings[2]	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
138	Auto Dismantling	2425 Enterprise Street	None listed	Crossgradient	REC/Moderate Risk	Metals in the soil
145	Crown Coach Site	2429 E. Washington Blvd.	US BROWNFIELDS	Crossgradient	REC/Moderate Risk Active Case	VOCs, TCE, and PCE in the groundwater and soil vapor

Notes:

[1] ***This map code corresponds to Figure 3.10-2***

[2] ***Complete acronym list is included in the Link US Phase I ESA (Appendix M of this EIR).***

Figure 3.10-2. Location of Recognized Environmental Condition Sites with Moderate to High Risk Rankings



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Historic Research

The objective of reviewing historical use information is to develop a history of previous land uses in the vicinity of the project study area and to assess these uses for potential hazardous materials effects that may affect the project. The following sources were referenced as part of this research:

- *Sanborn Fire Insurance Maps* – Fire insurance maps are produced by private fire insurance companies to indicate uses of the project study area on specific dates. Fire insurance maps were requested from Environmental Database Record, the copyright holder for the Sanborn map collection. The following years were reviewed: 1888, 1894, 1906, 1920, 1950, 1953, 1954, 1957, 1960, 1964, 1965, 1968, and 1970.
- *Historical Aerial Photographs* – Historical aerial photographs are beneficial because they allow for the review of features of properties near the project study area over a long period of time. The following years were reviewed: 1923, 1928, 1938, 1947, 1948, 1952, 1964, 1965, 1976, 1977, 1979, 1981, 1983, 1989, 1994, 2002, 2005, 2009, 2010, and 2012.
- *City Directory* – Directory listings from select years between 1906 and 1995 were reviewed.

During the mid-nineteenth century, the project study area and general vicinity consisted mainly of vineyards and included some of the largest wine producers in California. By the late nineteenth century, citrus crops outnumbered grapes as the primary agricultural product. Railroads and manufacturing land uses increased, initially to serve the shipping needs of the citrus industry, and later to support the rapidly increasing population. Prior to 1876, the only railroads traveling through Los Angeles were local railroads.

By the early 1900s, Los Angeles became a transportation hub, and the construction of railroad depots, rail yards, warehouses, and other associated structures to serve the railroad industry dominated the formerly agricultural landscape. Additional development of the downtown area in the early 1900s brought various industrial and manufacturing uses to the area, and products generated in the area included machinery, furniture, clothing, automobile parts, and rubber. Following World War II, the transportation needs of the industrial and manufacturing land uses in the area began to shift away from the railroad and instead to trucking, and as a result, facility operators began to focus on outlying areas where larger parcels could be purchased for the construction of manufacturing plants.

The former Aliso Street Manufactured Gas Plant (MGP) operated from the late nineteenth to mid-twentieth centuries in the eastern portion of the project study area. Following its closure, contaminated soil and groundwater were documented to have affected a widespread area, including most of the project study area. Remedial investigations and site cleanup activities were initiated in the 1990s, with the implementation of a groundwater monitoring program and the removal of contaminated soil from selected locations within the site. Contaminants include petroleum hydrocarbons, VOCs, cyanide, PAHs, and heavy metals.

Site Reconnaissance

Generally, subsurface electrical and other utilities, including transformers, were noted throughout the project study area. The surrounding area is highly industrialized, with commercial, industrial, and governmental buildings and facilities (e.g., jail, police impound storage lot). The project study area has multiple recycling-type facilities. The railroad ROW contained oil staining throughout, with the majority considered to be a *de minimis* condition; however, some areas that were inaccessible during the site reconnaissance may have actionable staining. One site, an auto dismantling business (located beneath I-10), was noted during the site reconnaissance to have the potential for metals contamination.

Environmental Liens and Activity Use Limitations

Considering the historical land uses in the area, several properties have land use restrictions. The following seven sites were identified in the Phase I ESA with land use restrictions:

- Former Aliso Street Property – 718 Commercial Street
- A&H Greenfield Sheet Metal/Viertel's Police – 830 Commercial Street
- Bortz Oil Company – 1746 Spring Street
- William Mead Homes – 1300 Cardinal Street
- Los Angeles County Metro Transportation Authority/Manley Oil – 410 Center Street
- Former Aliso Sector, Denny's Site – 530 Ramirez Street
- SCRRA Track Extension – 710-720 Keller Street

In general, these properties have had access and use restrictions imposed upon them as a result of contamination by the former Aliso Street MGP. The land use covenants (LUC) restrict land uses for these properties that would expose sensitive receptors, such as children, or result in higher risk to human health, such as growing food crops on contaminated land. The LUCs also require notification and coordination with the DTSC prior to any ground-disturbing work, such as removal of pavement, site grading, excavation, or drilling.

Oil Seeps and Gas Fields

The City of Los Angeles has active oil and gas fields throughout the area. Two oil fields are located in the vicinity of the project study area. As shown on Figure 3.10-3, the Union Station Oil Field is located south of US-101 and the Los Angeles Oil Field is located approximately 0.5 mile northwest of the project study area. Naturally-occurring oil seeps have been documented at various locations throughout the vicinity of the project study area.

Oil seeps were reported along both sides of the Los Angeles River during the concrete lining of the river channel in 1940. Oil seeps were found along the Los Angeles River between US-101 and Cesar Chavez Avenue, and crude oil and gases were found in alluvial deposits along Mission Street (Tetra Tech 2003).

The potential exists for naturally-occurring oil and gas seeps to be encountered during construction activities.

Oil and gas seeps are natural springs where liquid and gaseous hydrocarbons arrive at the ground surface. Oil and gas seeps are fed by natural underground accumulations of oil and natural gas. Petroleum that leaks to the Earth's surface is typically in the form of a tar-like substance called asphaltum. The lighter components of the oil are lost to evaporation and the remaining heavier oil is oxidized and degraded by bacteria until it becomes sticky and black. In addition to the health hazards associated with encountering volatile hydrocarbons during excavation, oil fields may produce hydrogen sulfide, which is highly toxic and poses a particular hazard to drillers and construction workers.

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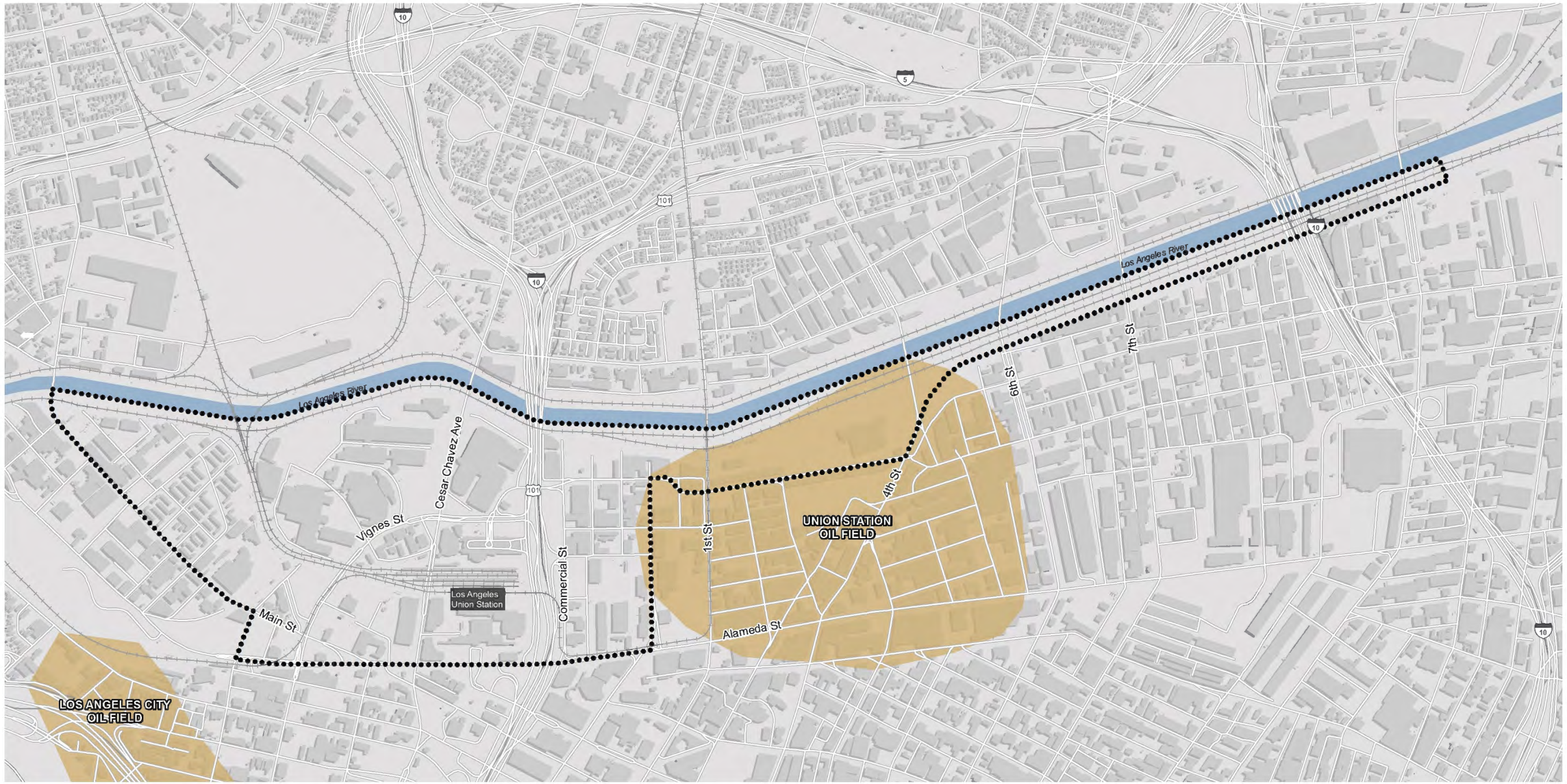
Figure 3.10-3. Oil Fields and Methane Areas



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As depicted on Figure 3.10-4, there are no active oil or gas wells located within the project study area. The nearest wells not depicted within a known oil or gas field include the following:

- Southern California Rapid Transit Distribution plugged oil and gas well, designated as "Metrorail Unknown 1" (unique, permanent, numeric identifier (American Petroleum Institute 03725060), was located on a private property east of Center Street, between Commercial Street (to the north) and Ducommun Street (to the south). The well was listed as a dry hole that was abandoned in December 1988. A Report of Well Abandonment was issued on January 18, 1989.
- F.F. Hoard oil and gas well (American Petroleum Institute 03706277) was located within the Los Angeles River, north of US-101. This well was listed as inactive, buried, and idle.
- Chevron U.S.A., Inc., oil and gas well, designated "Miller Corehole 1" (American Petroleum Institute 03720503), was located approximately 500 feet northeast of the LAUS, within the loop area north of US-101. The well was listed as plugged and abandoned. A Report of Well Abandonment was issued December 2, 1968.

Soil Vapor Migration

Volatile chemicals in the subsurface, whether in soil or groundwater, can migrate upward through the soil and enter into buildings, causing unacceptable chemical exposure for building occupants. Soil vapor, the gas that exists within the pore spaces of sediments, has the potential to carry volatile contaminants an appreciable distance from their source. A vapor encroachment condition is said to exist when volatile contaminant vapors are present in the vadose zone below a target property. Naturally-occurring methane may also accumulate in soil vapor near oil fields and oil wells.

The City of Los Angeles Bureau of Engineering has defined Methane Zones and Methane Buffer Zones around known oil fields and wells (County of Los Angeles 2004). These areas have developmental regulations required by the City of Los Angeles pertaining to ventilation and methane gas detection systems, depending on the designation category under the City of Los Angeles Building Code.

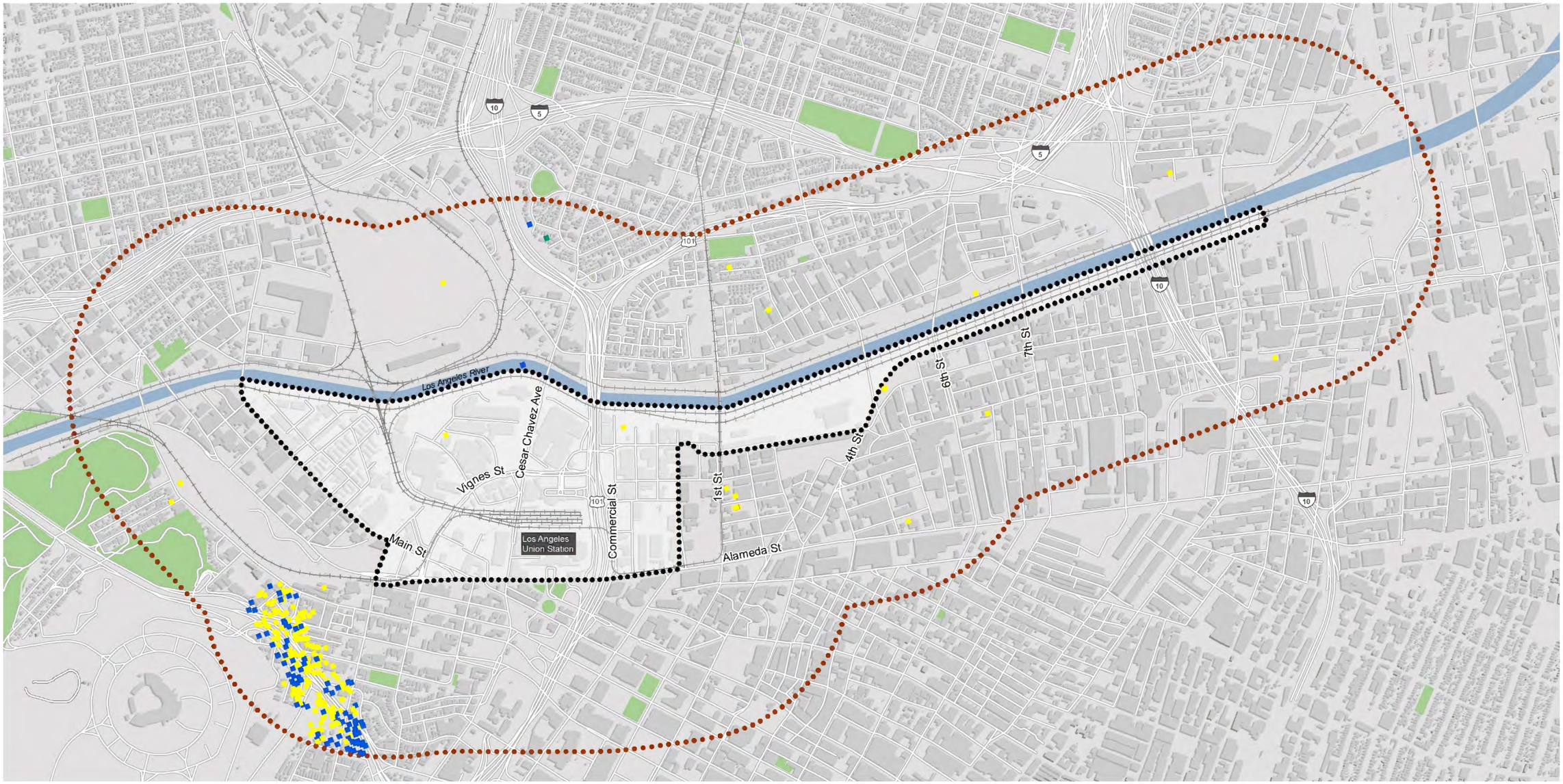
Asbestos and Lead

According to the *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR), the project study area is not located within a region in the county identified as containing serpentine and ultramafic rock; however, older buildings have the potential to contain asbestos and/or lead. As previously stated in the Phase I ESA historic research section, the area has been developed into commercial and industrial uses from the turn of the twentieth century. Asbestos is designated as a hazardous substance when the fibers have the potential to come in contact with air because the fibers are small enough to lodge in the lung tissue and cause health problems. The presence of asbestos-containing materials (ACM) in existing buildings poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air, which can occur during activities such as renovation or demolition of structures made with ACMs (e.g., insulation), are regulated in accordance with Section 112 of the Federal Clean Air Act (FCAA). Based on the age (e.g., pre-1970s) of many of the buildings that border

the project study area, it is possible that these buildings were constructed when ACMs and lead-based paints (LBP) were readily used in exterior coatings.

Human exposure to lead has been determined by U.S. EPA and OSHA to be an adverse health risk, particularly to young children. Demolition of structures containing LBP requires specific remediation activities regulated by federal, state, and local laws.

Figure 3.10-4. Oil and Gas Wells



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3.10.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts relative to hazards and hazardous materials would be considered significant if the project would:

A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school

D. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create an adverse hazard to the public or the environment

E. Result in a safety hazard for people residing or working in the project area (for projects located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport)

F. Result in a safety hazard for people residing or working in the project area (for projects within the vicinity of a private airstrip)

G. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

H. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project:

E and F. Hazards from Proximity to Airports – The project study area is not located within 2 miles of a public airport or public use airport. The surrounding area does contain rooftop heliports on surrounding high-rise buildings. The nearest heliports to the project footprint are located on the Metro Headquarters Building, One Gateway Plaza, and at the County Twin Towers Correctional Facility, 450 Bauchet Street. During construction, crane operations would be required similar to construction of other facilities in Downtown Los Angeles. The operations of the project would be consistent with the current operating conditions of the existing heliports in the area and any proposed heliports to be constructed in the future. The project would not impact the heliport operations. No impact is identified for this issue area.

H. *Hazards from Wildland Fires* – The nearest state responsibility area very high fire hazard severity zone is located to the west in the Santa Monica Mountains (CAL Fire 2007) and the nearest local responsibility area very high fire hazard severity zone is located west of the project study area, adjacent to the Los Angeles Dodger Stadium (CAL Fire 2011). Considering the highly developed and urban nature of the project study area, the potential risk of loss, injury, or death involving wildland fires is considered low. No impact is identified for this issue area.

Impact Analysis

THRESHOLD 3.10-A	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Direct Impacts – Construction

Transport, Use, and Disposal of Hazardous Materials

Construction during the interim, full build-out, and full build-out with HSR conditions would involve the handling, storage, transport, and disposal of hazardous materials. During construction, the use of hazardous materials and substances would be required and hazardous wastes would be generated during operation of construction equipment. Hazardous materials would include, but are not limited to: vehicle fuels, asphalt/concrete, lubricants, epoxy resins, drilling fluids, and paints. The use of these materials, including their routine transport and disposal, carries the potential for an accidental release into the local environment.

Equipment fueling would likely occur using temporary aboveground storage tanks at specified staging and laydown areas. Other potentially hazardous materials used in smaller quantities (e.g., paints, asphalt, etc.) would be stored using specialized containment, such as sheds or trailers. If a spill of these materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment, depending on the magnitude of the spill and relative hazard of the material released. Although typical construction management practices limit and often eliminate the risk of such accidental releases, the extent and duration of project construction presents a possible risk to the environment, through the routine transport of hazardous materials.

Transport, Use, and Disposal of Contaminated Soil and Groundwater

In addition to the use of construction-related hazardous materials, contaminated soil and groundwater are also expected to be encountered during soil excavations and dewatering activities, which would require specialized handling, treatment, and eventual off-site transport. As depicted on Figure 3.10-2, multiple RECs exist within the project study area. For this reason, excavation, handling, transport, and disposal must be conducted by a licensed hazardous waste transporter, per California Code of Regulations (CCR) Title 22, Division 4.5 regulations. Depending on the contaminant and concentrations encountered, contaminated soils would be disposed at an approved facility in accordance with all local, state, and federal laws and applicable regulations. The handling of such materials would occur during short-term construction activities and would be subject to federal (40 CFR 239-282), state (22 CCR 4.5), and local

health and safety requirements (those specified by Metro, railroad operators, or property owners on a case-by-case basis). Typical requirements include temporary storage best management practices, containment in closed containers, characterization of waste material for disposal, and disposal at facilities that are equipped and licensed to handle waste with specified characteristics.

Potential hazards generated by the routine transport, use, and disposal of hazardous materials, contaminated soils, and/or contaminated groundwater during construction is considered a significant impact, if not adequately managed. Mitigation Measure HAZ-1 (described in Section 3.10.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

The project would involve an increase in the number of trains arriving and departing LAUS, although operational activities and practices involving routine transport, use, and storage of potentially hazardous materials would remain similar to existing conditions. Future operations at LAUS would involve routine transport of hazardous materials and wastes, such as gasoline, brake fluids, and coolants, although heavy maintenance activities would continue off site at existing maintenance facilities, such as Metrolink's CMF (or Taylor Facility) located north of LAUS and the Amtrak maintenance facility located south of LAUS.

These facilities already in operation would continue to provide for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials. Based on the existing local regulatory framework, impacts are considered less than significant.

Indirect Impacts

Implementation of the project would facilitate an increase in the number of train movements beginning as early as 2026. The project would also facilitate the initiation of HSR service as early as 2033. Considering LAUS is limited to passenger operations, the potential for increased freight movements and increased hazardous materials transport is beyond Metro's authority and subject to private railway carriers. Impacts are considered less than significant.

THRESHOLD 3.10-B	Create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment

Direct Impacts – Construction

Recognized Environmental Condition Sites

The project study area contains a total of 35 REC sites (14 RECs, 16 HRECs, and 5 CRECs) (Table 3.10-2). RECs in the project study area are listed on various databases for two main reasons. First, because they contain documented hazardous material contamination such as gasoline or diesel underground storage tanks (UST), or removed LUSTs. Secondarily, several REC sites are listed based on historical land uses, such as the former Aliso Street MGP, which resulted in localized contaminated soil and groundwater. The

former Aliso Street MGP is listed multiple times associated with an individual site. However, the entire footprint of the site (as illustrated on Figure 3.10-2) is considered to be a REC, and is considered to be a high risk. The close proximity of the project footprint to these existing RECs could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater). This is considered a significant impact.

Soil Vapor Migration

The project study area is also located in proximity to two oil fields; the Union Station Oil Field, located south of US-101 and the Los Angeles Oil Field, located approximately 0.5 miles to the northwest of LAUS. Based on this proximity, naturally-occurring oil seeps and the accumulation of oil and methane gas also have the potential to occur within the project footprint. Construction of subterranean structures could encounter soils contaminated with petroleum and petroleum products, which could release volatile contaminant vapors during excavations or tunneling. This is considered a significant impact.

Asbestos and Lead

Based on the age (e.g., pre-1970s) of many of the buildings within the area, it is possible that these buildings were constructed when ACMs and LBPs were readily used in exterior coatings. Human exposure to lead has been determined by U.S. EPA and OSHA to be an adverse health risk, particularly to young children. Demolition of structures containing LBP requires specific remediation activities regulated by federal (40 CFR 745), state (17 CCR 35001-36100), and local laws. The accidental release of ACMs or lead into the environment is considered a significant impact.

As described above, an accidental release of hazardous materials could pose a hazard both to construction employees, the public, and the environment, depending on the magnitude and relative hazard of the material released. Although typical construction management practices limit the potential for such accidental releases, these practices do not eliminate their risk. Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10.6) are proposed to reduce impacts related to the release of hazardous materials to a level less than significant:

- Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-4, and HAZ-5 would reduce the potential for a release of hazardous materials during construction.
- Mitigation Measures HAZ-6 and HAZ-7 would reduce potential risks related to oil seeps, methane gas, and volatile contaminant vapors during construction.
- Mitigation Measure HAZ-8 would reduce potential risks related to asbestos, LBPs, and other material falling under the Universal Waste requirement.

Direct Impacts – Operations

Future operations at LAUS would involve the use of hazardous materials and wastes, such as gasoline, brake fluids, and coolants that could be subject to accidental releases. The handling of such materials would be subject to federal (40 CFR 239-282), state (22 CCR 4.5), and local health and safety requirements (those

specified by Metro, railroad operators, or property owners on a case-by-case basis). In general, they require that these materials not be released to the environment or disposed of as general refuse. Collection in proper containers and disposal at approved facilities are required.

Metro would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. These permits would require preparation of a Hazardous Materials Business Plan (HMBP), per California's Health and Safety Code, that would include provisions for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials. Given that the operations would be similar to existing conditions and the HMBP would be subject to approval by the applicable regulatory agency, impacts are considered less than significant.

Indirect Impacts

Implementation of the project would facilitate an increase in the number of regional/intercity train movements as early as 2026. The project would also accommodate future HSR service. Considering LAUS is limited to passenger operations, the potential for additional freight movements and increased hazardous materials release is beyond the scope of Metro's authority. Impacts are considered less than significant.

THRESHOLD 3.10-C	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school

Direct Impacts – Construction

Ann Street Elementary School and Felicitas and Gonzalo Mendez Senior High School are located within 0.25 mile of the project footprint. During construction, there would be use of commercially available hazardous materials such as gasoline, brake fluids, coolants, and paints. Standard equipment maintenance and good housekeeping practices during construction would minimize the risk of any release; however, if any release of these substances did occur, releases are anticipated to be localized and unlikely to pose a risk to the two educational institutions within a 0.25 mile of the project, mainly due to distance from proposed construction areas.

Demolition of existing structures and the existing railroad track infrastructure would require the operation of multiple construction vehicles within the project footprint over the construction duration. Based on the health risk assessment conducted for the project, the diesel particulate matter (DPM) emissions associated with the short-term construction activities would not result in an increased cancer risk exceed the SCAQMD's 10-in-1 million threshold at any school within 0.25 mile of the project (see Section 3.5, Air Quality and Global Climate Change). Therefore, impacts are considered less than significant.

Direct Impacts – Operations

An indicator of the project's regional operational impact is the net influence on emissions in the project study area and the region, relative to the emissions for the same year under the no project scenario. Rail emissions were estimated for the project based on daily passenger rail operations, fuel consumption, travel distance, idling time, and DPM emission factor. Each of these factors is discussed in detail in

Section 3.5, Air Quality and Global Climate Change, of this EIR, including the 2040 peak cancer risks at 13 locations within the project study area. The cancer risks at the residential land uses were calculated using a 30-year exposure while the school and office uses were calculated using 9- and 25-year exposures, respectively. The project-related increase in cancer risk would not exceed the SCAQMD's threshold of 10 in 1 million. As a result, impacts are considered less than significant.

Indirect Impacts

Construction of the project would involve the transport and disposal of soil or other media contaminated with hazardous materials. This would be an indirect impact through the accidental release of these hazardous materials to nearby schools. The accidental release of ACMs or lead into the environment would also represent a risk. Although compliance with existing laws and regulations regarding transport and disposal of hazardous materials would minimize potential risks, this is considered a significant impact. Mitigation Measures HAZ1 through HAZ-8 (described in Section 3.10.6) are proposed to reduce impacts to a level less than significant:

- Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-4, and HAZ-5 would reduce the potential for a release of hazardous materials during construction.
- Mitigation Measures HAZ-6 and HAZ-7 would reduce potential risks related to oil seeps, methane gas, and volatile contaminant vapors during construction.
- Mitigation Measure HAZ-8 would reduce potential risks related to asbestos, LBPs, and other material falling under the Universal Waste requirement.

THRESHOLD 3.10-D	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would create an adverse hazard to the public or the environment

Direct Impacts – Construction

Recognized Environmental Condition Sites

As shown in Table 3.10-2, 35 REC sites (14 RECs, 16 HRECs, and 5 CRECs) have been identified with a Moderate to High risk ranking because they have the potential to affect the environment as a result of excavation activities on acquired parcels where project-related construction activities would occur. Some of the parcels identified in Table 3.10-2 would either be acquired or used for temporary construction activities and staging where no ground disturbance would occur. The close proximity of these existing RECs to project-related construction activities would carry the potential for encountering contaminated soil and/or groundwater. Construction activities could also cause the migration of contaminants through changes in groundwater flow. Table 3.10-2 lists the locations of these RECs relative to each segment of the project study area that may be affected by pre-existing contamination. This is considered a significant impact. Mitigation Measure HAZ-2 (described in Section 3.10.6) is proposed to reduce impacts to a level less than significant.

Land Use Covenants

As previously indicated, considering the historical land uses in the area, several properties also have land use restrictions associated with them. The following seven sites were identified in the Phase I ESA with land use restrictions:

- Former Aliso Street Property – 718 Commercial Street (No Map Code)
- A&H Greenfield Sheet Metal/Viertel's Police – 830 Commercial Street (Map Code 59)
- Bortz Oil Company – 1746 Spring Street (Map Code 5)
- William Mead Homes – 1300 Cardinal Street (Map Code 31)
- Metro/Manley Oil – 410 Center Street (Map Code 63)
- Former Aliso Sector, Denny's Site – 530 Ramirez Street (Map Code 66)
- SCCRA Track Extension – 710-720 Keller Street (Map Code 84)

The project (e.g., railroad ROW) would not conflict with the LUC(s); however, these sites have deed restrictions that include soil management requirements. Based on the uncertainties regarding the level of clean up or remediation on the land use restricted sites, there is potential to encounter undocumented sources of contamination. This is considered a significant impact. A Phase II ESA is proposed as part of Mitigation Measure HAZ-2 (described in Section 3.10.6). Mitigation Measure HAZ-3 (described in Section 3.10.6) would require a general construction soil management plan, which would include general provisions for how soils would be managed throughout the project study area for the duration of construction, providing a method that is consistently protective of public and worker health and safety. In addition, Mitigation Measure HAZ-4 (described in Section 3.10.6) would require Metro to prepare parcel-specific soil management plans that include specific provisions for how soils would be managed for a given individual property.

Mitigation Measures HAZ-2 through HAZ-6 (described in Section 3.10.6) would reduce impacts to a level less than significant.

Direct Impacts – Operations

After construction is complete and the project is operational, the identified REC sites would not be disturbed and, therefore, would not require remediation or coordination with the governing agency. Impacts are considered less than significant.

Indirect Impacts

Prior to construction, any REC sites located within or adjacent to the project study area identified as a Moderate or High risk would be further analyzed in a Phase II ESA (Mitigation Measure HAZ-2). However, the REC sites adjacent to or in the vicinity of the project could be indirectly affected during construction. In the event hazardous materials migrate into the project study area while construction is occurring, there would be an indirect impact resulting from project construction. Although compliance with federal, state,

and local regulations would reduce these indirect impacts, this is considered a significant impact. Mitigation Measure HAZ-6 (described in Section 3.10.6) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.10-E	Impair implementation of an adopted emergency response plan or emergency evacuation plan

Direct Impacts– Construction

The project is located within an urbanized area with numerous roadways. The project could impact the following roadways: the El Monte Busway, US-101, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, Temple Street, Banning Street, First Street, Alameda Street, Main Street, Garey Street, Vignes Street, and Center Street. Based on a review of disaster route maps for the Los Angeles County Operational Area (County of Los Angeles 2008a) and as shown on Figure 3.10-1, the following designated disaster routes are within the project study area:

- Cesar Chavez Avenue
- Alameda Street
- Fourth Street
- US-101
- I-10

Construction activities in the areas of these streets, especially US-101, could interfere with emergency response and access. As described in Section 3.3, Transportation and Traffic, construction activities would generate additional traffic on US-101 and result in temporary closure of portions of US-101. US-101 would be closed temporarily at night (10:00 PM to 6:00 AM) in one direction at a time during construction of the bridge superstructure. These night closures are expected to last up to 20 consecutive days. The southbound ramps at Commercial Street would also be partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off ramps. Any disruption to an evacuation route is considered a significant impact. Mitigation Measure TR-1 (as described in Section 3.3, Transportation and Traffic) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

After construction is complete and the project is operational, no changes would be made to the identified evacuation routes. As previously discussed, under 2031 and 2040 with project conditions, minimal project-related increase delays are expected at intersections within the traffic study area. Internal roadway reconfiguration and associated modifications to fire lanes and access roads would not significantly impact emergency access, primarily because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained from Patsaouras Transit Plaza, which would provide emergency and fire lane access to the eastern side of the station. Any, or all,

modifications made would be coordinated and approved by the Fire Marshal to verify the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the identified evacuation routes as identified by the City. Based on these considerations, impacts are considered less than significant.

Indirect Impacts

The project would operate in accordance with applicable agency requirements for passenger rail operations. Impacts are considered less than significant.

3.10.6 Mitigation Measures

The following mitigation measures are proposed to reduce significant impacts related to hazards and hazardous materials.

HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP): Prior to construction, an HMMP shall be prepared by Metro that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the project footprint, and include, but not be limited to, the following:

- A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200)
- A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120)
- Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38)
    - A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910)
- Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200)
- Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120)

HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA): Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the project footprint that would be affected by excavation. Phase II activities shall consist of:

- Collection of soil, groundwater, and soil vapor samples from borings, for geologic analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the project area.
- Laboratory analysis of samples for contaminants of concern, which vary by location, but may include: VOCs, PAHs, total petroleum hydrocarbons (TPH), and CCR Title 22 metals.

A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA findings. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in environmental site assessments and evaluation of contaminated sites.

HAZ-3 Prepare a General Construction Soil Management Plan: Prior to construction, Metro shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the project footprint for the duration of construction. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan:

- General worker health and safety procedures
- Dust control
- Management of soil stockpiles
- Traffic control
- Stormwater erosion control using BMPs

HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP): Prior to construction, Metro shall prepare parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. The nature and extent of contamination varies widely across the project footprint, and the parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following:

- Soil disposal protocols
- Protocols governing the discovery of unknown contaminants
- Management of soil on properties within the project footprint with LUCs or known contaminants

Prior to construction on individual properties with LUCs or known contaminants, a parcel-specific HASPs shall also be prepared for submittal and approval by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASPs provisions shall also be implemented:

- Training requirements for site workers who may be handling contaminated material
- Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property
- Mitigation and monitoring measures that are protective of site worker and public health and safety

Prior to construction, Metro shall coordinate proposed soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the project, and each of the contaminated sites.

HAZ-5 LUC Sites and Coordination with the DTSC: Prior to construction on properties with a LUC, Metro shall coordinate with the DTSC regarding any plans specified in HAZ-4, construction activities, and/or public outreach activities needed to verify that construction activities on properties with LUCs would be managed in a manner protective of public health.

HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered: Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials and/or abandoned oil wells encountered during the construction process.

HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations: Prior to final design, Metro shall verify that the design of infrastructure improvements located within Methane Buffer Zones (as defined by Los Angeles Bureau of Engineering) comply with the City of Los Angeles Building Code regulations set forth in Ordinances 175790 and 180619. The ordinances require evaluation of methane hazards and mitigation of a methane hazard, if one exists, depending on the severity of the hazard.

HAZ-8 Pre-Demolition Investigation: Prior to the demolition of any structures constructed prior to the 1970s, a survey shall be conducted for the presence of hazardous building materials, such as ACBs, LBCs, and other materials falling under the Universal Waste requirements. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California, and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.

TR-1 Prepare a Construction Traffic Management Plan (described in Section 3.3, Transportation and Traffic)

3.10.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measures HAZ-1 through HAZ-8, significant impacts related to hazards and hazardous materials would be reduced to a level of less than significant.

3.11 Utilities/Service Systems and Energy Conservation

3.11.1 Introduction

This section provides an evaluation of the proposed project in relation to public utilities and service systems, including water supply, delivery, treatment facilities, drainage systems, wastewater collection, treatment, disposal facilities, solid waste disposal, electrical lines, and energy demand/conservation within the project study area.

3.11.2 Regulatory Framework

Table 3.11-1 identifies and summarizes federal, state, and local laws, regulations, and plans relative to public utilities and energy.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
State	
AB 1007, Alternative Fuels Plan	AB 1007 (Pavley, Chapter 371, Statutes of 2005) requires the California Energy Commission to prepare a state plan to increase the use of alternative fuels in California (Alternative Fuels Plan). The Alternative Fuels Plan, approved by the California Energy Commission on November 2, 2007, aims to clean the state's air, diversify fuel sources, and protect the state from oil spikes that affect prices, the economy, and jobs. The Alternative Fuels Plan focuses on transportation fuels and alternative fuels in particular but recognizes other components of the transportation system, including advanced vehicle technology and efficiency improvements in conventional vehicles. Additionally, the plan indicates that significant efforts are needed to reduce VMT by all Californians through more effective land use and transportation planning and greater mass movement of people and goods.
CCR, Title 24, Part 6, Energy Efficiency Standards for Residential and Nonresidential Buildings	CCR Title 24, Part 6 establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to the building envelope, mechanical systems (e.g., heating/ventilation/air conditioning and water heating systems), indoor and outdoor lighting, and illuminated signs. The standards are enforced through the local building permit process.
CCR, Title 11, Green Building Standards Code	Local jurisdictions have to implement CALGreen or their local C&D ordinance, policy, or directive, whichever is more stringent. Local mandates adopted prior to January 1, 2011, may not reflect the CALGreen requirements.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
California Energy Commission	The California Energy Commission is responsible for forecasting future energy needs for the state, among other things. SB 1389 (Chapter 568, Statutes of 2002) requires the California Energy Commission to prepare a biennial Integrated Energy Policy Report assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report also provides policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies.
California Local C&D Diversion Programs and Initiatives	Local Government C&D Guide SB 1374 seeks to assist jurisdictions with diverting their C&D material with a primary focus on CalRecycle developing and adopting a model construction and demolition diversion ordinance for voluntary use by California jurisdictions. The model ordinance was adopted March 16, 2004.
EO S-3-05	EO S-3-05 was enacted in June 2005. The order sets specific GHG emission reduction targets for the state and gives the Transportation and Housing Agency responsibility to help meet the targets. The EO envisions reduced VMT and increased vehicle fuel efficiency as major factors in achieving GHG emission reductions.
SB 610	SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified WSA, except as otherwise specified. "Project" means any of the following: • A proposed residential development of more than 500 dwelling units • A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space • A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space • A proposed hotel or motel, or both, having more than 500 rooms • A proposed industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land or having more than 650,000 square feet of floor area • A mixed-use project that includes one or more of the projects specified in this subdivision • A project that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling unit project
EO B-29-15	EO B-29-15 passed January 17, 2014. It mandates the SWRCB to impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016. Water reductions are measured as compared with 2013 levels. Areas with high per capita water usage should achieve proportionally greater reductions than those areas with lower per capita water usage. The EO additionally directs the California Department of Water Resources to work with local agencies to collectively replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Diversion Rule AB 341	Under commercial recycling law (Chapter 476, Statutes of 2011), AB 341 directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The final regulation was approved by the Office of Administrative Law May 7, 2012. AB 341 declared a state policy goal that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020.
Integrated Waste Management Act AB 939	AB 939 mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. CIWMB oversees a disposal reporting system and facility and program planning. On January 1, 2010, all CIWMB duties and responsibilities, with the Department of Conservation Division of Recycling, transferred to the new CalRecycle, which is under the jurisdiction of the Natural Resources Agency.
Solid Waste Reuse and Recycling Act	The Solid Waste Reuse and Recycling Act of 1991 was enacted to assist local jurisdictions with accomplishing the goals of AB 939. In accordance with AB 2176, any development project that has submitted an application for a building permit must include adequate, accessible areas for the collection and loading of recyclable materials. In addition, the areas to be utilized must be adequate in capacity, number, and distribution to serve the project. Moreover, the collection areas are to be located as close to existing exterior refuse collection areas as possible.
Local	
City of Los Angeles General Plan	The City of Los Angeles General Plan Conservation Element includes goals and policies for recycling and diversion of solid waste to ensure compliance with the California Integrated Waste Management Act (AB 939), the California Solid Waste Reuse and Recycling Act, and the Solid Waste Diversion Rule (AB 341). The City of Los Angeles General Plan Framework also broadly discusses the City's water supply, storage, and delivery infrastructure.
ADSP	The ADSP, Ordinance No. 171,139 provides project-specific regulatory criteria for water use and solid waste disposal.
Los Angeles C&D Waste Recycling Ordinance	The Los Angeles City Council approved Council File 09-3029 March 5, 2010, that pertains to a Citywide C&D Waste Recycling Ordinance. This ordinance requires all mixed C&D waste generated within City limits be taken to a City-certified C&D waste processors. In addition, all haulers and contractors responsible for handling C&D waste must obtain a Private Waste Hauler Permit from LASAN prior to construction. C&D waste can only be taken to City-certified C&D processing facilities.
Los Angeles Green Building Standards Code	Approved in April 2008, and updated in 2014, this code enforces the Green Building Program that focuses on five key areas: site location, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Non-residential projects at or above 50,000 square feet are required to meet LEED® Certification standards.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
LADWP UWMP	The 2015 UWMP is the City's master plan for reliable water supply and resources management. The 5-year plan outlines existing and planned sources of water, forecasts water demand, and identifies conservation efforts to reduce water demand. It also identifies activities to develop alternative sources of water, assesses the reliability and vulnerability of the water supply, and provides a water shortage contingency analysis.
City of Los Angeles Stormwater LID Ordinance (Ordinance #181899)	In November 2011, the City adopted the Stormwater LID Ordinance (Ordinance #181899) to amend and expand on the existing SUSMP requirements by incorporating LID practices and principles and expanding the applicable development categories. The LID Ordinance requires stormwater mitigation for a larger number of development and redevelopment categories than was previously required under SUSMP. All development and redevelopment projects that create, add, or replace 500 square feet or more of impervious area need to comply with the LID Ordinance. If applicable to the LID Ordinance, project applicants would also be required to prepare an LID plan.
Updated Stormwater LID Ordinance (Ordinance #183833)	On August 25, 2015, the City adopted an updated Stormwater LID Ordinance (Ordinance #183833) to amend and expand on the LID requirements and eliminated the requirement for a SUSMP. Subsequently, on May 9, 2016, the City of Los Angeles, Board of Public Works adopted an update to the LID Manual (formally retitled as Planning and Land Development Handbook for LID, Part B Planning Activities, 5th Edition, May 9, 2016) as authorized by Section 64.72 of the Los Angeles Municipal Code and as approved by Ordinance #183833. The LID Manual was made publicly available via the City website in October 2016. The updated LID Manual removed the requirement for a SUSMP and a site mitigation plan. Now, the only the required LID document is the LID plan.
City of Los Angeles Municipal Code	Stormwater discharge is regulated under Chapter VI Public Works and Property, Article 4.4 – Stormwater and Urban Runoff Pollution Control of the City of Los Angeles Municipal Code. Under Article 4.4, discharge of non-stormwater is permissible only when connection to the storm drain system is made in accordance with a valid city permit, approved construction plan, or a NPDES permit and/or NOI. In addition, projects within the City are required to comply with the requirements of the CGP and the Municipal NPDES Permit, which includes preparation of a SWPPP and implementation of construction and post-construction BMPs.
Metro Energy and Resource Report	Metro produces an annual sustainability report to summarize the agency's continual efforts in achieving higher sustainability performance through the implementation of planning, construction, operations, and maintenance activities.
Metro Water Use, Conservation Policy and Water Action Plan	Metro has implemented many strategies to reduce water use in their operations and in their construction projects. In 2009, the Water Use and Conservation Policy was adopted to ensure the most cost-effective and efficient use of potable water resources at all the Metro facilities and operating divisions. The Water Action Plan was developed in 2010 to implement this policy.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Solid Waste Integrated Resources Plan	Adopted in April 2015, the City of Los Angeles, under the jurisdiction of SWIRP, addresses long-range management needs through 2030. The plan identified various policies, programs, and facilities that would be needed to reach the City's goal of 90 percent landfill diversion by 2025.

Notes:
AB=Assembly Bill; ADSP= Alameda District Specific Plan; BMP=best management practice; C&D= construction and demolition; CALGreen=California Green Building Standards Code; CCR=California Code of Regulations; CEQA=California Environmental Quality Act; CGP=Construction General Permit; CIWMB= California Integrated Waste Management Board; EO=Executive Order; GHG=greenhouse gas; LASAN= Los Angeles Sanitation; LEED=Leadership in Energy and Environmental Design®; LID=low impact development; NOI=Notice of Intent; NPDES=National Pollutant Discharge Elimination System; SB=Senate Bill; SUSMP=Standard Urban Stormwater Mitigation Plan; SWIRP=Solid Waste Integrated Resources Plan; SWPPP=Stormwater Pollution Prevention Plan; SWRCB=State Water Resources Control Board; UWMP= Urban Water Management Plan; VMT=vehicle miles traveled; WSA=water supply assessment

3.11.3 Methods for Evaluating Environmental Impacts

Utility companies with infrastructure located within or adjacent to the project study area were identified. Utilities and service systems considered as part of the analysis included above and underground electrical lines; storm drains; gas lines; water supply lines; and the type, size, and location of the infrastructure potentially impacted by the project.

To determine potential impacts on energy resources during construction, fuel and energy usage was considered based on construction data utilized for the air quality evaluation (Section 3.5, Air Quality and Global Climate Change), which included equipment type, fuel type, estimated hours of use, and costs as model inputs. Energy demands associated with the project operations were quantified based on sources of energy required for operation (e.g., electricity).

3.11.4 Existing Conditions

Water Service

Water service for LAUS and the surrounding area is served by LADWP, which covers a 473-square mile area servicing a total of 4 million residents, including 681,000 active service connections. LADWP infrastructure includes 119 tanks and reservoirs, 96 pump stations, 9 ammoniation stations, 25 chlorination stations, 325 regular stations, 113 system pressure zones, 7,337 miles of distribution main pipelines, and a total storage capacity of 315,245 acre-feet (AF) (LADWP 2016). In 2015, LADWP's water supplies totaled 513,540 AF with 10 percent being delivered from the Los Angeles Aqueduct, 17 percent from local groundwater, 71 percent from MWD, and 2 percent from recycled water (LADWP 2015). In the future, total supplies are projected to increase to 642,400 AF in 2020 and 709,500 AF in 2040.

LADWP provides 4 million City residents with approximately 167 billion gallons of water. The average residential, commercial, and industrial usage of water is 113 gallons per day (LADWP 2016). The LADWP has an adopted Urban Water Management Plan (UWMP) (LADWP 2015) and other long-term water

management plans that ensure adequate water supplies are available to the City. The Mayor's Executive Directive No. 5 and the *Sustainable City Plan* set goals to reduce potable water use by 25 percent by 2035. With its current water supplies, planned future water conservation, and planned future water supplies, LADWP would be able to reliably provide water to its customers through the 25-year period covered by its 2015 UWMP, including for single dry year conditions (LADWP 2015). Water demands are projected to total 485,600[1] AF in 2020 and 565,600[1] AF in 2040 (LADWP 2015).

Major water lines in the project study area are described below:

- Segment 1: Throat Segment – There is a 12-inch water line in Vignes Street and 12-inch and 16-inch water lines in Cesar Chavez Avenue.
- Segment 2: Concourse Segment – There is a 36-inch water line located in Alameda Street with a 20-inch water line that tees off to serve LAUS and the rail yard platform area.
- Segment 3: Run-Through Segment – There is a combination of 8-inch and 12-inch water lines that traverse the Commercial Street Corridor. There is also an 8-inch water line located in Center Street.

No recycled water infrastructure is located within the project study area.

Drainage Systems

Drainage infrastructure is addressed in Section 3.8, Hydrology and Water Quality.

Sanitary Sewer Service and Facilities

Los Angeles Sanitation (LASAN) is responsible for operating and maintaining the wastewater collection and treatment systems. LASAN maintains over 6,117 miles of sewer lines and 49 pumping plants in addition to 4 water reclamation plants that treat 580 million gallons per day (mgd) of wastewater (LASAN 2016a). The treated wastewater is generally discharged into a receiving water body, evaporated and/or percolated into the ground, or used for irrigation of farmland and landscaping.

LASAN's clean water program consists of the Hyperion Service Area and the Terminal Island Service Area (treating the Los Angeles Harbor Area). The project study area is located within the Silver Lake/Central City North Basin of the Hyperion system, which includes two upstream water reclamation plants: DC Tillman in the San Fernando Valley and the Los Angeles Glendale. Both of these plants produce recycled water used for landscaping and industrial purposes, as well as supplement the Los Angeles River to support the local habitat and other beneficial uses. All sanitary sewer flows in the project study area discharge to the Hyperion Treatment Plant, which is located at 12000 Vista del Mar, Playa del Rey, California. The Hyperion Treatment

[1] Assumes inclusion of conservation measures required to meet water use reduction goals set in the Sustainable City plan (2015). These estimates assume the implementation of the San Fernando Groundwater Basin clean-up and reduce per capita potable water use by 20 percent.

Plant is designed to treat 450 mgd in dry months, peak wet weather flows of up to 800 mgd (LASAN 2016b), and averages 275 mgd (LASAN 2016b).

Major sewer lines located in the project study area are described below:

- Segment 1: Throat Segment – There is a 27-inch sewer line in Cesar Chavez Avenue.
- Segment 2: Concourse Segment – There are 30-inch and 16-inch sewer lines in Alameda Street with an 8-inch private sewer line connection that serves LAUS. There is an 8-inch sewer line serving the Metro Gateway Building off of Vignes Street. There is also an 8-inch sewer line that crosses the railroad at College Street and turns south toward Vignes Street running adjacent to the railroad property line.
- Segment 3: Run-Through Segment – There is an 8-inch sanitary sewer line in Commercial Street, along with a 6-inch sanitary sewer line in Center Street.

Solid Waste

LASAN divides the City into six waste collection districts or "wastesheds" named West Valley, East Valley, Western, North Central, South Los Angeles, and Harbor. The project study area is located in the North Central wasteshed, which is reported to have a total disposal of 787,000 tons in 2010, including 57 percent from commercial, 23 percent from residential curbside, 18 percent from multifamily, and 2 percent from construction and demolition (C&D) (HDR 2014a.).

LASAN operates the Central Los Angeles Recycling and Transfer Station located 2.4 miles south of the project study area, which has a permitted capacity of 4,025 tons per day. Non-recyclable materials are transferred to either the Scholl Canyon Landfill or Burbank Landfill Site No. 3. The Scholl Canyon Landfill is a Class III landfill that has a remaining capacity of 9,900,000 cubic yards, with an expected closure year of 2030. The Burbank Landfill Site No. 3 is also a Class III landfill that has a remaining capacity of 5,933,365 cubic yards, with an expected closure date of 2053 (CalRecycle 2016).

As of 2016, the diversion rate[2] for Los Angeles County was at 65 percent (County of Los Angeles 2017). The City's Solid Waste Integrated Resource Program (SWIRP), most commonly known as the City's Zero Waste Plan, provides a long-term plan through 2030 for the City's solid waste programs, policies, and environmental infrastructure. SWIRP proposes an approach for the City to achieve a goal of 90 percent diversion by 2025. These targeted diversion rates would be implemented through an enhancement of existing policies and programs, implementation of new policies and programs, and the development of future facilities to meet the City's recycling and solid waste infrastructure needs over a 20-year planning period.

[2] Solid waste diversion is defined as the movement of solid waste to facilities other than landfills.

Electricity

The project study area is served by LADWP for electricity power. LADWP supplies more than 26 million megawatt (MW) hours of electricity per year for the City's 1.4 million residential and business customers (LADWP n.d.).

Energy

California is the nation's third-largest state with many energy-intensive industries; however, it has one of the lowest per capita total energy consumption levels in the country (Energy Information Administration 2016). State mandates to increase energy efficiency and implement alternative technologies has restrained growth in energy demand. Travel dominates the transportation sector, affecting energy usage, even though the state leads the nation in alternatively fueled vehicles. Conversely, residential energy use per person in California is lower than in every other state, except Hawaii. The California Energy Commission utilizes electricity demand models for energy consumption by end use.

Based on demand models for LADWP, railroad transportation used 20.0 gigawatt hours in 2010, 24.3 gigawatt hours in 2016, and is projected to use 25.6 gigawatt hours in 2024. The growth rate from 2010 to 2016 increased 4.30 percent, while the projected growth rate between 2016 and 2024 is estimated to only increase 1.235 percent (California Energy Commission 2016).

Natural Gas

Natural gas is the most consumed energy source in California. Natural gas-fired power plants generate about three-fifths of California's electricity (Energy Information Administration 2016). The area has a historical land use associated with gas manufacturing and oil production that was active in the early 1900s because of the presence of oil reserves in the area. Given the historical land uses in the area, there is a high potential to encounter abandoned gas and/or oil lines. As identified in Section 3.10, Hazards and Hazardous Materials, three abandoned or inactive oil or gas wells are located within the project study area.

3.11.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts on utilities and service systems would be considered significant if the project would:

A. Exceed wastewater treatment requirements of the applicable RWQCB

B. Require or result in the construction of new water of wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

C. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

D. Have sufficient water supplies available to serve the project from existing entitlements and resources, or identify if new or expanded entitlements are needed

E. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

G. Comply with federal, state, and local statutes and regulations related to solid waste

Appendix F: Energy Conservation

Section 15126.4(a)(1) of the CEQA Guidelines states that an EIR will describe feasible measures that could minimize significant adverse impacts, including, where relevant, inefficient and unnecessary consumption of energy.

CEQA Guidelines, Appendix F, Energy Conservation provides guidance for EIRs regarding potential energy impacts of the project, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy. For the purpose of determining the significance of an impact in this EIR, implementation of the project would have significant energy impacts if it would:

H. Require or result in the construction of new gas or electric facilities or expansion of existing facilities

I. Have insufficient gas or electricity supplies available to serve the project

J. Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency

Impact Analysis

THRESHOLDS 3.11-A AND 3.11-E	A. Exceed wastewater treatment requirements of the applicable RWQCB E. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Direct Impacts – Construction

Construction activities associated with the proposed project would not result in new substantial discharges of wastewater to the City's sanitary sewer collection system. However, if groundwater dewatering is required, discharge to the City's sanitary sewer collection system may be the only option for disposal. As provided in Section 3.10, Hazards and Hazardous Materials, shallow groundwater in the project study area is likely to be impacted by one or more sources of contaminations associated with legacy land uses and associated pollutants. As a result, pretreatment of any dewatering effluent may be required prior to discharging into the City's sanitary sewer collection system.

The City's Industrial Waste Management Division administers the City's U.S. EPA-approved pretreatment program in accordance with the City's Industrial Waste Control Ordinance. The requirements of the City's ordinance are contingent on the quantity of discharge and types of contaminants involved. On

June 6, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES No. CAG994004) (Dewatering Permit). This permit covers discharge of groundwater and non-stormwater construction dewatering discharges in the Los Angeles and Ventura region. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit. Compliance with these permits would minimize the potential for any discharges that could otherwise exceed the City's existing wastewater treatment requirements. Impacts are considered less than significant.

Direct Impacts – Operations

The proposed new passenger concourse would include up to 600,000 square feet dedicated for passenger circulation and waiting areas and passenger support functions. Of this total, up to 160,000 square feet would be allocated for transit-serving retail amenities, and approximately 30,000 square feet would be allocated for office/commercial uses. This level of development is anticipated within local planning documents and included in the maximum permitted floor area within the ADSP (for LAUS). Likewise, the wastewater generated by the project in the full build-out condition would be of domestic quality and, if required, would be subject to pretreatment requirements (e.g., fats, oils, and grease) per the City's Industrial Waste Control Ordinance. Furthermore, the Hyperion Treatment Plant is the closest treatment plant to the project. It is currently operating at an average of 275 mgd and is designed to treat 450 mgd in dry months and 800 mgd in peak wet weather flows. Therefore, adequate capacity exists in this facility to accommodate the project's increase in wastewater generation. Impacts are considered less than significant.

Indirect Impacts

No indirect impacts related to wastewater would occur with implementation of the project.

THRESHOLD 3.11-B	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Direct Impacts – Construction

During construction of each phase, water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. Project construction would require the use of locally available water supplies, which are distributed by LADWP. The project's water demand would be short-term and temporary and would not require the construction of new water facilties or expansion of existing facilities. Impacts are considered less than significant.

As provided in Section 3.12, Cultural Resources, construction of the project, including utility replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources. Some of these resources could be historically significant. Therefore, this is considered a

significant impact and would require mitigation. Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

The proposed project would continue to be serviced by existing water and wastewater facilities. The proposed project would result in an increased demand for water during operations associated with fire flow and domestic flow demands within the new passenger concourse and on the platforms. However, based on preliminary coordination with utility providers, there is sufficient water capacity to serve the additional water needs of the project. Therefore, no new water facilities or expansion of existing facilities would be needed. Impacts are considered less than significant.

The demand for wastewater services would also increase during operations. However, based on preliminary coordination with utility providers, the Hyperion Treatment Plant has adequate capacity to treat the project's wastewater. Therefore, the project would not require construction of any new wastewater treatment facilities or expansion of existing facilities. Impacts are considered less than significant.

Indirect Impacts

New development around LAUS in the future could indirectly impact water and sanitary sewer facilities in the project study area. However, new development would be subject to the City's entitlement process and would include coordination with LASAN, LABOE, and LADWP. Impacts are considered less than significant.

THRESHOLD 3.11-C	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Direct Impacts – Construction

Reconfiguration or realignment of the storm drains would be conducted in coordination with the LABOE. Where possible, existing storm drains would be protected-in-place through the use of casings, concrete blankets, or other industry-approved structural protection methods. A concrete slab is proposed to protect the Los Angeles County storm drain system near Mission Tower to avoid impacts on this facility. All work would occur within an urbanized area.

As provided in Section 3.12, Cultural Resources, construction of the project, including storm drain replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources. Some of these resources could be historically significant. Therefore, this is considered a significant impact and would require mitigation. Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Based on hydraulic modeling as summarized in Section 3.8, Hydrology and Water Quality, no change in the current pipeline sizing is required. Throughout operations, the proposed drainage system is designed

to function in accordance with the City of Los Angeles' storm drainage design standards and all other applicable standards for post-construction BMPs to avoid potential for significant impacts on the environment. Impacts are considered less than significant.

Indirect Impacts

New development around LAUS in the future could indirectly impact storm drain facilities in the project study area. However, new development would be subject to the City's entitlement process and include coordination with the LABOE. Therefore, impacts are considered less than significant.

THRESHOLD 3.11-D	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed

Direct Impacts – Construction

Construction of the project would require the use of locally available water supplies, which are distributed throughout the City by LADWP. During construction of each phase, water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. In the absence of recycled water supplies, potable water would be required for construction purposes. The average water use during construction is estimated at 63,000 gallons per day or 70.5 acre-feet per year (AFY) (HDR 2016c). Based on this anticipated water use and in the context of the supplies available to LADWP between 2018 and 2024 (up to 156,800 AFY), sufficient water supplies are expected to be available for construction of the project. Additionally, Metro would implement its General Management Water Use and Conservation Policy that outlines guidance for potable water during construction. Impacts are considered less than significant.

Direct Impacts – Operations

Throughout operation, potable water would be provided by LADWP, which supplies LAUS' existing water demands. With the completion of the new passenger concourse in the full build-out condition, new plumbing fixtures would include lavatories, drinking fountains, break room sinks, and service sinks. The total water demand from these uses is estimated to be up to 310 gpm or approximately 500 AFY in 2040 (HDR 2016d). Train washing operations would be conducted off site at a separate facility similar to existing conditions, and this type of water use is not included in this estimate.

To support the policies listed in Metro's Water Action Plan, the planning, design, and construction of the project would address minimum requirements for water conservation. Based on the projected water demand of 500 AFY in 2040, this total demand represents a small fraction of the total supplies available. Additionally, the project is consistent with existing and planned land uses (Section 3.2, Land Use and Planning) and would not alter projects contained in LADWP's UWMP (LADWP 2015). Likewise, the project would not produce demands that exceed the thresholds in SB 610 for a water supply assessment. For these reasons, the project would have sufficient water supplies available from existing LADWP entitlements and resources, and no new or expanded entitlements would be required. Impacts are considered less than significant.

Indirect Impacts

The water demand estimates include all direct and indirect water demands that would be required to implement the project, including the new passenger concourse. Water demand from new development that may occur within the project study area (separate from the project) would be subject to the requirements of SB 610 and considered at the time separate and individual entitlement applications are filed in the future. Impacts are considered less than significant.

THRESHOLDS 3.11-F AND 3.11-G	F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs G. Comply with federal, state, and local statutes and regulations related to solid waste

Direct Impacts – Construction

Construction of the project would generate construction waste from the removal of existing infrastructure, (e.g., roadways, trackwork, concrete, etc.). During construction, concrete, brick, asphalt, railway basalt, and other construction waste would be generated. As standard construction practice, the contractor would be required to segregate these materials prior to disposal at a certified recycling facility where materials would be properly recycled or reused, where appropriate. Additionally, the contractor would be required to adhere to federal, state, and local regulations for solid waste disposal, including those identified in the City's SWIRP.

During construction, the project contractor would be required to comply with SB 1374 and the Los Angeles C&D Waste Recycling Ordinance regarding concrete, asphalt, scrap metal, wood, and gypsum/wallboard. The Los Angeles C&D Waste Recycling Ordinance requires that all mixed C&D waste generated within the city limits be taken to City certified C&D waste processors (LASAN 2018). The project would be constructed in compliance with these regulations, and diversion strategies are expected to be implemented by the contractor during each phase of the project. Based on these considerations, impacts are considered less than significant.

Direct Impacts – Operations

The project would involve the construction of an up to 600,000-square foot passenger concourse that would include up to 160,000 square feet of transit-serving retail uses and approximately 30,000 square feet of office/commercial uses. In the full build-out condition, these additional land uses would increase solid waste generation at LAUS above existing conditions, which is located in LASAN's North Central wasteshed. The North Central wasteshed generates 787,000 tons of solid waste, which is transported to the Central Los Angeles Recycling and Transfer Station, Scholl Canyon Landfill, and Burbank Landfill Site No. 3 for recycling and/or disposal (CalRecycle 2016). Los Angeles County also utilizes an out-of-county disposal program that exports solid waste to surrounding counties where solid waste demands are lower. Given the negligible increase in solid waste attributable to the project, the available landfill capacity, and the existing out-of-county disposal program, impacts are considered less than significant.

All solid waste generated by the project would be recycled or disposed of in compliance with applicable federal, state, and local statutes and regulations. AB 939 mandates the reduction of waste disposal through integrated facility and program planning, and AB 341 mandates an increase in diversion rates to 75 percent by the year 2020. The City's SWIRP further increases the diversion rate goal beyond the AB 341 diversion rate to 90 percent by the year 2025. Given that the diversion requirements under AB 341 and SWIRP would apply to waste generated from the project because it is derived from within the City of Los Angeles, the targeted diversion rates would maintain compliance with federal, state, and local statutes and regulations related to solid waste. Impacts are considered less than significant.

Indirect Impacts

Implementation of the project is expected to increase the amount of patrons utilizing LAUS; however, the amount of solid waste generated from additional patronage would be considered negligible compared to the existing condition. New development in the future would also be subject to federal, state, and local statutes and regulations related to solid waste. Impacts are considered less than significant.

THRESHOLDS 3.11-H AND 3.11-I	H. Require or result in the construction of new gas or electric facilities or expansion of existing facilities I. Have insufficient gas or electricity supplies available to serve the project

Direct Impacts – Construction

Based upon preliminary coordination with utility providers, sufficient supplies of gas and electricity are available to construct the proposed project. Therefore, new facilities and expansion of existing facilities are not required to construct the project.

Existing utility services would be maintained throughout the construction of the project by relocating services into access roads and utility tunnels to protect the facility during construction and provide for future maintenance. Modifications to utility infrastructure would be limited to relocations; no additional lines or substations would be required to construct the proposed project.

Any disruptions of utility service would be temporary, and efforts would be made to avoid or minimize potential disruption of service to the maximum extent feasible. Coordination with LADWP would be required during final engineering design to avoid potential conflicts. Based on these considerations, impacts are considered less than significant.

Direct Impacts – Operations

Electricity transmission is provided to the project study area by LADWP via above and underground utility lines. Energy for the proposed project infrastructure would be required for the lighting, receptacles, heat and air conditioning, and miscellaneous power. Based on preliminary estimates, the project in the full build-out condition would require a maximum of 11,830 kilovolt (or 11.83 MW) of energy (HDR 2016e). Preliminary coordination with utility providers indicates that current supplies are sufficient for the project in the full build-out condition. Operations-related energy use would not require or result in the construction

of new gas or electric facilities or the expansion of existing facilities. Impacts are considered less than significant.

Indirect Impacts

The proposed project would not have any indirect impacts related to energy.

THRESHOLD 3.11-J	Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency

Direct Impacts – Construction

During construction, consumption of energy would occur in two general forms: fuel energy consumed by construction vehicles and equipment and bound energy used in the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Energy in the form of fuels used for construction vehicles and other equipment would be used during site excavation, grading, and all other construction-related activity. Such fuel energy use would be temporary and would not represent a significant, permanent, or unnecessary commitment to the use of energy, including non-renewable sources. To minimize energy consumption, the construction contractor would implement standard BMPs in accordance with Metro's Green Construction Policy. Starting in 2018, Metro's Green Construction Policy requires the use of bulk renewable diesel fuel on its construction projects. Renewable diesel is a petroleum-free substitute fuel for diesel engines. It is produced from 100 percent renewable and sustainable materials and is more efficient and cleaner burning than conventional petroleum (Metro 2018a). Metro's Green Construction Policy also requires the following BMPs (Metro 2018b):

- Maintain equipment according to manufacturers' specifications
- Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of 5 minutes when not in use
- Use electrical power in lieu of diesel power, where available

Standard BMPs would be implemented by the contractor so that non-renewable energy would not be consumed in a wasteful, inefficient, or unnecessary manner.

Energy sources for construction vehicles and equipment are not in short supply and use of construction equipment would not have a significant impact on the availability of these resources. Impacts are considered less than significant.

Direct Effects – Operations

Energy consumed at the new passenger concourse would be reduced through the use of sustainable design features and implementation of a variety of measures designed to reduce energy consumption. The project would be designed to comply with applicable mandatory provisions of the 2016 CALGreen Code, in accordance with the City of Los Angeles Green Building Code. The 2016 CALGreen Code also includes a

variety of measures for energy reduction, renewable energy, water usage, and construction waste disposal and recycling, such as providing areas for recycling paper and plastic. In addition, the new passenger concourse would be designed to comply with the Metro Energy and Sustainability policy and achieve at least a Leadership in Energy and Environmental Design (LEED®) Silver rating.

Proposed design features such as reflective roofing and skylights would assist in the reduction of energy demands. The sustainability framework of the new passenger concourse targets energy efficiency, water conservation, well-being, and site planning; ecology; and resource management. Given the sustainability initiatives that are planned to be incorporated into the proposed project, a negligible impact on energy resources is expected. Operations-related energy use would not require or result in the construction of new gas or electric facilities or expansion of existing facilities. Impacts are considered less than significant.

Indirect Impacts

The project would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial impact on energy resources. Energy demand for electricity in California over the past 14 years has been relatively flat and tempered by economic and demographic conditions, as well as continued energy efficiency efforts and new distributed generation (California Energy Commission 2016). Overall, Metro's rail propulsion power consumed 211 million-kW hours of electricity in 2014, a decrease of 8 percent over 2013 (Metro 2015c). The overall reduction in power demand despite relatively constant ridership may be attributed to lighting retrofits and the installation of the energy recovery systems. Overall, efficiency in terms of revenue hours per MW hour of rail propulsion power has continued on an upward trend over the past decade with an increase of 14 percent from 4.2/MW hour in 2013 to 4.7 hours per MW hour in 2014 (Metro 2015c). This trend is expected to continue in the future.

The improvement in rail/transit service and connectivity between the different modes of transportation would encourage more individuals to use public transit services, directly reducing the number of personal vehicles on the roads. As discussed in Section 3.3, Transportation and Traffic, and Section 3.5, Air Quality and Global Climate Change, project-related capacity enhancements would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel, thereby reducing the VMT in the area. This would reduce gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits. Impacts are considered less than significant.

3.11.6 Mitigation Measures

Implementation of the following mitigation measure is proposed to reduce impacts related to utilities/service systems and energy conservation.

HIST-5 Archaeological Site CA-LAN-1575/H – Preparation of a Cultural Resource Mitigation and Management Plan (CRMMP) (described in Section 3.12, Cultural Resources)

3.11.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources), significant impacts associated with encountering documented and undocumented cultural resources during utility replacement and/or relocation would be reduced to a level less than significant.

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3.12 Cultural Resources

This section provides an evaluation of the proposed project in relation to existing cultural, historical, tribal, and paleontological resources within the defined project study area. Potential impacts on cultural, historical, tribal, and paleontological resources as a result of the proposed project are considered in this section and, if necessary, mitigation is proposed in instances where significant impacts are identified.

The cultural resources information contained in this section is summarized from the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR). The paleontological resources information contained in this section is summarized from the *Link US Paleontological Identification Report and Evaluation Report* (Appendix O of this EIR).

3.12.1 Regulatory Framework

Table 3.12-1 identifies and summarizes applicable laws, regulations, and plans relative to cultural, historic, tribal, and paleontological resources.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Historical Resources

Law, Regulation, or Plan	Description
Federal	
48 CFR 44716 The Secretary of Interior's Standards and Guidelines for Archaeology and Historical Preservation	These standards, effective as of 1983, provide technical advice for archaeological and historic preservation practices. Their purpose is (1) to organize the information gathered about preservation activities; (2) to describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) to integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's culture heritage.
36 CFR 67 The Secretary of the Interior's Standards for Rehabilitation	These standards were established by the Secretary of the Interior in 1986 as a way to homogenize rehabilitation efforts of nationally significant historic properties and buildings. These standards pertain to actions involved in returning a property to a state of utility through repair or alteration. This allows for the preservation of historic and cultural values of the property, while giving it an efficient contemporary use.
36 CFR 68 The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings	The Standards for the Treatment of Historic Properties is a compilation of 34 guidelines to promote the responsible preservation of U.S. historic cultural resources. The standards specifically address preservation, rehabilitation, restoration, and reconstruction of historic materials. The standards are not intended to be the sole basis for decision making in regard to whether a historic property should be saved, but to provide consistency in conservation and restoration practices.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Historical Resources

Law, Regulation, or Plan	Description
State	
CRHR	The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens to identify the existing historical resources of the state and indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (California PRC Section 5024.1(a)). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP (PRC Section 5024.1(d)).
AB 4239	AB 4239 established the NAHC as the primary state government agency responsible for identifying and cataloging Native American cultural resources.
AB 52	In 2014, California governor Jerry Brown signed AB 52, which established an additional requirement under CEQA for consultation with Native American tribes regarding TCR. AB 52 requires that the CEQA lead agency notify any interested Native American tribes of a proposed project, only if those tribes have requested to be notified regarding the CEQA lead agency's projects. The CEQA lead agency must consult in good faith with participating California Native American Tribes prior to the release of the EIR. If a project has the potential to affect a TCR, the CEQA document must discuss whether there is a significant impact on a TCR and whether there are feasible alternatives or mitigation to avoid or substantially lessen impacts on the TCR. Consultation is finished when one of the following applies: (1) the parties agree to avoid or mitigate significant impacts on TCRs; or (2) the CEQA lead agency, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.
PRC 5097.5	This section provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of state or local authorities.
PRC 5097.97	This section states that no agency or party shall cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. No previously recorded Native American religious or ceremonial sites are documented within the project study area.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Historical Resources	
Law, Regulation, or Plan	**Description**
PRC 5097.98 (b) and (e)	This section requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the NAHC-identified MLDs to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reenter the remains elsewhere on the property in a location not subject to further disturbance.
PRC 65092	This section provides for notices of projects to be sent to California Native American tribes that are on the contact list maintained by the NAHC in the definition of "person" to whom notice of public hearings shall be sent by local governments.
California Health and Safety Code, Section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the County Coroner.
PRC 30244	This section requires reasonable mitigation for impacts on paleontological resources that occur as a result of development.
Local	
City Cultural Heritage Ordinance	In 1962, the Los Angeles City Council adopted the Cultural Heritage Ordinance, amended it in 2007, and again in 2018 (Sections 22.171 et. seq. of the Administrative Code). This ordinance created a CHC and designation criteria for HCM. The commission is comprised of five citizens who exhibit knowledge of Los Angeles history, culture, and architecture, who have been appointed by the mayor. Under this ordinance, this are no concepts of physical integrity or period of significance as is found with the NRHP and the CRHR; additionally, properties do not have to reach a minimum age requirement to be designated as Monuments. Per Section 22.171.14, no person, owner or other entity shall demolish, alter, rehabilitate, develop, construct, restore, remove, or change the appearance of any designated HCM without first having passed a permit clearance process for and been granted a Certificate of Appropriateness or Administrative Certificate of Appropriateness.
City of Los Angeles Conservation Element	The Conservation Element established the policy to continue to protect prehistoric, historic, and cultural sites and/or resources potentially affected by proposed land development, demolition, or property modification activities with the related objective to protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes. The City's guidelines for the protections of archaeological and paleontological resources can be found in Chapter II, Section 3 of the City of Los Angeles' General Plan Conservation Element; the protection of historic and cultural resources is found in Section 5.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Historical Resources

Law, Regulation, or Plan	Description
County of Los Angeles General Plan Conservation and Open Space Element	The County of Los Angeles General Plan Conservation and Open Space Element (1980) contains goals and policies regarding paleontological resources. This general plan is currently under revision and is expected to have more specific guidance regarding paleontological resources in the updated version. The Conservation and Open Space Element establishes the goals of preserving and protecting sites of historical, archaeological, scientific value, and defines the following policies relative to paleontological resources: • Protect cultural heritage resources, including historical, archaeological, paleontological, and geological sites • Encourage public use of cultural heritage sites consistent with the protection of these resources • Promote public awareness of cultural resources • Encourage private owners to protect cultural resources
ADSP	The ADSP includes policies regarding historic preservation requirements pertaining to the planning area. The plan also includes significance thresholds and mitigation measures for cultural resource topics.
SurveyLA	Los Angeles Historic Resources Survey is commonly known as SurveyLA. It is a comprehensive program to identify significant historic resources throughout the City of Los Angeles.
Los Angeles Municipal Code Section 91.106.4.5.1	The department shall not issue a building permit for demolition of a building or structure for which the original building permit was issued more than 45 years prior to the date of submittal of the application for demolition preinspection, or where information submitted with the application indicates that the building or structure is more than 45 years old, based on the date the application is submitted, without having first sending written notices by U.S. mail at least 30 days prior to issuance of the permit to the abutting property owners , the Council District Office, and the owners of all property across the street or alley when such property is intersected by a projection of the lot lines of the property at which the demolition will occur.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Historical Resources

Law, Regulation, or Plan	Description
CCNCP	This plan sets forth goals, objectives, policies, and implementation programs that pertain to the Central City North community plan area. Broader issues, goals, objectives, and policies, are provided by the Citywide General Plan Framework. The plan area is adjacent to Downtown Los Angeles and bounded by the Los Angeles River to the east, the City of Vernon to the south, Alameda Street, Cesar Chavez Avenue, Sunset Boulevard, and Marview Avenue to the west, and Stadium Way, Lilac Terrace, and North Broadway to the north.

Notes:
AB= Assembly Bill; ADSP= Alameda District Specific Plan; CCNCP= Central City North Community Plan; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CHC= Cultural Heritage Commission; CRHR= California Register of Historical Resources; EIR=environmental impact report; HCM=Historic-Cultural Monument; MLD= most likely descendant; NAHC= Native American Heritage Commission; NRHP= National Register of Historic Places; PRC=Public Resource Code; TCR= Tribal Cultural Resources; U.S.=United States

3.12.2 Historic and Cultural Background Summary

Cultural Setting Summary

In-depth cultural and historic contexts have been completed for the project study area and are included in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR). To provide context of the cultural resource richness and high sensitivity of the area, this summary briefly describes the different time periods and people who used and settled the area around LAUS. The project study area has a complex cultural background that begins with Native American occupation and use of the area going back at least 10,000 years.

Prehistoric Background

Several chronologies based on archaeological finds are used to divide different periods of prehistoric cultural habitation and development. The most-commonly used cultural chronology (Appendix N of this EIR) divides human occupation of Southern California into five broad periods: the PaleoIndian Period (10,000 years BP to 8000 BP), the Early Period or Millingstone Horizon (8000 BP to 3000 BP), the Middle Period or Intermediate Horizon (3000 BP to AD 1000), the Late Prehistoric Period (AD 1000 to 1770), and the Historic Period (AD 1770 to present).

Different patterns and types of material culture distinguish each of these periods. Large fluted or leaf-shaped projectile points from the PaleoIndian Period indicate a reliance on hunting large animals. Human diet probably included smaller game and harvested plants. Sites representing this period have been found mostly inland at prehistoric lakebeds (e.g., China Lake, Tulare Lake; Wallace 1955, 1978).

The Early Period or Millingstone Horizon was characterized by the widespread adoption of millingstones, including metates and manos used in the preparation of plant and seed-based foods. Subsistence on terrestrial game supplemented the diet of people during this time (Appendix N of this EIR). During the Middle Period or Intermediate Horizon, subsistence expanded to a greater diversity of plant and animal

foods. Tools used during this period included mortars and pestles likely indicating a new reliance on hard nut foods, such as acorns (Appendix N of this EIR).

During the Late Prehistoric Period, the Tongva (Gabrieleno), Acjachemen (Juaneño), and Payómkawichum (Luiseño) lived throughout much of the Southern California coastal area extending from present-day Southern Los Angeles County to northern San Diego County. Villages among these groups were permanent to semi-permanent, with seasonal camps. Among them was Yangna (also transliterated as Yaagna), a Tongva village south of present-day LAUS. At this time, trade networks linking the coast, Channel Islands, mountains, and inland valleys become more complex and significant in shaping cultural practices (Appendix N of this EIR).

Gabrielino Ancestors

The project study area is on lands that were once inhabited by the Tongva, also known as the Gabrielino. The Tongva come from a Uto-Aztecan (or Shoshonean) group that likely entered the Los Angeles Basin as recently as 1500 BP from the southern Great Basin or interior California deserts. However, it is also possible that they migrated in successive waves over a longer period of time beginning around 4000 BP. It has been proposed that the Uto-Aztecan speakers displaced local Hokan occupants of the southern coast (Appendix N of this EIR), as Hokan language speakers in the area are represented by the Chumash to the north and the Diegueño to the south. Much of the review of the Tongva presented here is based on William McCawley's book, The First Angelinos (Appendix N of this EIR).

The Tongva lived in an area of more than 1,500 square miles and included the watersheds of the Los Angeles River, San Gabriel River, Santa Ana River, and Rio Hondo, as well as the southern Channel Islands. There were at least 50 residential communities, or villages, each with 50 to 150 individuals. Each community consisted of one or more lineages associated with a permanent territory represented by a permanent central settlement, with associated hunting, fishing, gathering, and ritual areas. A typical settlement had a variety of structures used for daily living, recreation, and rituals. In the larger communities, the layout was a little more intricate, characterized by a ritualistic or sacred enclosure that was encircled by the residences of the chief and community leaders, around which were smaller homes of the rest of the community. Sweathouses, cemeteries, and clearings for dancing and playing were also common at larger settlements (Appendix N of this EIR).

Tongva subsistence was inclusive of many surrounding resources, including forest, water, and mountain animals. These included mule deer, pronghorn, rabbits, small rodents, freshwater and maritime fish and shellfish, sea mammals, snakes, lizards, insects, quail and mountain sheep. Botanical resources included native grass seeds, pine nuts, acorns, berries, and fresh greens and shoots. Food resources were managed by the chief, who was in charge of food reserves, and families were known to keep aside rations for times when resources were less abundant. A complex trade network among themselves and their neighbors made the Tongva among the most materially wealthy of California's native groups (Appendix N of this EIR).

The Tongva were artistic people who had many forms of cultural materials, including beads, baskets, bone and stone tools and weapons, shell ornaments, wooden bowls and paddles, and steatite ornament and

cooking vessels (Appendix N of this EIR). These items were also traded frequently, and with the Chumash, who often exchanged Olivella shell beads as currency for Tongva goods.

Many tribal accounts reported that a 60-foot-tall sycamore tree known as El Aliso was a place for important gatherings of tribal elders and traders of the Yangna community. The tree was located approximately 250 feet south-southeast of the southeast corner of LAUS. Masters (2012) identified the location as 150 feet northeast of the intersection formed by Commercial Street and Garey Street, south of US-101, now believed to be a raised island adjacent to a US-101 on-ramp.

Today, the Tongva continue their traditions in Southern California, with an approximate representation of 2,000 individuals. The project footprint is located north of the historically documented village of Yangna (or group of villages forming the village community of Yangna).

Historic Background

The Historic period begins with the expansion of Spanish exploration and settlement in California in the late 1700s. Critical turning points within this period were establishment of Mission San Gabriel (1771) and the Asistencia of Los Angeles (1784), Mexican Independence (1821), secularization of mission lands, the Mexican-American War (1846 to 1848), and American sovereignty in California. Like many other Native American groups, the settlement of Europeans in California brought many conflicts and disease, as the Spanish claimed the lands as their own, and, in the process, incorporated Native American groups into the mission system. As a result of this and subsequent historical events, including the takeover of indigenous territories under Mexican and American rule, as well as the displacement of Native populations, the Tongva people, along with other groups, saw their populations and cultural traditions drastically decimated.

Spanish Mexican Period (1781 to 1850)

Europeans first sailed up the coast of California in 1542 as part of a Spanish exploration expedition led by Captain Juan Rodriguez Cabrillo. Cabrillo sailed into San Pedro Harbor and called it “Bahía de los Fumos” (Bay of the Smokes) due to the Indian campfires he observed along the shores (Appendix N of this EIR). It is estimated that the Tongva people numbered approximately 5,000 individuals at this time, spread across hundreds of villages throughout the Los Angeles Basin and the Channel Islands, though the native population was as large as 10,000 (Appendix N of this EIR). Cabrillo reported passing by a large Tongva village on the west bank of the Los Angeles River, south of the current location of LAUS. This village is believed to be Yangna, one of the largest central villages of the Tongva people (Appendix N of this EIR)

Spain would not resume in-depth exploration and settlement of the region until over 200 years later, when Russian and French encroachment threatened Spain’s interests in the territories known as Alta California (Upper California). The return of Spanish presence in California was highlighted by the 1769 expedition led by Captain Gaspar de Portolá (Appendix N of this EIR). Shortly thereafter, Spain began to establish a system of pueblos, presidios, ranchos, and missions along the California coast to bolster Spanish settlement and political presence. The Spanish Franciscan missionaries, who headed north from their long-established presence in Baja California, established a system of 21 missions, including the nearby San Gabriel Mission, along El Camino Real, and incorporated much of the Native American population during the process,

leading to their decline and increasingly hostile relationships between the Europeans and the Native Americans. The name Gabrielino was given to Native Americans associated with Mission San Gabriel.

As part of this network of Spanish presence, the City of Los Angeles was established in 1781 with 11 families brought in from San Gabriel Mission. Following Mexican independence from Spanish rule in 1821, and the subsequent Mexican-American war that ended in 1848, present-day California came under the jurisdiction of the U.S. government. Over the decades, lands that were once a part of Yangna were divided up and sold off (Appendix N of this EIR).

In 1834, El Aliso (the giant sycamore tree discussed above) and the property upon which it stood were acquired by Jean-Louis Vignes, a French vineyard owner. In 1874, the Philadelphia Brew House (one of Los Angeles' first breweries) was built on the site of "El Aliso" but spared the tree. Rasmussen (2002) reported that El Aliso was subsequently cut down in either 1891 or 1892 for firewood and to make room for a brewery, which corresponds with the 1882 purchase of the Philadelphia Brew House by German immigrants Joseph Maier and George Zobelein who renamed the brewery Maier and Zobelein.

American Period (1850 to 1971)

The City of Los Angeles experienced extensive growth in the late nineteenth and early twentieth centuries, spurred on by an influx of new settlers looking to strike it rich during the Gold Rush, and the railroad and oil booms that followed. In 1850, the Los Angeles census counted two Chinese men among its population, both of whom were resident servants near Los Angeles Plaza. In 1851, Anglo-American settler Matthew Keller purchased the property at the current location of LAUS and developed the land as a vineyard (Appendix N of this EIR). Remains of Keller's sherry house were found during excavations for the MWD Headquarters (Appendix N of this EIR).

In the 1870s, residential lots were sold along Aliso Street by entrepreneurs like Thomas Keller. Initially purchased by upper-middle-class families for their private dwellings, by the 1880s, the area was changing into a blue-collar neighborhood with residences rented rather than owned by the residents. The location continued to evolve with houses converted into rooming homes or replaced by commercial and industrial establishments. "After the properties were purchased by the Industrial Land and Development Company in anticipation of the building of Union Station, it is probable they were patronized by laborers and workmen involved in its construction" (Appendix N of this EIR).

By 1900, the population of Los Angeles exceeded 100,000, which included not only American settlers from the east and descendants of Native Americans, Spanish and Mexican settlers from earlier centuries but immigrants from all over the world. By this time, Los Angeles had a fairly sizeable Chinese presence numbering approximately 600 people, mostly congregated within the boundaries of the current site of the LAUS (Appendix N of this EIR). Here, the Chinese set up restaurants, laundries, general goods stores, vegetable markets, and other establishments within a rapidly growing metropolis.

Twentieth Century Los Angeles, Chinatown, and Los Angeles Union Station

More than half of the Chinese population in 1880 lived along a narrow street called Negro Alley (Appendix N of this EIR), just south of Los Angeles Plaza, on the opposite side of Alameda Street from the current LAUS. Negro Alley was eventually renamed Los Angeles Street in 1887. The project study area (especially the area beneath the train yard) historically had a mixture of uses. A review of Sanborn maps from 1888 and 1906, and a list of businesses compiled by the Los Angeles Chief of Police in 1909 (Appendix N of this EIR) indicates that most buildings were domestic residences, in addition to the following business establishments: barber, butcher, opium den, clothing store, gambling house, drug store/apothecary, vegetable market, general goods store, restaurants, tailor shop, tin shop, lodging house, launderer, and a Chinese School (for children of Chinese descent). The area immediately surrounding the project study area, as depicted on a 1909 business directory map, shows numerous larger businesses ranging from breweries, stables, lumber, auto suppliers, oil well suppliers, packing, and several others all within a few blocks of the future site of LAUS.

Los Angeles had major traffic congestion issues even in the first part of the twentieth century. In the early 1920s, traffic was such a nuisance that there were dissertations written by engineering students at UCLA suggesting ways to improve commute times (Appendix N of this EIR). One exhaustive study completed in 1925 by Kelker, De Leuw, and Co., commissioned by the City of Los Angeles, recommended ways the city could accommodate Los Angeles' estimated 1,000,000 residents, preparing for the future needs of a city that was expected to reach more than 3,000,000.

Although most agreed that a union or central station was needed, there was heated debate over how to run an expanded rail system to and through the city. The basic problem was that heavy trains cannot go uphill easily, so engineers needed to build tracks so trains could "make the grade" by eliminating steep climbs. This was achieved by digging tunnels, digging trenches, raising tracks on fill, and elevating tracks on trestles. In 1926, a measure was placed on the ballot in Los Angeles presenting a choice between a network of elevated railways and the construction of a new train station. Should voters choose the latter, they would also vote on putting the station either at Los Angeles Plaza or across from it in Chinatown. The voters chose to build the train station by a wide margin, and opted for Chinatown as the location of the new station.

In 1933, the demolition of Chinatown began, making way for construction of LAUS throughout the 1930s. A "new" Chinatown, resulting from the displacement of the original Chinatown's residents and businesses, was formed west of Alameda Street and north of what is now Cesar Chavez Avenue. The first passenger train arrived at the station on May 7, 1939. Construction of LAUS required huge amounts of fill to elevate the train yard area to maintain track grade. Estimates vary regarding the depth of fill. It ranges from 1 to 3 feet in the southwest portion of the site to as much as 24 feet of fill under the track yard (Appendix N of this EIR, who estimates fill depths at 12 to 16 feet).

3.12.3 Methods for Evaluating Environmental Impacts

Cultural Resources

Determining Significance

The significance of a property is established when the NRHP criteria for evaluation are met (36 CFR 60.4). The NRHP criteria for evaluation are as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in a district, site, building, structure, and object that possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. Is associated with events that have made a significant contribution to the broad patterns of history
B. Is associated with the lives of persons significant in the past
C. Embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction
D. Has yielded, or may be likely to yield, information important in prehistory or history

If a particular resource meets one of these criteria, it is considered an historic property eligible for listing in the NRHP. If a resource has been determined eligible for or listed in the NRHP, it is automatically included in the California Register of Historic Resources (CRHR).

Compliance with CEQA

CEQA requires the lead agency to consider the impacts of a project on cultural resources. Two categories of cultural resources are specifically identified in the CEQA Guidelines; historical resources (Section 15064.5[b]), and unique archaeological sites (Section 15064.5[c] and PRC Section 21083.2). These two categories sometimes overlap where a "unique archaeological resource" also qualifies as an "historical resource." In such an instance, the more stringent rules for archaeological resources that are historical resources apply, as explained below. CEQA also requires the lead agency to consider the impacts of a project on Tribal Cultural Resources (TCR) (PRC Section 21074). CEQA and other California laws also set forth special rules for dealing with human remains that might be encountered during construction.

Cultural resources may be eligible for or listed in the CRHR if they have historical significance and integrity, and if they meet any of the following criteria:

1. Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage, or the U.S.
2. Are associated with the lives of persons important in our past

3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values
4. Yield, or may be likely to yield, information important in prehistory or history

The term "historical resources" will be used only for those properties that are eligible for or listed in the CRHR, were determined eligible by the State Historical Resources Commission (PRC 15064.5[a][1]), are included in a local register or identified as significant in a local survey meeting Office of Historic Preservation (OHP) standards (PRC 15064.5[2]), or a lead agency has determined that they meet the criteria for listing in the CRHR (PRC 15064.5[a][3] – [4]).

AB 52 added TCR to CEQA requiring the CEQA lead agency to consult with Native American tribes regarding TCR prior to the release of the EIR. A TCR is defined as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe; and is either:

- On, or eligible for, the CRHR or a local historic register
- The lead agency, "in its discretion and supported by substantial evidence" determines that the resource meets the register criteria

If a project has the potential to affect a TCR, the CEQA document must discuss whether there is a significant impact on a TCR and whether there are feasible alternatives or mitigation to avoid or substantially lessen impacts on the TCR. A project that may cause a substantial adverse change in the significance of a TCR is defined as a project that may have a significant effect on the environment.

Assessing Significant Impacts

A project that causes a substantial adverse change in the significance of an historical resource is a project that may have a significant impact under CEQA (PRC 15064.5[b]). A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of the historical resource would be materially impaired. The significance of a historical resource is materially impaired if a project demolishes or materially alters any qualities that justify the inclusion or eligibility for inclusion of a resource on the CRHR or inclusion of the resource on a local register.

Paleontological Resources

Based on the results of the geologic map review and literature and museum records searches for the project, the paleontological sensitivity of the geologic units within the research study area (RSA) for paleontology were ranked using Caltrans' tripartite scale, and an impact analysis was performed using available project-related engineering data and preliminary geotechnical investigations

Sensitivity Criteria

Caltrans' paleontological sensitivity scale comprises three rankings: High Potential, Low Potential, and No Potential. The criteria for each ranking, as stated in the Caltrans Standard Environmental Reference, Chapter 8, are as follows:

High Potential

This category includes rock units, which, based on previous studies, contain, or are likely to contain, significant vertebrate, significant invertebrate, or significant plant fossils. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than recent, including *Neotoma* (sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

Low Potential

This category includes sedimentary rock units that: 1) are potentially fossiliferous but have not yielded significant fossils in the past; 2) have not yet yielded fossils but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction starts, it is possible that new and unanticipated paleontological resources might be encountered. If the resource is determined to be significant, a monitoring and a mitigation plan are required.

No Potential

This category includes rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks, which are classified as having no potential for containing significant paleontological resources.

3.12.4 Existing Conditions

Project Study Area/Area of Potential Impacts

The project study area is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historical or tribal resources, if any such properties exist.

To determine whether an undertaking could affect historical or tribal resources, cultural resources (including archaeological, historical, and architectural properties) were inventoried and evaluated for listing in the CRHR.

For the purposes of identifying and assessing impacts on cultural, historical, tribal, and paleontological resources, three geographic areas within the overall boundary of the project study area were delineated (Figure 3.12-1; Appendix N and Appendix O of this EIR):

- The area of direct impacts (ADI), which encompasses the area where any ground-disturbing work for the proposed project would occur (including but not limited to excavation, grading, construction, demolition, utility relocations, and railroad track reconfiguration) that may directly impact resources (Figure 3.12-1).

- The area of indirect impacts (AII), which encompasses the ADI and any areas that may be subject to indirect impacts on resources, such as visual impacts, noise, vibration, or shadow. Additionally, it includes areas for temporary access and staging areas. If any portion of a parcel is included in the ADI, that entire parcel is included within the AII (Figure 3.12-1).

- The RSA for paleontological resources is the same as the ADI, described above.

The ADI takes into account the total depth of ground disturbance associated with construction of the proposed project (Table 3.12-2 and Figure 3.12-2).

Table 3.12-2. Preliminary Vertical Excavation Depths

Major Project Component	Related Ground Disturbance	Maximum Depth Associated with Ground Disturbance
Throat track reconstruction	Utility relocations	Up to 50 feet
	Track widening and retaining walls	Up to 20 feet
	Throat reconstruction (over-excavation only)	Up to 5 feet
	Vignes Street Bridge and Cesar Chavez Avenue Bridge supports	Up to 100 feet
	Drainage improvements (cistern)	Up to 20 feet
Elevated rail yard and concourse	Above-grade passenger concourse (support piers)	Up to 100 feet
	Utility relocations	Up to 50 feet
	Drainage improvements (cisterns)	Up to 20 feet
Run-through tracks	Support piers/bents	Up to 100 feet
	Utility relocations	Up to 20 feet
	Center Street Commercial Street lowering	Up to 10 feet
Loop track	Support piers/bents	Up to 100 feet
	Track reconstruction (over-excavation only)	Up to 5 feet
	BNSF West Bank Yard	Up to 5 feet

Source: Appendix N of this EIR

The project study area is located in a dense urban setting northeast of Downtown Los Angeles that includes LAUS and its associated rail yard, tracks, undercrossings, and buildings. Along the east side of the project study area are railroad tracks and several bridges that cross the Los Angeles River, from Main Street at the north to Olympic Boulevard in the south.

The AII includes the entirety of LAUS, both the primary building and an expanded historic district of associated resources, which were listed in the NRHP in 1980 and are automatically listed in the CRHR. North of the LAUS terminal building, the AII includes the throat, plus properties located along Avila Street. At the LAUS terminal, the AII includes the footprint of the new above-grade passenger concourse with new expanded passageway and other features at LAUS, including the present location of the pedestrian passageway, in addition to various ramps, butterfly sheds, and track and platforms on the rail yard. The majority of Patsaouras Transit Plaza and adjacent parcels to the east are also within the AII.

The western part of the AII includes the NRHP/CRHR-listed Los Angeles Plaza Historic District because of potential indirect visual impacts that could occur from implementation of the proposed project.

The southern part of the AII includes US-101 (Map Reference 11) and, to its south, undeveloped lots and early- to mid-twentieth-century industrial buildings. In this area, elevated run-through tracks structures are proposed south of LAUS and along the alignment of existing Commercial Street (which would be relocated to the north), reconnecting to existing railroad ROW along the west bank of the Los Angeles River. At-grade track improvements may be required beneath multiple existing bridges, although no construction disturbance is proposed at any of the roadway bridges over the Los Angeles River.

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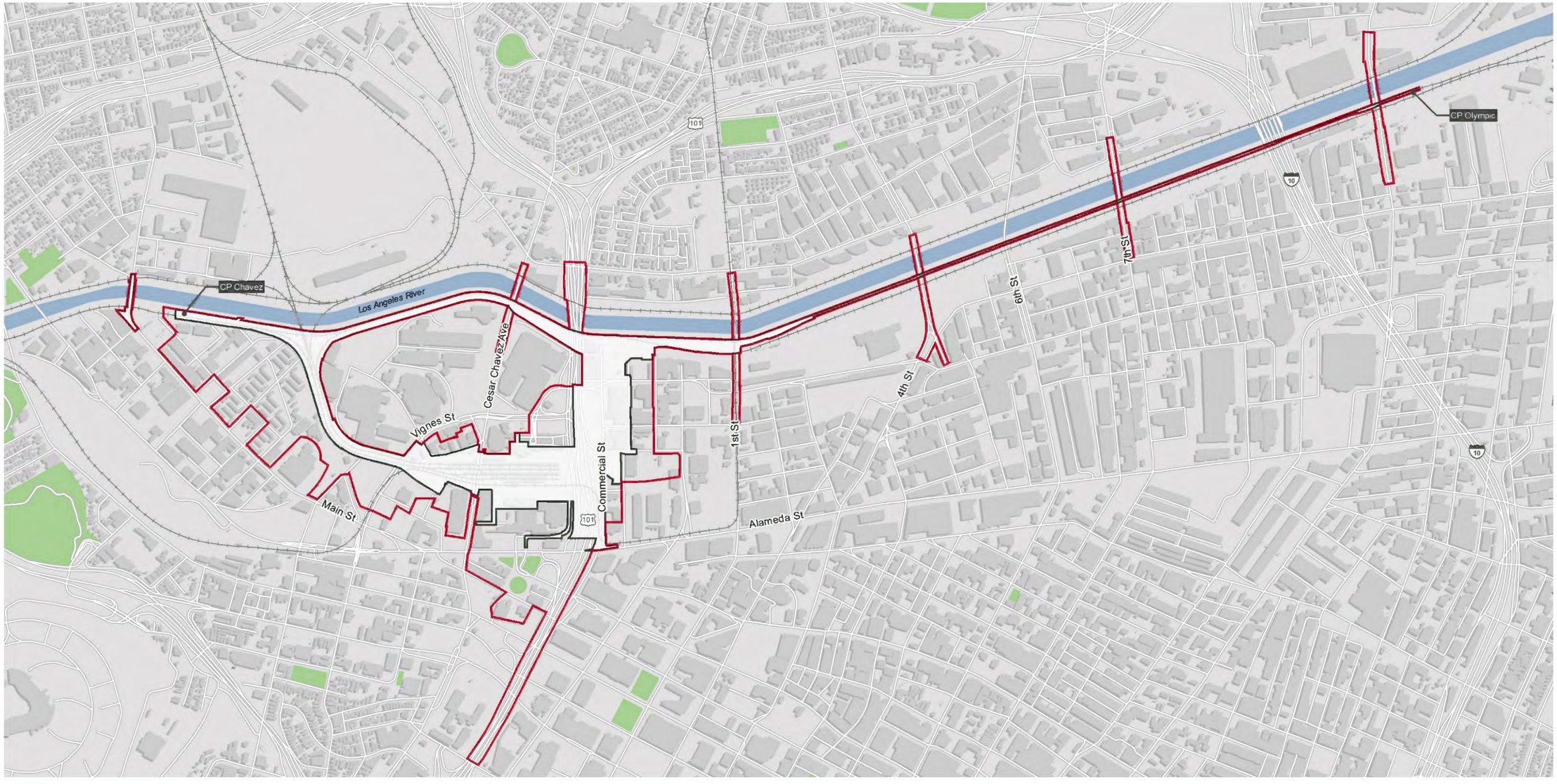
Figure 3.12-1. Areas of Potential Direct and Indirect Impacts



Source: Appendix N of this EIR

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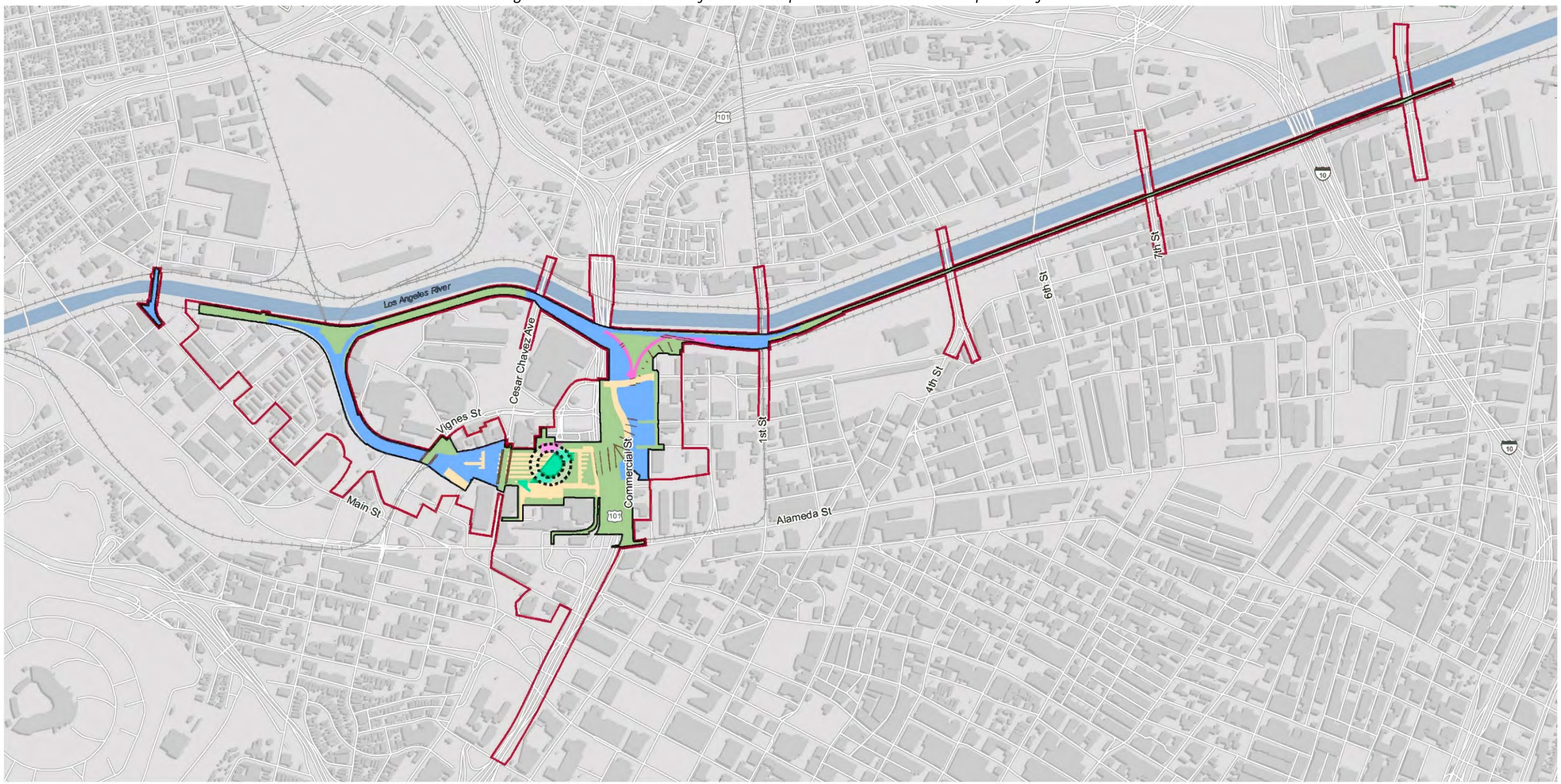
Figure 3.12-2. Vertical Extent of Potential Impacts Associated with the Proposed Project



Source: Appendix N of this EIR

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Identify Consulting and Interested Parties

A list of Native American Groups and individuals contacted is provided in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR).

Metro is consulting for historic resources within the AII with the following agencies/groups/individuals:

- California SHPO
- Caltrans
- The Gabrieleño Band of Mission Indians – Kizh Nation
- The Tongva Ancestral Territorial Tribal Nation
- Gabrielino/Tongva Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- City of Los Angeles Department of City Planning and OHR
- HACLA
- Los Angeles Conservancy
- Los Angeles Union Station Historical Society
- Los Angeles River Artists and Business Association
- Train Riders Association of California

Metro consulted with the following parties for historic resources, and they are no longer active in consultation:

- The Soboba Band of Luiseño Indians (Soboba)
    - Soboba concluded consultation via email dated February 1, 2017
- American Institute of Architects/Los Angeles Chapter
    - American Institute of Architects/Los Angeles Chapter concluded consultation via email dated January 11, 2017

Knowledge of Historic Resources

During the Notice of Intent (NOI) and NOP public review periods and the scoping meeting, written comments were received from individuals regarding three properties that should be considered in the analysis:

- An individual provided information that the Macy Street School be studied on the basis of ethnic heritage and historic school segregation.

- An individual inquired if the US-101 would be evaluated.
- An individual provided information regarding an existing buttressed stone wall within the AII along the former extension of Bauchet Street, north of Cesar Chavez Avenue, and suggested that if the wall had to be removed, that the stones could be incorporated into a new structure associated with the proposed project.

Metro is continuing consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Tongva Ancestral Territorial Tribal Nation, and the Gabrielino Tongva Nation regarding CEQA historical resources and TCR per CEQA, as amended by AB 52. The one archaeological site within the ADI, Archaeological Site CA-LAN-1575/H, is being treated as a TCR under CEQA. Information and comments received from Native American tribes and individual regarding tribal resources or historical resources is summarized in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR). To date, the information gathered from the tribal consultation does not indicate that Archaeological Site CA-LAN-1575/H has cultural values other than those associated with NRHP/CRHR Criterion D/4 (discussed below).

One of the consulting parties, OHR, stated it believes the Thomas R. Barabee Store and Warehouse at 611-615 Ducommun Street is a historical resource for the purposes of CEQA.

Issues Relating to Potential Impacts on Historical Resources

During consultation, the following comments were received from parties regarding concerns with or potential impacts on historical resources:

- American Institute of Architects/Los Angeles Chapter expressed concerns that Link US:
  - Be coordinated closely with Metro's former Los Angeles Union Station Master Plan
  - Not preclude the feasibility of a prospective Red Line/Purple Line station in the Arts District
  - Integrate well with the [ongoing plans for the] prospective LADOT maintenance facility, as well as the future alignment and station of the HSR
- The Train Riders Association of California expressed concerns that the vertical relationship between the platform tracks and the main line tracks may risk runaway trains and requested an alternative be studied without a new passenger concourse, suggesting constructing two new tunnels parallel to the existing passenger tunnel
  - Other concerns were raised about:
    - Constructability of the proposed new passenger concourse and difficulty of phasing on an operating rail terminus
    - Accessibility by elderly and disabled passengers resulting from the demolition of existing ramps without identified replacements
    - Impacts on the historic bridges crossing the Los Angeles River

All correspondence/comments from consulting and/or interested parties are presented in more detail in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR).

Identifying Historical Resources

Record searches were conducted at the California Historical Resources Information System, South Central Coastal Information Center to identify previously recorded cultural resources within the ADI and a 0.25-mile area surrounding it. Historic maps were reviewed to aid in identification of historic-era resources.

Surveys were conducted and documentation prepared and categorized into two major types: Archaeological Resources and Historic and Architectural Resources.

Archaeological Resources

Archaeological resources include resources that represent important evidence of past human behavior, including portable artifacts such as arrowheads or tin cans; non-portable "features" such as cooking hearths, foundations, and privies; or residues such as food remains and charcoal. Archaeological remains can be virtually any age but are generally classified as 50 years or older.

Historic and Architectural Resources

Historic and architectural resources include the recognizable built environment of human-made features. This category typically includes existing, above-ground buildings, and structures that date from the earliest territorial settlements until the present day but are generally classified as 50 years or older.

A context for archaeological resources, which includes an environmental setting for the project study area along with a prehistoric, ethnographic and historic setting, is provided in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR) and Section 3.12.2. The *Link US Cultural Resources Impact Assessment Report* provides context highly specific to the subject properties and correspondingly focuses on specific early landowners, as well as the nature of the area during key periods, including the ethnic character of the Macy Street neighborhood. It also discusses light industrial architecture, which is the area's predominant property type.

Historical/Architectural Resources

Historical/architectural resources are defined as those buildings, monuments, and other types of structures, including bridges, train stations, and courthouses used in the past and notable in history.

Methodology

The historical and architectural resources survey resulted in the preparation of the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR), in compliance with CEQA. Research was conducted for only those properties within the AII with the goal to identify any areas providing basic documentation about potentially significant buildings and structures.

In addition to property research, the following standard sources of information were reviewed in the process of compiling this report (Appendix N of this EIR):

- NRHP
- California Points of Historical Interest
- California Historical Landmarks
- CRHR
- California Historic Resource Inventory System
- Caltrans Historic Highway Bridge Inventory

On November 17 and 19, 2014, and August 4, 2016, record searches of built environment resources for the project were conducted at the South Central Coastal Information Center. The record searches included a review of the South Central Coastal Information Center databases for previously identified built resources in or near the AII and existing cultural resource reports pertaining to the general vicinity of the AII.

The following resources were consulted for further background research (Appendix N of this EIR):

- City of Los Angeles Historic Resources Survey (SurveyLA) – City of Los Angeles Historic Resources Survey
- Caltrans As-Built Drawing Archives
- Caltrans Historic Bridge Inventory
- Historic Aerials
- Online Archive of California
- Sanborn Fire Insurance Company maps
- City Directories
- Los Angeles Department of Building and Safety permits
- Los Angeles County archives, including the County assessor's improvement books
- ProQuest Historical *Los Angeles Times* Database
- Newspapers.com database
- Metro documents library
- Southern California Rapid Transit District Metro Rail project construction drawings (cira [ca.] 1987) SurveyLA
- Caltrans As-Built Drawing Archives
- Caltrans Historic Bridge Inventory

- Historic Aerials
- Online Archive of California
- Sanborn Fire Insurance Company maps
- City Directories
- Los Angeles Department of Building and Safety permits
- Los Angeles County archives, including the County Assessor's improvement books
- ProQuest Historic *Los Angeles Times* Database
- Newspapers.com database
- Metro documents library
- Southern California Rapid Transit District Metro Rail Project construction drawings

Results

The AII is centered primarily around LAUS, an NRHP/CRHR-listed property located in an urban setting with industrial properties and railroad tracks. The historic and architectural resources survey resulted in the identification of 17 properties (Table 3.12-3) that are considered historical resources for the purposes of CEQA and are discussed below. Further detail on these resources can be found in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR). All resources are shown on Figure 3.12-3, which shows the AII and has corresponding map reference numbers that identify each resource.

Table 3.12-3. CEQA Historical Resources in the Area of Indirect Impacts

Name (Map Reference No.[1])	Address/Location	Community	OHP Status Code[2]
Los Angeles Department of Water and Power, Main Street Center (#1)	1630 Main Street	Los Angeles, California	2D2
William Mead Homes (#2)	1300 Cardinal Street	Los Angeles, California	2S2
Mission Tower (#3)	800 Alameda Street	Los Angeles, California	2S2
Vignes Street Undercrossing (Bridge #53C 1764) (#4)	0.2 mile northwest of Cesar Chavez Avenue	Los Angeles, California	2D2
U.S. Post Office—Los Angeles Terminal Annex (#5)	900 Alameda Street	Los Angeles, California	1S
Macy Street School (#8)	900 Avila Street	Los Angeles, California	3S

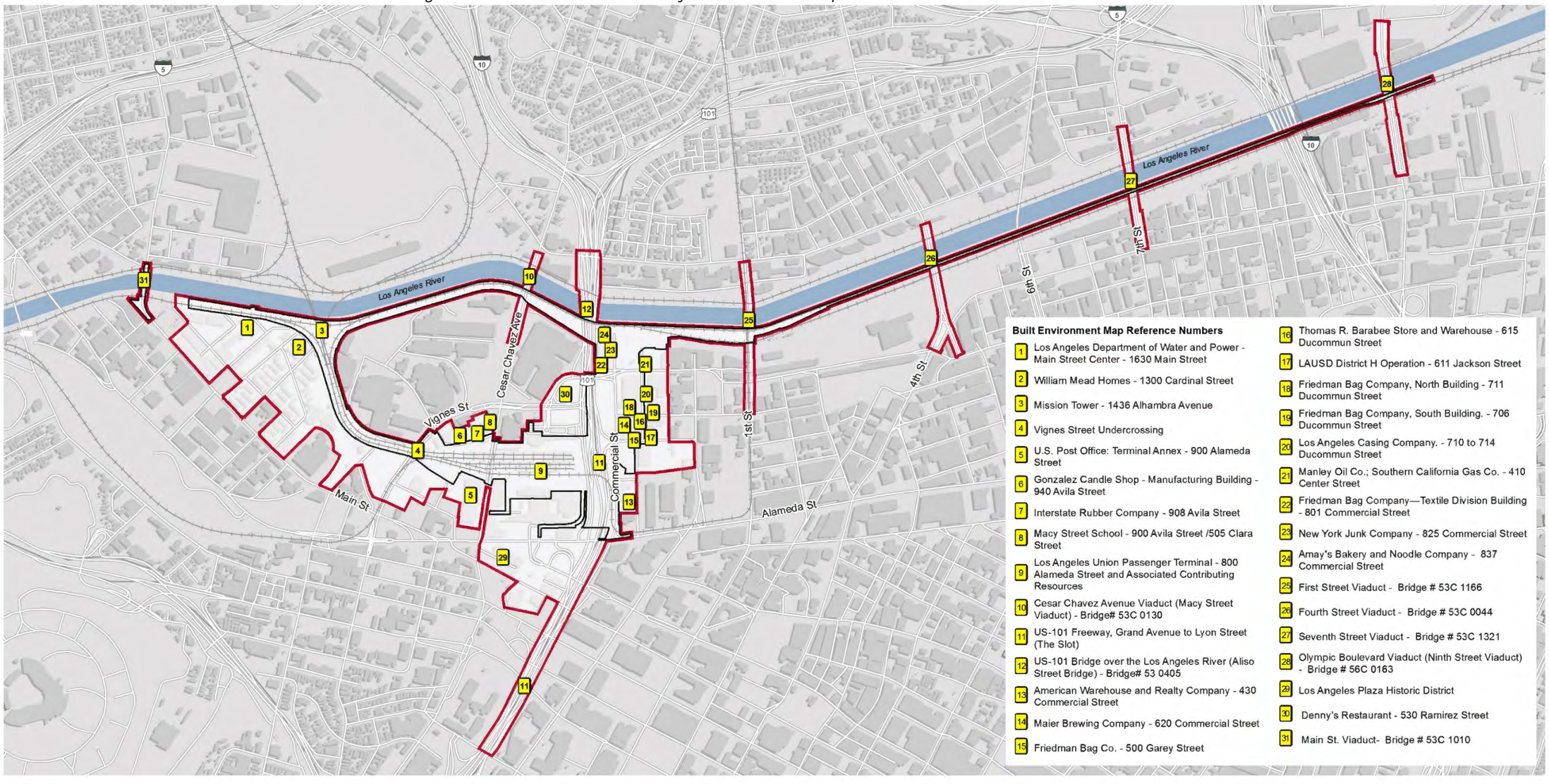
Table 3.12-3. CEQA Historical Resources in the Area of Indirect Impacts

Name (Map Reference No.[1])	Address/Location	Community	OHP Status Code[2]
Los Angeles Union Passenger Terminal (LAUS) (#9)	800 Alameda Street	Los Angeles, California	1S, 5S1
Cesar Chavez Avenue (formerly Macy Street) Viaduct (Bridge #53C 0130) (#10)	Cesar Chavez Avenue over the Los Angeles River, 0.12 mile north of US-101	Los Angeles, California	2S2, 5S1
Los Angeles Plaza Historic District (#29)	Roughly bounded by Cesar Chavez Avenue to the north, Alameda and Los Angeles Streets to the east, Arcadia Street to the south, and Spring Street to the west	Los Angeles, California	1S
Denny's Restaurant (#30)	530 Ramirez Street	Los Angeles, California	3S
Thomas R. Barabee Store and Warehouse (#16)	611–615 Ducommun Street	Los Angeles, California	5S3
Friedman Bag Company— Textile Division (#22)	801 Commercial Street	Los Angeles, California	3S
First Street Viaduct (Bridge #53C 1166) (#25)	First Street over the Los Angeles River, 0.6 mile west of US-101	Los Angeles, California	2S2, 5S1
North Main Street Bridge (Bridge #53C 1010) (#31)	Main Street over the Los Angeles River	Los Angeles, California	2S2, 5S1
Fourth Street Viaduct (Bridge #53C 0044) (#26)	Fourth Street over the Los Angeles River	Los Angeles, California	2S2, 5S1
Seventh Street Viaduct (Bridge #53C 1321) (#27)	Seventh Street over the Los Angeles River	Los Angeles, California	2S2, 5S1
Olympic Boulevard (Ninth Street) Viaduct (Bridge #53C 0163) (#28)	Olympic Boulevard over the Los Angeles River	Los Angeles, California	2S2, 5S1

Source: Appendix N of this EIR
Notes:
[1] ***This map reference code corresponds to Figure 3.12-3.***
[2] ***OHP Status Codes: 1S = Individual property listed in NRHP by the Keeper. Listed in the CRHR; 2D2 = Contributor to a district determined eligible for NRHP by consensus through Section 106 process. Listed in the CRHR; 2S2 = Individual property determined eligible for NRHP by a consensus through Section 106 process. Listed in the CRHR; 3S = Appears eligible for NR as an individual property through survey evaluation; 5S1 = Individual property that is listed or designated locally; 5S3 = Appears to be individually eligible for local listing or designation through survey evaluation.***

LAUS=Los Angeles Union Station; No.=number; OHP= Office of Historic Preservation; U.S.=United States

Figure 3.12-3. Link Union Station Areas of Direct and Indirect Impacts and Built Environment Resource Location



Built Environment Map Reference Numbers

1. Los Angeles Department of Water and Power - Main Street Center - 1630 Main Street
2. William Mead Homes - 1300 Cardinal Street
3. Mission Tower - 1436 Alhambra Avenue
4. Vignes Street Undercrossing
5. U.S. Post Office: Terminal Annex - 900 Alameda Street
6. Gonzalez Candle Shop - Manufacturing Building - 940 Avila Street
7. Interstate Rubber Company - 908 Avila Street
8. Macy Street School - 900 Avila Street /505 Clara Street
9. Los Angeles Union Passenger Terminal - 800 Alameda Street and Associated Contributing Resources
10. Cesar Chavez Avenue Viaduct (Macy Street Viaduct) - Bridge# 53C 0130
11. US-101 Freeway, Grand Avenue to Lyon Street (The Slot)
12. US-101 Bridge over the Los Angeles River (Aliso Street Bridge) - Bridge# 53 0405
13. American Warehouse and Realty Company - 430 Commercial Street
14. Maier Brewing Company - 620 Commercial Street
15. Friedman Bag Co. - 500 Garey Street
16. Thomas R. Barabee Store and Warehouse - 615 Ducommun Street
17. LAUSD District H Operation - 611 Jackson Street
18. Friedman Bag Company, North Building - 711 Ducommun Street
19. Friedman Bag Company, South Building. - 706 Ducommun Street
20. Los Angeles Casing Company. - 710 to 714 Ducommun Street
21. Manley Oil Co.; Southern California Gas Co. - 410 Center Street
22. Friedman Bag Company—Textile Division Building - 801 Commercial Street
23. New York Junk Company - 825 Commercial Street
24. Amay's Bakery and Noodle Company - 837 Commercial Street
25. First Street Viaduct - Bridge # 53C 1166
26. Fourth Street Viaduct - Bridge # 53C 0044
27. Seventh Street Viaduct - Bridge # 53C 1321
28. Olympic Boulevard Viaduct (Ninth Street Viaduct) - Bridge # 56C 0163
29. Los Angeles Plaza Historic District
30. Denny's Restaurant - 530 Ramirez Street
31. Main St. Viaduct- Bridge # 53C 1010

Source: Appendix N of this EIR

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Properties Listed in the National Register of Historic Places/California Register of Historical Resources

Properties already included in the NRHP, administered by the National Park Service, are automatically included in the CRHR. The following three historical resources are still standing and were identified within the AII:

- *Los Angeles Union Passenger Terminal* (LAUS, Union Station, Map Reference 9, NRHP SID#80000811), 800 Alameda Street, listed in the NRHP on November 13, 1980, at the local level of significance under Criteria A and C; the period of significance is 1939. LAUS was also found to be of exceptional importance and, therefore, met NRHP Criteria Consideration G for properties achieving significance within 50 years prior to the time of listing. The property is also listed as California Historic Landmark No. 892. LAUS is automatically included in the CRHR and is a historical resource for purposes of CEQA. The boundaries are the assessor's parcel boundaries. Contributing elements within the ADI for the project include the wrought iron railings, wainscot, platforms, butterfly sheds, railroad tracks, pedestrian subway, a (reconstructed) retaining wall and luminaire lights just south of stub ends, ramps, the Terminal Tower, the Cesar Chavez (Macy Street) Undercrossing, and a Car Supply/Repair Shop, all of which have previously been individually evaluated but for reporting purposes herein are considered character-defining features of the historic property. It should be noted that the Vignes Street Undercrossing (Map Reference 4) appears to have erroneously been left out of the original NRHP boundary description, and was singularly evaluated and identified as an NRHP/CRHR-eligible contributing resource to the LAUS NRHP listing. LAUS is also City of Los Angeles Historic-Cultural Monument No. 101, Union Station Terminal and Landscaped Grounds. LAUS was also documented in the Historic American Buildings Survey (HABS) (Survey No. HABS CA 2-258-A).
- *U.S. Post Office—Los Angeles Terminal Annex* (Map Reference 5, NRHP SID# 85000131), 900 Alameda Street, was the central mail processing facility for Los Angeles from 1940 to 1989. Designed by Gilbert Stanley Underwood, the building's architectural style is Mission/Spanish Colonial Revival. This property was listed in the NRHP on January 11, 1985, as part of the U.S. Post Office Thematic Resource nomination. U.S. Post Office – Los Angeles Terminal Annex was found to meet NRHP Criterion C with a period of significance of 1938. The U.S. Post Office – Los Angeles Terminal Annex is automatically included in the CRHR and is a historical resource for purposes of CEQA.
- Los Angeles Plaza Historic District (El Pueblo de Los Angeles Historic District/El Pueblo, Map Reference 29), is roughly bounded by Cesar Chavez Avenue to the north, Alameda and Los Angeles Street to the east, Arcadia Street to the south, and Spring Street to the west. El Pueblo was first listed in the NRHP on November 3, 1972, its boundary was amended on November 12, 1981, and the resource count was revised on June 21, 2016. El Pueblo was found to meet NRHP Criteria A and C, at the local level of significance, with a period of significance of 1818-1932. The approximately 9.5-acre site is comprised of 20 contributing buildings, 2 contributing sites, 6 non-contributing buildings, and 1 non-contributing structure. Many of the individual resources

have been designated at the national, state, and local level, including the Los Angeles Plaza itself, which is California Historical Landmark No. 156. The Los Angeles Plaza Historic District is automatically included in the CRHR and is a historical resource for purposes of CEQA.

Properties Previously Determined Eligible for the National Register of Historic Places/California Register of Historical Resources

Properties previously determined eligible for the NRHP as a result of a consensus between a federal agency and the SHPO are automatically eligible for the CRHR and are historical resources for purposes of CEQA. Such properties did not require re-evaluation by the Link US project, unless field survey investigation revealed their NRHP/CRHR eligibility status was compromised. The following eight historic properties are still standing and were identified within the AII:

- *Los Angeles Department of Water and Power Main Street Center* (1630 Main Street, Map Reference 1), is a substantially scaled, multibuilding yard owned and operated by LADWP. On the property are numerous shops, test labs, warehouses, repair facilities, garages, crane aisles, and offices. The eight earliest buildings on the property were constructed from 1923 to 1937. A Determination of Eligibility prepared by the FEMA in 1994, found the eight buildings on the property to be contributors to an NRHP-eligible historic district under NRHP Criteria A and C, with a period of significance to be 1923 to 1944. SHPO concurred with FEMA's determination on May 6, 1995. The current survey confirms and updates those 1995 findings and clarifies current conditions within the Link US AII by determining the close of the period of significance be extended from 1944 to 1965, and that four additional buildings be added as contributors to the district, making a total of 12 contributing buildings on the property. The Los Angeles Department of Water and Power Main Street Center is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *William Mead Homes* (1300 Cardinal Street, Map Reference 2), was determined eligible for the NRHP on June 3, 2002, with SHPO consensus, at the local level of significance through the Department of Housing and Urban Development Section 106 Programmatic Agreement for the City of Los Angeles. It was determined to meet Criterion A for its association with the development of public and defense worker housing in Los Angeles during the Second World War and to meet Criterion C as a Los Angeles public housing development based on the planning and design principles of the Garden City and Modern movements. The period of significance was established as 1943-1952. William Mead Homes is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *Mission Tower* (1436 Alhambra Avenue, Map Reference 3), was determined eligible for the NRHP by FRA and SHPO concurred on January 15, 2004, as a result of the Run-Through Tracks Project intensive-level survey. Mission Tower was determined to meet NRHP Criteria A and C; at the local level of significance, with a period of significance of 1938. The boundaries are the assessor's parcel boundaries. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.

- North Main Street Bridge (Bridge #53C 1010, Map Reference #31), was previously evaluated in 1986 as part of the Caltrans Statewide Historic Bridge Inventory, which was updated in 2004. The North Main Street Bridge was determined eligible for the NRHP under Criterion C for its engineering. The North Main Street Bridge was constructed in 1910, a year that also serves as its period of significance. The bridge was a pioneering example of a three-hinge bridge design that originated in Europe, and one of the earliest of its kind in the western U.S. As a result of that evaluation, the bridge was assigned a status code of 2S2, indicating that it was determined eligible for the NRHP by consensus through the Section 106 process and listed in the CRHR. In 2008, the bridge was designated as LAHCM #901. Through a recent project that appears to have complied with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the bridge has undergone a seismic retrofit. The retrofitting involved uniform concrete jacketing around structural elements of the bridge to improve seismic safety, as well as the restoration of original bridge elements (railing, lamp posts, etc.) that were removed in the 1970s. Based on visual observation, the property retains sufficient integrity to convey its significance as an early example of three-hinge bridge engineering. These significant structural elements are still extant beneath the concrete jacketing, and non-original elements including railing and lamp posts that detracted from the bridge's significance have been removed and restored with new features that are more in keeping with the bridge's original design. The property was re-surveyed as a part of the CHSRA Burbank to Los Angeles Section Historic Architectural Survey Report in 2016. The 2S2 status code is still valid, while the 5S1 status code is also valid and reflects its listing on the local register as LAHCM #901. The North Main Street Bridge is determined eligible for the NRHP, automatically eligible for the CRHR, and a historical resource for purposes of CEQA.
- *Cesar Chavez Avenue (formerly Macy Street) Viaduct over the Los Angeles River* (Bridge #53C 0130, Map Reference 10), as a result of the Caltrans Historic Bridge Inventory (HBI), was previously determined eligible for inclusion in the NHRP in 1986 at the local level of significance under Criteria A and C; the period of significance is 1926. The bridge was declared Los Angeles Historic-Cultural Monument (LAHCM) #224 on August 1, 1979. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *First Street Viaduct* (Bridge #53C 1166, Map Reference 25), over the Los Angeles River 0.6 mile west of US-101, was determined eligible for inclusion in the NRHP in 1986 as a result of the Caltrans HBI. Furthermore, on December 5, 2001, SHPO concurred with a finding that the bridge was eligible for the NRHP under Criterion C, with a period of significance of 1929. The bridge was declared LAHCM #909 on January 30, 2008. In 2011, the First Street Viaduct was widened by 26.3 feet and the railings strengthened by the City of Los Angeles Bureau of Engineering to accommodate the Eastside Light Rail Transit Extension of the Los Angeles Metrorail Gold Line, in cooperation with the Federal Highway Administration, Caltrans, and Metro. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *Fourth Street Viaduct* (Bridge #53C 0044, Map Reference 26), spanning the Los Angeles River from Mission Road on the east to Santa Fe Ave on the west, was determined eligible for inclusion in the NRHP in 1986 at the local level of significance under Criterion C as a result of the Caltrans HBI;

the period of significance is 1930–1931. The Fourth Street Viaduct was listed as LAHCM# 906 on January 30, 2008. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.

- *Seventh Street Viaduct* (Bridge #53C 1321, Map Reference 27), spanning the Los Angeles River from approximately Myers Street on the east to Santa Fe Avenue on the west, was determined eligible for inclusion in the NRHP in 1986 at the local level of significance under Criterion C as a result of the Caltrans HBI; the period of significance is 1910–1927. The Seventh Street Viaduct was listed as LAHCM# 904 on January 30, 2008. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *Olympic Boulevard (Ninth Street) Viaduct* (Bridge #53C 0163, Map Reference 28), spanning the Los Angeles River from Rio Vista Avenue on the east to Enterprise Street on the west, was determined eligible for inclusion in the NRHP in 1986 at the local level of significance under Criterion C as a result of the Caltrans HBI; the period of significance is 1925. The Olympic Boulevard Bridge was listed as LAHCM# 902 on January 30, 2008. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.

Properties Determined Eligible for the California Register of Historical Resources

Five additional architectural resources within the AII were determined eligible for the CRHR as a result of this study because they meet NRHP and/or CRHR criteria. The properties are:

- *Vignes Street Undercrossing* (Bridge #53C 1764, Map Reference 4) was constructed as part of LAUS but is located immediately north of that property's NRHP boundary. That the resource was left outside the boundary and appears to be a documenting error of the NRHP nomination because the map was based on the property's parcel boundary. The Vignes Street Undercrossing contributes to the significance of LAUS and is determined eligible for the NRHP under Criterion A at the local level of significance, period of significance 1933 to 1939. The undercrossing is 0.2 mile northwest of Cesar Chavez Avenue. The historic boundaries of the resource encompass the entirety of the super and substructure, including approach ramps and supporting embankments/abutments and/or wingwalls, and extend on either side of the bridge to include piers, cantilevered sidewalks, pylons, and underwater footings. Contributing elements include reinforced concrete construction of the overpass (including board-formed pattern), railing on span, abutments, elliptical arch, white tile along the walls, sidewalks (width and material), curbing with metal flashing and contractor imprint, metal and wire remnants of the Pacific Electric Railway, metal commemorative plaques, and a staircase on the southwest side (including the original metal railing). This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *Macy Street School* (900 Avila Street, Map Reference 8) is NRHP eligible at the local level of significance relative to Criteria A and B, period of significance 1915–1930. The property is historically significant for its associations with the turn of the century Progressive movement in education and for its associations with School Principal Nora Sterry, a noted progressive in the

history of Los Angeles education. Designed by noted Los Angeles Architect Albert C. Martin, the school building is English Renaissance Revival in style and retains sufficient historic integrity relative to Criteria A and B eligibility. Substantial window alterations and entry additions bar the resource from NRHP Criterion C eligibility. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.

- *Denny's Restaurant* (530 Ramirez Street, Map Reference 30) is determined eligible for the NRHP at the local level of significance under Criterion C as an excellent example of a "Googie" style coffee shop designed by architect Larry A. Ray based on the Armet and Davis prototype design from 1958. The period of significance is 1965. This property is automatically eligible for the CRHR and is a historical resource for purposes of CEQA.
- *Thomas R. Barabee Store and Warehouse* (611–615 Ducommun Street, Map Reference 16) is considered a CEQA historical resource. In an email on December 19, 2014, responding during the Section 106 process for SCRIP (the predecessor project to Link US), OHR stated it believes the Thomas R. Barabee Store and Warehouse is a historical resource for the purposes of CEQA. OHR believes the property is a significant example of commercial architecture and provided information related to context, theme, and property type for citywide commercial architecture. The boundaries are the assessor's parcel boundaries.
- *Friedman Bag Company—Textile Division Building* (801 Commercial Street, Map Reference 22) was previously surveyed in 2002 and determined ineligible for the NRHP by FRA; SHPO concurred with this finding on January 15, 2014 (FRA031117A). As a result, the entire property is considered not to be eligible for the NRHP because of a previous Section 106 consensus determination. However, the northwest portion of the building that was originally constructed in 1906, was identified as significant in 2016 by the OHR's SurveyLA program for associations to early industrial development in Los Angeles between 1880 and 1945. Therefore, the northwest portion of the building constructed in 1906 is a historical resource under CEQA because it was found to be significant in a historical resources survey.

Properties Determined Not Eligible for the California Register of Historical Resources

All other resources in the AII were determined not to be historical resources under CEQA or were not evaluated because they have not achieved significance within the past 50 years and do not have exceptional importance. These resources are shown on Figure 3.12-3 with their corresponding map reference numbers that identify each resource.

A previously identified historical resource in the AII has been completely demolished and is no longer a CEQA historical resource. The Sixth Street Viaduct (Bridge #53C 1880) once spanned the Los Angeles River from approximately Boyle Avenue at the east to Mateo Street at the west. It was previously determined eligible for inclusion in the NRHP/CRHR in 1986 and was previously declared LAHCM# 906 on January 30, 2008.

As documented in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR), eight properties were determined not eligible for the NRHP and have been assigned an OHP status code of 6Y, as shown in Table 3.12-4. The 6Y status code signifies that a resource is determined ineligible for the NRHP by consensus through the Section 106 process. SHPO consensus was received in a letter dated September 27, 2018. None of these properties are considered historical resources under CEQA.

Table 3.12-4. Properties Determined Not Eligible for the California Register of Historical Resources as a Result of the Evaluation in the Link Union Station Cultural Resources Impact Assessment Report

Name (Map Reference No.[1])	Address/Location	Community	OHP Status Code[2]
Gonzalez Candle Shop manufacturing building (#6)	940 Avila Street	Los Angeles, California	6Y
Interstate Rubber Company (#7)	908 Avila Street	Los Angeles, California	6Y
US-101 segment, Santa Ana Freeway (also known as "the slot") (#11)	US-101, Post Mile 0.3–0.7 Approximately between Grand Avenue and Vignes Street	Los Angeles, California	6Y
American Warehouse and Realty Company (#13)	430 Commercial Street	Los Angeles, California	6Y
Maier Brewing Company (#14)	620 Commercial Street	Los Angeles, California	6Y
Friedman Bag Company, Polyethylene Division, North Building (#18)	711 Ducommun Street	Los Angeles, California	6Y
Friedman Bag Company, Polyethylene Division, South Building (#19)	706 Ducommun Street	Los Angeles, California	6Y
Manley Oil Company/ Southern California Gas Company (#21)	410 Center Street	Los Angeles, California	6Y

Source: Appendix N of this EIR
Notes:
[1] This map reference code corresponds to Figure 3.12-3.
[2] OHP Status Code 6Y = Determined ineligible for NRHP by consensus through Section 106 process.
No.=number; OHP= Office of Historic Preservation

Six additional properties were determined ineligible for listing in the NRHP and have been assigned an OHP status code of 6Y as a result of previous studies and confirmed by the current study (Table 3.12-5). None of these properties are considered historical resources under CEQA.

Table 3.12-5. Properties Determined Not Eligible for California Register of Historical Resources in Previous Studies

Name (Map Reference No.[1])	Address/Location	Community	OHP Status Code[2]
US-101 Bridge #53-0405 (#12)	US-101 over the Los Angeles River	Los Angeles, California	6Y
Freidman Bag Company—Storage Building (#15)	500 Garey Street	Los Angeles, California	6Y
LAUSD District H Facilities Services and Maintenance Operations (#17)	611 Jackson Street	Los Angeles, California	6Y
Los Angeles Casing Company (#20)	710–714 Ducommun Street	Los Angeles, California	6Y
New York Junk Company (#23)	622 Frontage Road (825 Commercial Street)	Los Angeles, California	6Y
Amay's Bakery and Noodle Company (#24)	837 Commercial Street	Los Angeles, California	6Y

Source: Appendix N of this EIR
Notes:
[1] ***This map reference code corresponds to Figure 3.12-3.***
[2] ***OHP Status Code 6Y = Determined ineligible for NRHP by consensus through Section 106 process.***

LAUSD= Los Angeles Unified School District; No.=number; OHP= Office of Historic Preservation

Archaeological Resources

Archaeological resources are the physical remains of past human activities that can be either prehistoric or historic in origin. Archaeological sites are locations that contain significant evidence of human activity. Generally, a site is defined by a significant accumulation or presence of one or more of the following: food remains, waste from the manufacturing of tools, tools, concentrations or alignments of stones, modification of rock surfaces, unusual discoloration or accumulation of soil, or human skeletal remains. Prehistoric archaeological sites are commonly located along waterways where food and other resources are found in abundance, along ridgelines, and vistas.

Methodology

Record searches encompassing the ADI and a 0.25-mile radius beyond were conducted at the South Central Coastal Information Center between November 2014 and September 2016. The review included previously documented resources and listings in the NRHP, CRHP, California Historical Landmarks, California Points of Historical Interest, and historic General Land Office maps. The records search results were used to determine the location of previously documented archaeological resources within the ADI to assess the

potential impact the proposed project may have on existing resources, as well as the potential for the discovery of unanticipated resources within the ADI.

On June 15, 2016, an intensive archaeological pedestrian survey was completed within the ADI. Parallel transects spaced 15 meters apart were consistently employed across the entire ADI in areas unpaved or likely to contain or exhibit prehistoric or historically sensitive cultural resources. Areas that were not surveyed include active train tracks and rail yards. Visibility was obscured by the current built environment, paved roads, and existing infrastructure covering the majority of the ADI in and around the LAUS (Figure 3.12-1). Survey and site conditions were recorded using forms and digital cameras. Where necessary, site records were updated as part of the project, and updated forms can be found in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR).

Results

The record searches indicated 50 previous investigations have been performed in the ADI, and 3 archaeological resources were previously recorded within the ADI. These resources consist of:

1. A multicomponent site reported as the original site of Los Angeles Chinatown and early Los Angeles, including prehistoric Native American remains and Spanish/Mexican period remains (P-19-001575/ Archaeological Site CA-LAN-1575/H)
5. Two segments of an abandoned railroad siding (P-19-003169)
6. A segment of the Mojave Road (P-19-187085)

The archaeological field survey for the project failed to locate any evidence of the previously recorded resources, nor did it lead to the discovery of new resources. Efforts to identify archaeological resources through historic records and past project work, however, were sufficient to determine the presence of one large historic property buried beneath the ADI. This resource is discussed in detail below.

Archaeological Site P-19-001575 (Archaeological Site CA-LAN-1575/H)

Archaeological Site P-19-001575 (herein CA-LAN-1575/H) is a large multicomponent, subsurface archaeological site located in Downtown Los Angeles, California. Site boundaries are currently defined as the block north of US-101, bounded on the west by Alameda Street, on the north by Cesar Chavez (formerly Macy Street) Avenue, and by the eastern edge of the railroad tracks east of 800 Alameda Street: the general location of LAUS. Greenwood (1989) originally defined the size of the site as covering approximately 88,000 square meters (947,224 square feet) with dimensions of 330 by 266 meters (1,083 by 873 feet). Review of these dimensions against the actual bounding landmarks gives an area of 350 by 330 meters (1,148 by 1,083 feet) or 115,500 square meters (1,243,231 square feet). These boundaries are based on historical research and archaeological discoveries made during past construction projects that exposed portions of the site. Because the site boundary was determined through discovery of components within the ADI as a result of previous construction projects, it is highly probable that the site boundary, specifically the Native American component, extends well beyond the ADI. The entire landscape in and around the ADI is considered highly sensitive for buried cultural resources.

Subsurface deposits of Archaeological Site CA-LAN-1575/H are below and beyond the developed and operational portions of LAUS, which was built between 1933 and 1939 on approximately up to 24 feet of fill covering a portion of Historic Los Angeles Chinatown, as documented in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR). There are no portions of the archaeological site visible or accessible within the modern developed surface area of LAUS.

Past historic, ethnographic, and archaeological research, as well as past construction projects that encountered portions of the site have helped to define the site boundary and components within the ADI. Artifacts and features uncovered during past projects include prehistoric burials, habitation deposits, and remnants of Historic Los Angeles Chinatown. The previously uncovered material assemblage and features can be grouped into three broad overlapping temporal/cultural components:

- The Prehistoric/Historic Native American Period (AD 1000–1848)
- The Spanish-Mexican Period (1781–1850)
- The American Period – Historic Los Angeles Chinatown (1850–1966)

Archaeological testing, monitoring, and excavations at Archaeological Site CA-LAN-1575/H were performed for three projects:

- Metro Redline Subway (Appendix N of this EIR)
- Metropolitan Water District of Southern California Headquarters Project (Appendix N of this EIR)
- Union Station Village Apartments and Catellus Corporation Head Start Building Projects (Appendix N of this EIR)

The Metro Red Line subway archaeological excavations recovered mostly historic-period materials and features associated with Chinatown; however a scattering of prehistoric materials and one prehistoric human interment were also found. The MWD Headquarters Project recovered extensive materials from Chinatown and a prehistoric cemetery, while Union Station Village and the Head Start Building Projects recovered only historic-period materials associated with Chinatown.

Native American Archaeological Component

Excavations in 1996 (Appendix N of this EIR) recovered the remains of 19 individuals, 14 found in primary interments and 5 as cremations. These prehistoric and historic-period Native American remains date from 1000 BP to approximately 130 BP (Appendix N of this EIR). Three burials were found at depths ranging from approximately 1.7 to 2.5 meters (5.6 to 8.2 feet) below the asphalt of the LAUS parking lot.

Hundreds of shell, schist, talc, and jadeite beads and a few shell ornaments were found associated with these burials and cremations. Other prehistoric artifacts found with these remains included projectile points, a metate fragment, a stone pipe fragment, a bowl mortar fragment, ceramic vessel fragments, bone awls and hairpins, a steatite drinking bowl, and four charred basketry fragments. This portion of

Archaeological Site CA-LAN-1575/H has been interpreted as representing an area used specifically as a cemetery and not a village occupation area.

Historical Period Archaeological Components

Spanish-Mexican Period

The only artifact or feature dating from the Spanish-Mexican Period found to date at Archaeological Site CA-LAN-1575/H is Zanja 654. This earthen ditch feature was likely built for the Avila vineyards of the 1820s and subsequently improved into a wooden conduit in 1881 when the winery was upgraded by new managers. Discovered during archaeological investigations at the MWD property (Appendix N of this EIR), Costello's research concluded that Zanja 654 was not part of the Zanja Madre system but was likely an agricultural irrigation feature.

American Period

The American Period component of Archaeological Site CA-LAN-1575/H consists of remains associated with the development of Chinatown and its decline during the 1860s to 1933. Greenwood (Appendix N of this EIR) discusses intact deposits from Chinatown identified during construction of the Metro Red Line tunnel under the LAUS Yard.

Historical features documented during subsequent excavations for the MWD Headquarters building (Appendix N of this EIR) included hundreds of privies, extensive refuse deposits, and numerous structural foundations, including those of Matthew Keller's sherry house, the Sisters of Charity Orphan Asylum, several family residences, and the foundations of numerous brothels and Chinese cribs. Thousands of historic-era artifacts were recovered, including ceramics, bottles and glassware, Chinese ceramics and coins, and numerous types of household items (Appendix N of this EIR). Individual features found include wells and the remains of a large brick three-burner wok stove.

No archaeological materials from the historic period after construction of LAUS (1934 to 1968) have been found at the site.

INTEGRITY

Pre-1933 surface features and buildings in the area of Archaeological Site CA-LAN-1575/H were destroyed or removed when the area was cleared and filled for the construction of LAUS. Although surface constituents of the site no longer exist, subsurface artifacts and features discovered during previous investigations suggest the site retains integrity of objects, deposits, or features dating to the Native American and American periods in the history of Los Angeles.

An intact prehistoric cemetery containing the remains of 19 individuals along with an extensive collection of burial goods discovered underneath the MWD Headquarters project site (Appendix N of this EIR) strongly suggest additional Native American archaeological materials still exist within the boundaries of Archaeological Site CA-LAN-1575/H.

While little archaeological evidence of the Spanish-Mexican Period has been found to date (a single zanja segment), a single find may signal other agricultural features also remain. So too might evidence of agricultural practices associated with the extensive vineyards of the Spanish-Mexican era. However, continued use of the area for vineyards and orchards well into the American Period likely removed or obscured evidence of the Spanish-Mexican Period agriculture. It should be noted that historical maps demonstrate the Zanja Madre system was located west of the modern alignment of Alameda Street, outside the ADI (Appendix N of this EIR). In addition, numerous artifacts, features, and deposits associated with Chinatown discovered in situ during the Metro Red Line Project (Appendix N of this EIR) suggest other portions of the site retain integrity of objects associated with the early Chinese in American history.

Excavations for the MWD Headquarters building, Metro Red Line tunnel, and the Catellus Head Start Building and the Union Station Village Apartments likely eradicated any archaeological materials within their footprints. All projects required construction excavations that extended well below the calculated maximum depth for any archaeological resources.

ELIGIBILITY

For Link US, FRA evaluated the historical significance of Archaeological Site CA-LAN-1575/H for each of the site's cultural components with reference to the NRHP eligibility criteria at 36 CFR 60.4. FRA determined and SHPO concurred that Archaeological Site CA-LAN-1575/H is:

- Not Eligible under Criterion A/1: The site does not qualify for listing in the NRHP/CRHR according to eligibility Criterion A/1 for the following cultural components of the site:
    - *Prehistoric/Historic Native American Period*: Despite uncovering significant Native American remains dating from ca. 1000 BP to ca. 130 BP, no relationship to significant events can be recognized.
    - *Spanish-Mexican Period*: Archaeological Site CA-LAN-1575/H manifests scant evidence of remains from the Spanish-Mexican Period with only one previous discovery of a zanja that does not appear to be part of the larger zanja system. Despite the historical associations with vineyards, the Spanish-Mexican component of Archaeological Site CA-LAN-1575/H does not maintain integrity of design, setting, materials, workmanship, feeling, and association. The entire site environment has been transformed, particularly with the development of the LAUS complex and the modern urban development of Los Angeles. As such, this component does not qualify under Criterion A/1.
    - *American Period*: Despite the historical associations with Historical Los Angeles Chinatown, Archaeological Site CA-LAN-1575/H does not maintain integrity of design, setting, materials, workmanship, feeling, and association. The entire site environment has been transformed with the development of the LAUS complex and the modern urban development of Los Angeles. Because there are no remnants of the Chinatown community, the American Period Component does not qualify under Criterion A/1.

- Not Eligible under Criterion B/2: The site does not qualify for listing in the NRHP/CRHR according to eligibility Criterion B. After review of ethnographic literature and consultation with Native American Tribes and review of historic period documents, the site lacks any known associations with historically important persons or legendary beings.
- Not Eligible under Criterion C/3: The site does not qualify for listing in the NRHP according to eligibility Criterion C because the site does not exhibit qualities that 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.
- Is NRHP Eligible under Criterion D/4: The site yielded and still has the potential to yield significant archaeological data/information regarding the Late Prehistoric Period and American Period. As demonstrated by past investigations, artifacts, deposits, features and other archaeological materials retain the integrity necessary to answer pertinent and current research questions, through recovery and interpretation of the archaeological record at the site.

Archaeological Site CA-LAN-1575/H

Archaeological Site CA-LAN-1575/H was determined NRHP eligible under Criterion D by FRA with SHPO concurrence on September 27, 2018, and is automatically eligible for the CRHR. The period of significance for Link US archaeological materials is Late Prehistoric Period (AD 1000) to AD 1940, which encompasses Native American cultural remains and cultural materials deposited up until the demolition of the Original Los Angeles Chinatown and subsequent completion of LAUS.

The recent field survey for Link US did not result in observations of any remnants or indications of Archaeological Site CA-LAN-1575/H. The recorded area of the site is completely covered by buildings, structures, and pavement; however, based on previous investigations of the site, Archaeological Site CA-LAN-1575/H is present within the ADI under the current urban landscape and, therefore, the potential for the ADI to yield buried historic and prehistoric archaeological resources is considered high.

P-19-003169

P-19-003169 (CA-LAN-3169H), two segments of an abandoned railroad siding, was first recorded in 2003 by Applied EarthWorks (Appendix N of this EIR) for the Run-Through Tracks Project. The resource was described as being in two separate segments at two places: on Commercial Street near the intersection with Center Street and in a vacant city block south of Commercial Street and north of Ducommun Street, between Garey Street and Hewitt Street. This resource has been removed and paved over and no longer exists within the ADI.

P-19-187085

The Mojave Road (also known as Mojave Trail) is solely represented by a State Historical Landmark (No. 963), located a considerable distance from the ADI. The landmark monument is located at the Midway Rest Area along I-15 North, approximately 30 miles northeast of Barstow. The portion of this resource that may

have been located in Downtown Los Angeles has been paved over, buried, or no longer exists along its reported alignment, which is based on historical descriptions and maps. The resource may have crossed the ADI, but the actual historical alignment within the vicinity of the ADI is not known, and no remnants or signs of the resource exist within or near the ADI.

Archaeological Resources Near but Outside the Area of Direct Impacts

The following 16 archaeological resources are located within 0.25 mile of the ADI but are not evaluated for the CRHR, as they would not be impacted. These resources are summarized in Table 3.12-6. Resources are ordered by primary number.

Table 3.12-6. Archaeological Resources within 0.25 Mile of the Area of Direct Impacts

Primary No.	Trinomial	Description and Age	Evaluation and Eligibility Status
P-19-000887	CA-LAN-887H	Wall and building foundations of eighteenth, nineteenth, and twentieth century buildings; trash lenses; portion of Zanja Madre; 25,000 artifacts in association with Spanish/Mexican period midden	Status Code 3S – Recommended eligible for the NRHP
P-19-002828	CA-LAN-2828H	Historic period commercial debris, late 1800s to early 1900s	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-003103	CA-LAN-3103H	Zanja Madre (water conveyance feature, this segment only), ca. 1781 to ca. 1904	Status Code 6Z – Evaluated and determined not eligible
P-19-003338	CA-LAN-3338H	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-003340	CA-LAN-3340H	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-003353	CA-LAN-3353H	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-004112	CA-LAN-4112H	Historic period residential and commercial debris and structural features, late 1800s to early 1900s	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-004113	CA-LAN-4113H	An extension of Zanja 6-1 constructed ca. 1857	Status Code 7R – Identified in reconnaissance level survey: not evaluated

Table 3.12-6. Archaeological Resources within 0.25 Mile of the Area of Direct Impacts

Primary No.	Trinomial	Description and Age	Evaluation and Eligibility Status
P-19-004201	CA-LAN-4201H	Naud's Junction: former location of a railroad control tower, warehouse, industrial track segments of the Southern Pacific Railroad. Contains 5 features with 10 associated artifacts, and 249 artifacts consisting of ceramic tableware, animal bones, building materials, glass and ceramic bottles, horseshoes, hardware, and machinery parts, ca. 1881 to ca. 1945	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-004202	CA-LAN-4202H	Four railroad segments associated with Southern Pacific Railroad, abandoned in place, ca. 1880s to ca. 1945	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-004218	CA-LAN-4218H	Los Angeles Plaza Cemetery, located within the NRHP-listed Los Angeles Plaza Historic District. Cemetery contains remains of Hispanic, Native American, and people of other heritage associated with the Plaza Church, ca. 1821 to ca. 1850	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-004320	No trinomial assigned because resource was not recorded as an archaeological site.	Subsurface historic refuse deposit, nineteenth to early twentieth centuries	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-100515	No trinomial assigned because resource was not recorded as an archaeological site.	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-100882	No trinomial assigned because resource was not recorded as an archaeological site.	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated
P-19-100887	No trinomial assigned because resource was not recorded as an archaeological site.	Subsurface historic refuse deposit	Status Code 7R – Identified in reconnaissance level survey: not evaluated

Table 3.12-6. Archaeological Resources within 0.25 Mile of the Area of Direct Impacts

Primary No.	Trinomial	Description and Age	Evaluation and Eligibility Status
P-19-120014	No trinomial assigned because resource was not recorded as an archaeological site.	Subsurface pit feature containing historic artifacts	Status Code 7R – Identified in reconnaissance level survey: not evaluated

Source: Appendix N of this EIR
Notes:
ca.=circa; no.=number; NRHP= National Register of Historic Places

Tribal Cultural Resources

The California NAHC was contacted to incorporate the opinions and concerns of Native Americans in the ADI. The NAHC consulted its Sacred Lands File for Native American burial sites and sacred places that could exist in the ADI. The NAHC indicated the presence of sacred sites in the ADI and recommended contacting the Gabrieleño Band of Mission Indians – Kizh Nation for more information about these sites, suggesting other individuals of Native American descent with an interest in the general project area could have additional information, knowledge, or concerns regarding resources.

A TCR is defined as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and either:

- Is on, or eligible for, the CRHR or a local historic register
- The lead agency, "in its discretion and supported by substantial evidence," determines that the resource meets the register criteria

As a result of tribal consultation conducted under AB 52 by Metro, the Native American component of Archaeological Site CA-LAN-1575/H is considered a TCR.

The Native American component of Archaeological Site CA-LAN-1575/H, which was determined eligible (with SHPO consensus) for the NRHP under Criterion D, is automatically eligible for the CRHR under Criterion 4.

Chairman Andrew Salas of the Gabrieleno Band of Mission Indians – Kizh Nation addressed the significance of the area in a letter dated June 15, 2016:

> *"Your project lies in an area where the Ancestral territories of the Kizh (Kitc) Gabrieleño's villages Such as Yangna adjoined and overlapped with each other, at least during the Late Prehistoric and Protohistoric Periods. The homeland of the Kizh Gabrieleño was probably the most influential Native American group in aboriginal Southern California (Bean and Smith 1978a:538), was centered in the Los Angeles Basin, and reached as far east as the San*

> *Bernardino-Riverside area. The homeland of our neighbors the Serrano's was primarily the San Bernardino Mountains, including the slopes and lowlands on the north and south flanks. Whatever the linguistic affiliation, Native Americans in and around the project area exhibited similar organization and resource procurement strategies. Villages were based on clan or lineage groups. Their home/base sites are marked by midden deposits often with bedrock mortars. During their seasonal rounds to exploit plant resources, small groups would migrate within their traditional territory in search of specific plants and animals. Their gathering strategies of ten left behind signs of special use sites, usually grinding slicks on bedrock boulders, at the locations of the resources."*

Given the project location and the high sensitivity for archaeological resources within the ADI, all tribes that have met with Metro under AB 52 have requested that a Native American Monitor is present on site for any and all ground disturbances (including, but not limited to, pavement removal, potholing, augering, boring, grading, excavation, and trenching) to protect any cultural resources that may be impacted during construction of the proposed project.

Additionally, the Gabrieleño Band of Mission Indians – Kizh Nation, through consultation, has recommended a robust monitoring and mitigation plan be in place prior to the start of construction. The same recommendation was made by the Soboba Band of Luiseño Indians.

In regard to this TCR, in a meeting held November 15, 2016, between FRA, Metro, and John Tommy Rosas of the Tongva Ancestral Territorial Tribal Nation, Rosas noted this site should be tested prior to construction, and there should be a specific treatment plan in place prior to the start of construction that details the plan of action in case human remains are encountered and to address the long-term disposition of artifacts. Rosas stated a preference for the reburial of Native American human remains as close as possible, as well as for the reburial of any artifacts found during excavations.

Follow-up meetings with tribal representatives in August 2018 did not result in additional information that altered the analysis that the Native American component of Archaeological Site CA-LAN-1575/H is significant under Criteria D/4 and extremely sensitive to the consulting tribes. Tribal representatives expressed concerns that burials discovered near the location of the El Aliso sycamore tree may be burials of people who had high status, based on burial goods found in nearby contexts. They were also concerned that the area in which Native American remains and burials may be encountered is much larger than the ADI. The probability that additional Native American burials may be discovered during construction was reiterated. It was requested that the monitoring and treatment plans carefully analyze where construction may impact Native American remains and that the plans should emphasize a heightened sensitivity in the areas where Native American components may be present. It was requested that testing occur prior to construction.

These suggestions from the Tribal representatives are incorporated into appropriate mitigation measures for Cultural and Tribal Resources (Section 3.12.6).

Paleontological Setting

The RSA is located within the Los Angeles Basin in the northern section of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges Geomorphic Province is characterized by mountain ranges separated by northwest-trending valleys and it extends from southwestern California into Mexico (Appendix N of this EIR). The Los Angeles Basin is bordered by the Santa Monica and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Pacific Ocean to the west (Appendix N of this EIR). As illustrated on Figure 3.12-4 and Figure 3.12-5, geologic mapping by Dibblee and Ehrenspeck (1989) indicates that the entirety of the RSA surface is underlain by Quaternary alluvial gravel and sand. Quaternary older alluvium deposits are mapped at the surface in close proximity to the RSA, east of the Los Angeles River, and Pliocene Fernando Formation, unnamed Miocene shale (attributed to the Puente Formation), and Miocene Monterey Formation, are mapped in the hills surrounding the RSA. The distribution of the geologic units within the RSA is discussed in detail in the *Link US Paleontological Identification Report and Evaluation Report* (Appendix O of this EIR). The *Link US Preliminary Geotechnical Report* states that the RSA is underlain by artificial fill, Quaternary alluvium, Quaternary older alluvium, and Miocene Puente Formation (Appendix L of this EIR).

Paleontological Resources

A paleontological records search maintained by the Natural History Museum of Los Angeles County was conducted for the project. On June 20, 2016, the Natural History Museum noted it does not have any vertebrate fossil localities within Link US RSA, but there were recorded localities nearby from the same older Quaternary units that occur as subsurface deposits within the RSA. Literature searches and online database reviews were also negative for fossils within the RSA, although fossils were recorded from Quaternary older alluvium in the vicinity and throughout Los Angeles County as detailed in the *Link US Paleontological Identification Report and Evaluation Report* (Appendix O of this EIR) and in Table 3.12-7.

Fossils are generally unknown from Quaternary (Holocene) alluvium due to its young age. However, these young deposits are often underlain by older, paleontologically sensitive sediments at depth (Appendix O of this EIR), as indicated in the *Link US Preliminary Geotechnical Report* (Appendix L of this EIR).

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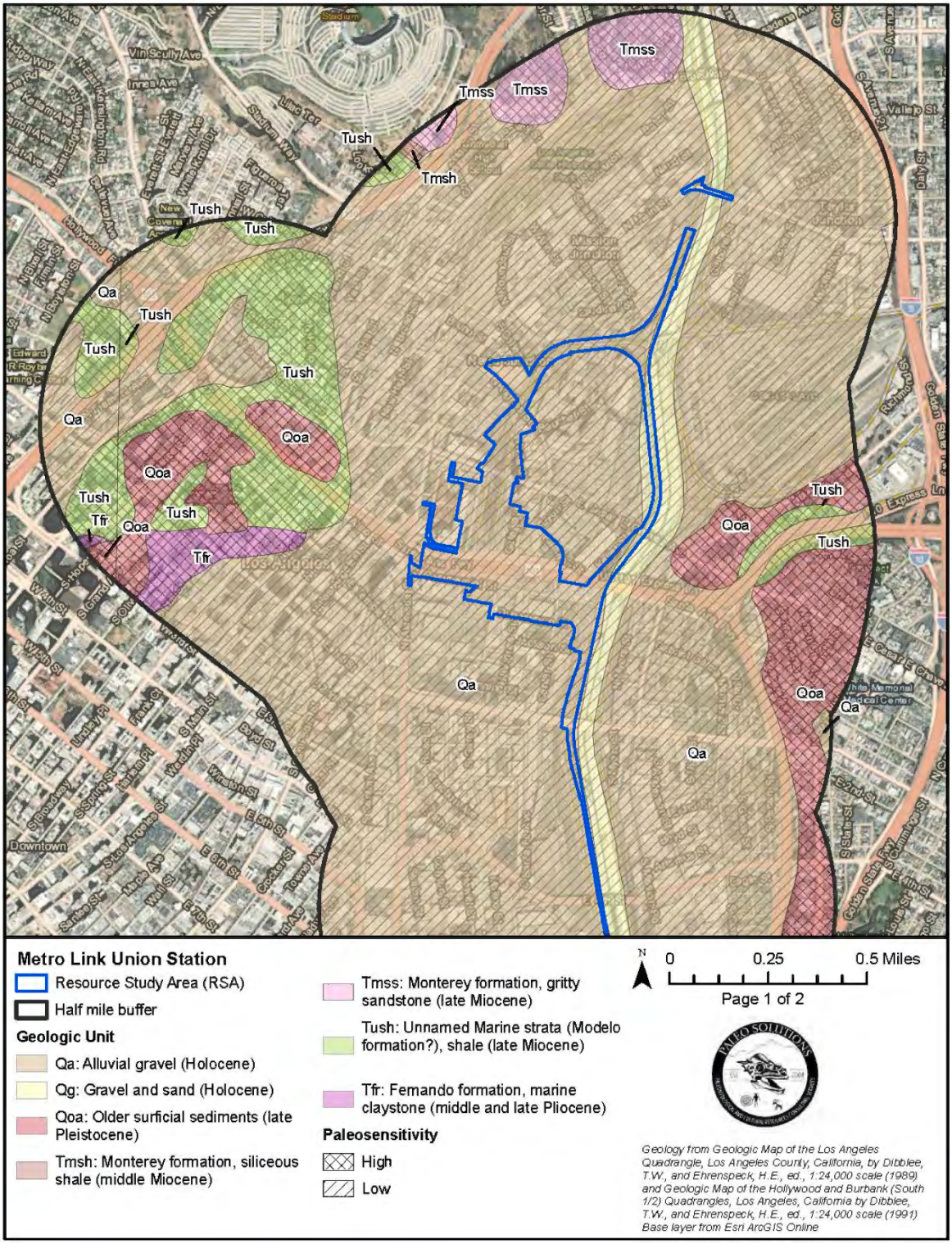
Figure 3.12-4. Link Union Station Geology Map 1 of 2



Source: Appendix O of this EIR

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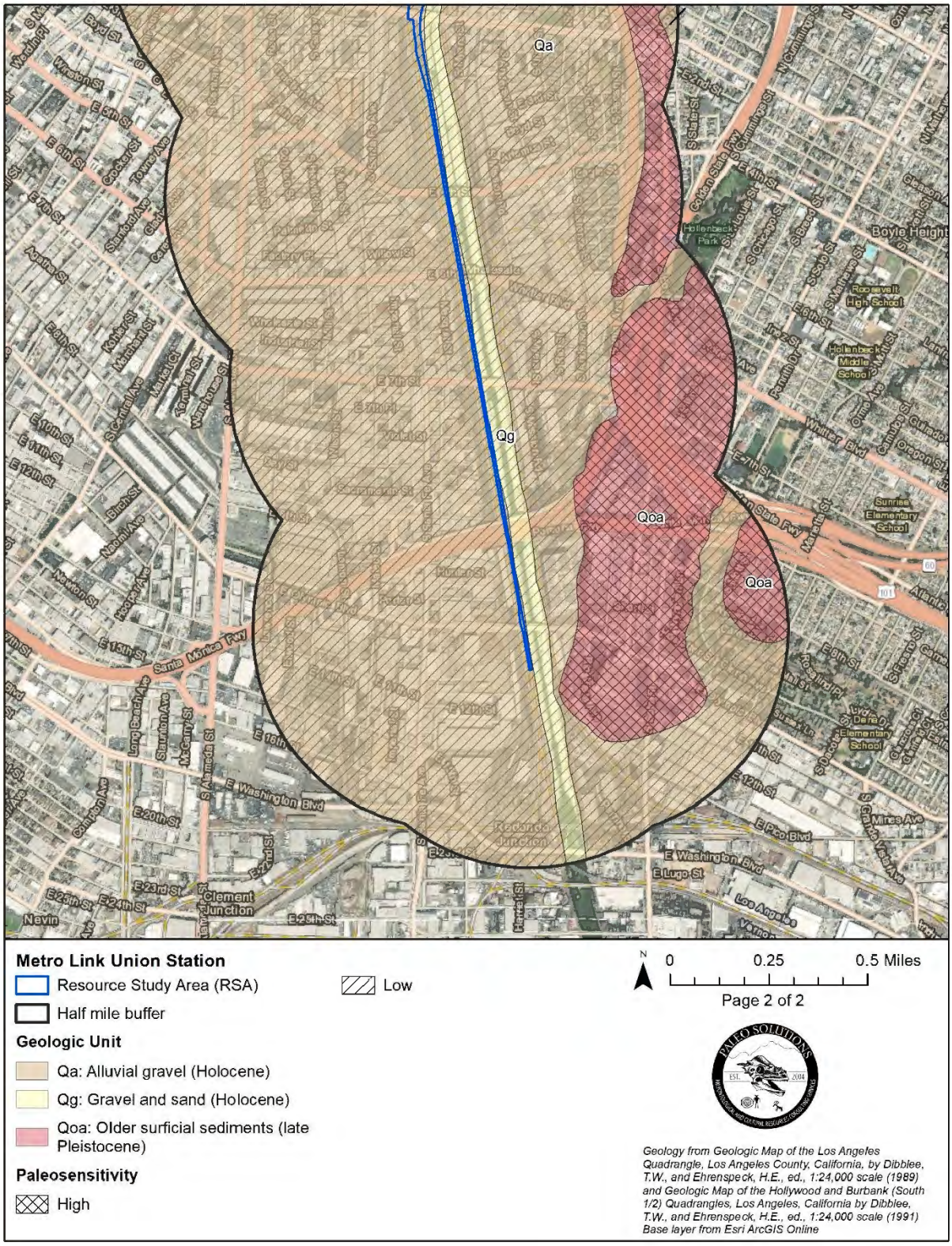
Figure 3.12-5. Link Union Station Geology Map 2 of 2



Source: Appendix O of this EIR

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Table 3.12-7. Fossil Localities in the Link Union Station Vicinity

Locality No.	Common Name	Scientific Name	Depth	Reference
LACM 1023	Turkey	Meleagris californicus	Not Reported	Appendix M
	Saber-toothed cat	Smilodon fatalis		
	Horse	Equus		
	Deer	Odocoileus		
LACM 2032	Pond turtle	Clemmys marmorata	20 to 35 feet	Appendix M
	Ground sloth	Paramylodon harlani		
	Mastodon	Mammut americanum		
	Mammoth	Mammuthus imperator		
	Horse	Equus		
	Camel	Camelops		
LACM 1755	Horse	Equus	43 feet	Appendix M
LACM 7701-7702	Threespine stickleback	Gasterosteus aculeatus	11 to 34 feet	Appendix M
	Salamander	Batrachoseps		
	Lizard	Lacertilia		
	Snake	Colubridae		
	Rabbit	Sylvilagus		
	Pocket mouse	Microtus		
	Harvest mouse	Reithrodontomys		
	Pocket gopher	Thomomys		
LACM 7758	Threespine stickleback	Gasterosteus aculeatus	16 feet	Appendix M
	Meadow vole	Microtus		
	Deer mouse	Peromyscus		
	Pocket gopher	Thomomys		
	Pocket mouse	Perognathus		

Table 3.12-7. Fossil Localities in the Link Union Station Vicinity

Locality No.	Common Name	Scientific Name	Depth	Reference
LACM 6202	Anglerfish	Chaenophryne melanorhabdus Leptacanthichthys gracilispinis Oneirodes sp. Borophryne apogon *Linophryne indica*	Not reported	PBDB 2016

Source: Appendix O of this EIR
Notes:
No.=number; PBDB=Paleobiology Database

By their very nature, fossils found in artificial fill have lost their native provenance and, therefore, have marginal scientific value. Artificial fill is considered to have low potential to produce significant paleontological resources. Fossils are generally unknown from Quaternary alluvium deposits, such as those mapped at the surface within the proposed RSA, because of their young age. Reworked paleontological material from older deposits may be present but would not meet significance criteria as the material would lack critical contextual information. Therefore, Quaternary alluvial deposits have low paleontological potential. Based on the *Preliminary Geotechnical Report* (Appendix L of this EIR) and record search results (Appendix O of this EIR), the Quaternary alluvium in the RSA is underlain by Quaternary older (Pleistocene) deposits at depths between 40 and 70 feet. There is also high-sensitivity Puente Formation at depths between 20 feet in the northwest corner of LAUS to 100 feet in the southwest corner. Significant vertebrate fossils have been recorded from the Quaternary older (Pleistocene) deposits and the Puente Formation in proximity to the RSA (Appendix O of this EIR), resulting in a high paleontological potential.

3.12.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, impacts on cultural resources would be considered significant if the project would:

A. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5

C. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

D. Disturb any human remains, including those interred outside of formal cemeteries

E. Cause a substantial adverse change in the significance of a TCR as defined in §21074

Impact Analysis

THRESHOLD 3.12-A	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5

Built Environment Resources Determined to have No Impact

The following five bridges that are classified as historical resources, as defined in §15064.5, and located within the AII would result in no impact because no physical alteration to any of the bridges would result from the proposed project:

- Cesar Chavez Avenue viaduct over the Los Angeles River
- First Street viaduct over the Los Angeles River
- Fourth Street viaduct over the Los Angeles River
- Seventh Street viaduct over the Los Angeles River
- Olympic Boulevard viaduct over the Los Angeles River

While some track work would occur where the railroad tracks pass under the bridge structures, and the tracks, ties, and ballast constitute "physical features within the setting" of the bridges, they have been subject to regular replacement over the years as part of routine maintenance and do not comprise historic material that contributes to the significance of the bridges themselves. Therefore, there would be no impact on these historical resources.

Additionally, the Thomas R. Barabee Store and Warehouse is classified as a historical resource and would result in no impact because the proposed project would result in no physical alteration to the building. Therefore, no impact on this historical resource would occur.

Direct Impacts – Construction

The following six resources are classified as historical resources which the proposed project may cause a substantial adverse change in the significance:

- LAUS and Vignes Street Undercrossing (two separate but related historical resources, as explained in the Historical Resource Evaluation Report)
- William Mead Homes
- Friedman Bag Company—Textile Division Building
- North Main Street Bridge (Bridge #53C 1010)
- Archaeological Site CA-LAN-1575/H

Los Angeles Union Station and Vignes Street Undercrossing

In the interim condition, demolition of Platform 4 and the associated butterfly shed canopy would occur to implement new run-through service.

In the full build-out condition, the rail yard would be elevated up to approximately 15 feet above the existing elevation to accommodate the Caltrans vertical clearance requirements for new run-through tracks over both the El Monte Busway and US-101. The above-grade passenger concourse with new expanded passageway would also be constructed in the full build-out condition. A portion of the characteristics that qualify LAUS for listing in the NRHP/CRHR would be destroyed or substantially altered; therefore, the proposed project would have a substantial adverse change in significance on the following character-defining features (Figure 3.12-6):

- Platforms – The 21-foot-wide concrete platforms would be demolished, and new, longer, wider concrete platforms (29 feet wide) would be constructed to enhance safety; allow space for proposed elevators, stairs, and escalators; and accommodate building code requirements for loading (ramps and railings would not be replaced). The proposed platforms would be lengthened and elevated up to approximately 15 feet above their present elevation.
- Butterfly Shed Canopy – The butterfly shed canopies above the remaining existing platforms would be demolished because they are too narrow, are not long enough to perform their historic function on the widened and lengthened platforms, and do not take into account the design requirements of multiple operating agencies, each with their own unique needs and train types and each with different design criteria for proximity and clearance of canopies. The newly proposed canopies over each individual platform would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS.
- Pedestrian Passageway (Tunnel), Ramps, Platform Railings, Solid Balustrades – The pedestrian passageway, passenger ramps, platform railings, and solid balustrades would be demolished to make space for the construction of the above-grade passenger concourse with new expanded passageway. The concourse would include multiple egress routes, with public areas integrated into the design. The above-grade passenger concourse would be constructed and the existing pedestrian passageway below the rail yard would be demolished. The new expanded passageway would provide additional passenger travel-path convenience and options. New elevators, escalators, stairs, and ramps would be constructed to achieve compliance with CBC egress and ADA standards. The above-grade concourse with new expanded passageway would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS.
- Terminal Tower – The Terminal Tower would be moved and either reoriented at grade or raised vertically, depending on final design.
- Car Supply Building – The Car Supply Building and retaining walls would be demolished to raise the rail yard by up to 15 feet.

- Undercrossings – The Cesar Chavez Avenue and Vignes Street Undercrossings would be demolished and replaced with new bridges to accommodate the elevated rail yard and the egress requirements from the platforms.
- South Retaining Wall – The proposed run-through track structure over the El Monte Busway and US-101 would be designed to span above the existing south retaining wall, which would be largely obscured from public view, but may still be altered (likely with the run-through tracks structure crossing through the wall) but would be reconstructed in-kind, where feasible, and visible from US-101.

As described above, the portions of the LAUS property that would be demolished would include the following contributing features: platforms, butterfly shed canopies, ramps, railings, pedestrian passageway, solid balustrades off the passageway to the platforms, Cesar Chavez Avenue Undercrossing, and Car Supply Building. Further, the Vignes Street Undercrossing (Figure 3.12-7) would also be demolished. The physical removal of these features would be a substantial change in significance of the historical resource, even though LAUS would retain enough integrity to remain listed in the NRHP/CRHR, due to the preservation of the historic main building (e.g., tile roof, stucco wall cladding, arched main entrance, decorated beams, and tile floors) and other features, such as the ticketing halls, arcades, clock tower, and patios. There would be substantial alterations to the south retaining wall and Terminal Tower. While not a qualifying characteristic, approximately 5 to 7 feet of the Bauchet Street wall at the location where it joins the Avila Street wall would be demolished and replaced by a new wall to provide adequate fire access.

For LAUS and the associated Vignes Street Undercrossing, this is considered a significant impact. Mitigation Measures HIST-1a through HIST-1d (described in Section 3.12.6) are proposed to mitigate this impact; however, impacts would remain significant and unavoidable.

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Figure 3.12-6. Los Angeles Union Station Historical Resource Boundary and Areas of Direct and Indirect Impacts

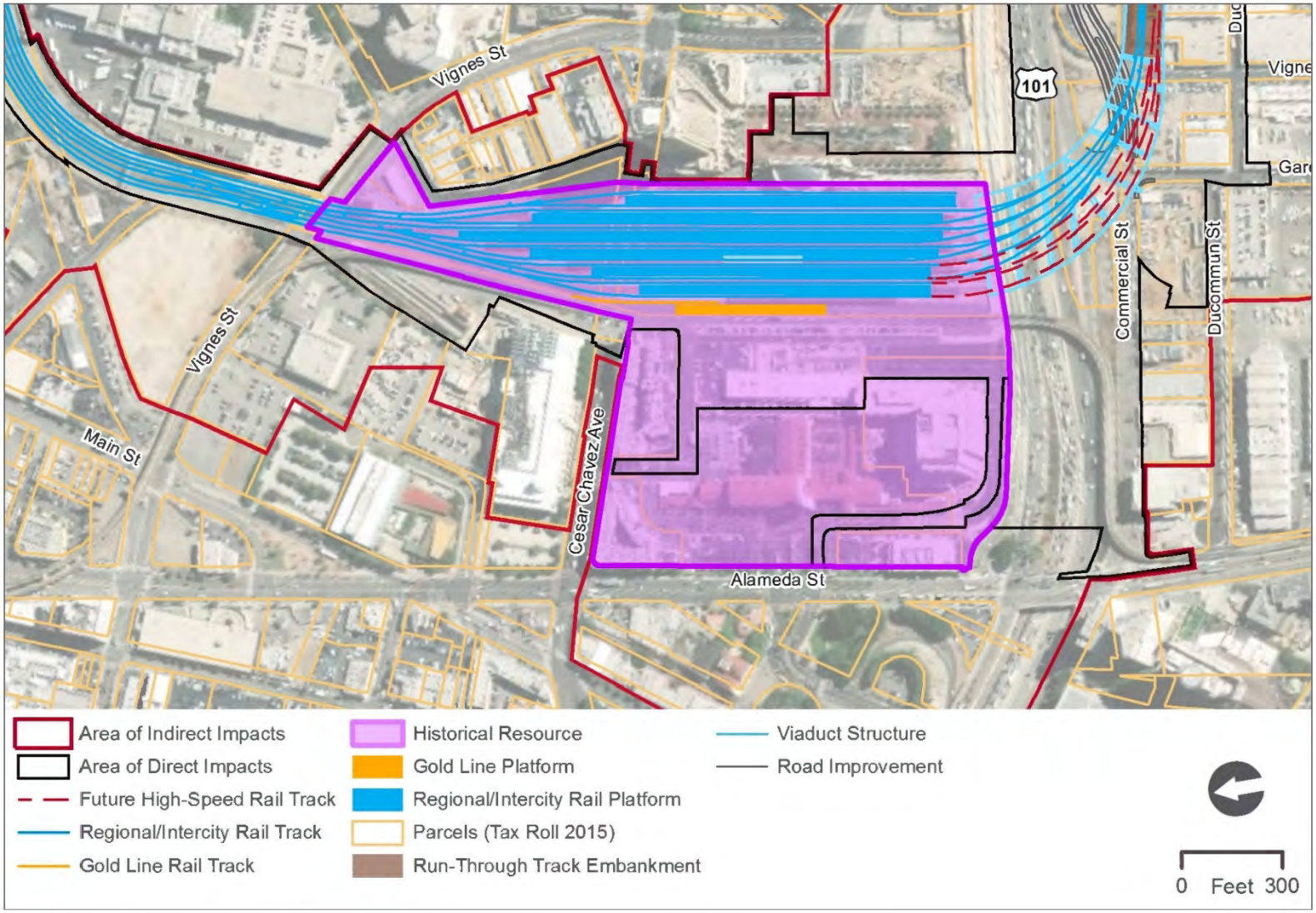

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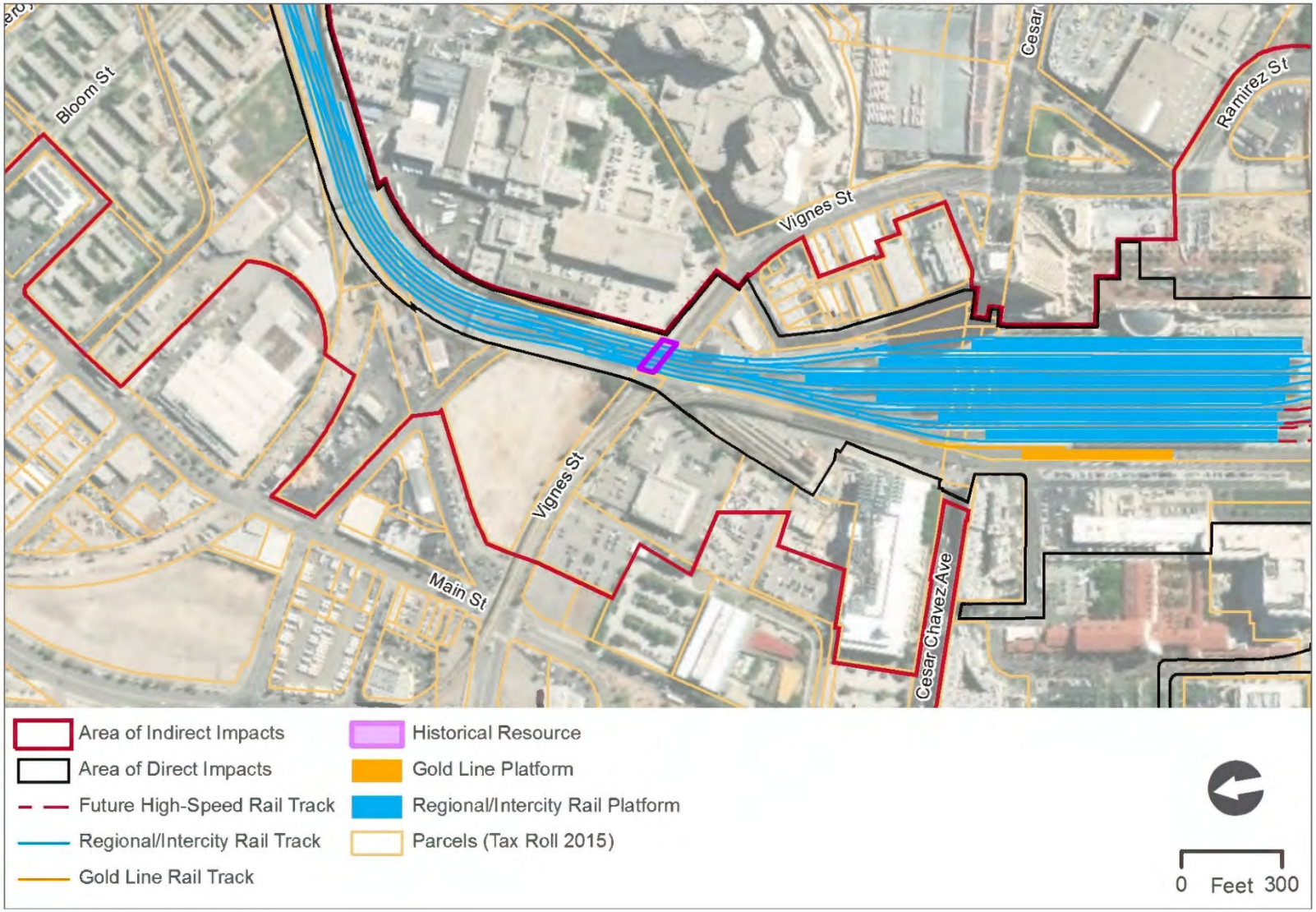
Figure 3.12-7. Vignes Street Undercrossing Historical Resource Boundary and Areas of Direct and Indirect Impacts



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William Mead Homes

The ADI (Figure 3.12-8) includes track improvements and a retaining wall/sound wall that would be located within the railroad ROW. A temporary construction easement is required outside of the railroad ROW to provide space for construction vehicles and equipment to construct the retaining wall/sound wall. Proposed activities within the temporary construction easement would include excavation to set wall footings and staging activities. No permanent encroachment or impacts on the William Mead Homes property, including recreation areas, sidewalks, or streets, would result from the proposed project. Although construction of a retaining wall and sound wall would introduce new visual elements, these features would be restricted to Metro's existing ROW and situated at the rear of the property such that they would not be visible from the property frontage. Nonetheless, this is considered a significant impact. Through ongoing coordination with HACLA and the residents of William Mead Homes to identify appropriate aesthetic treatments, such as wall treatments, captured in Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

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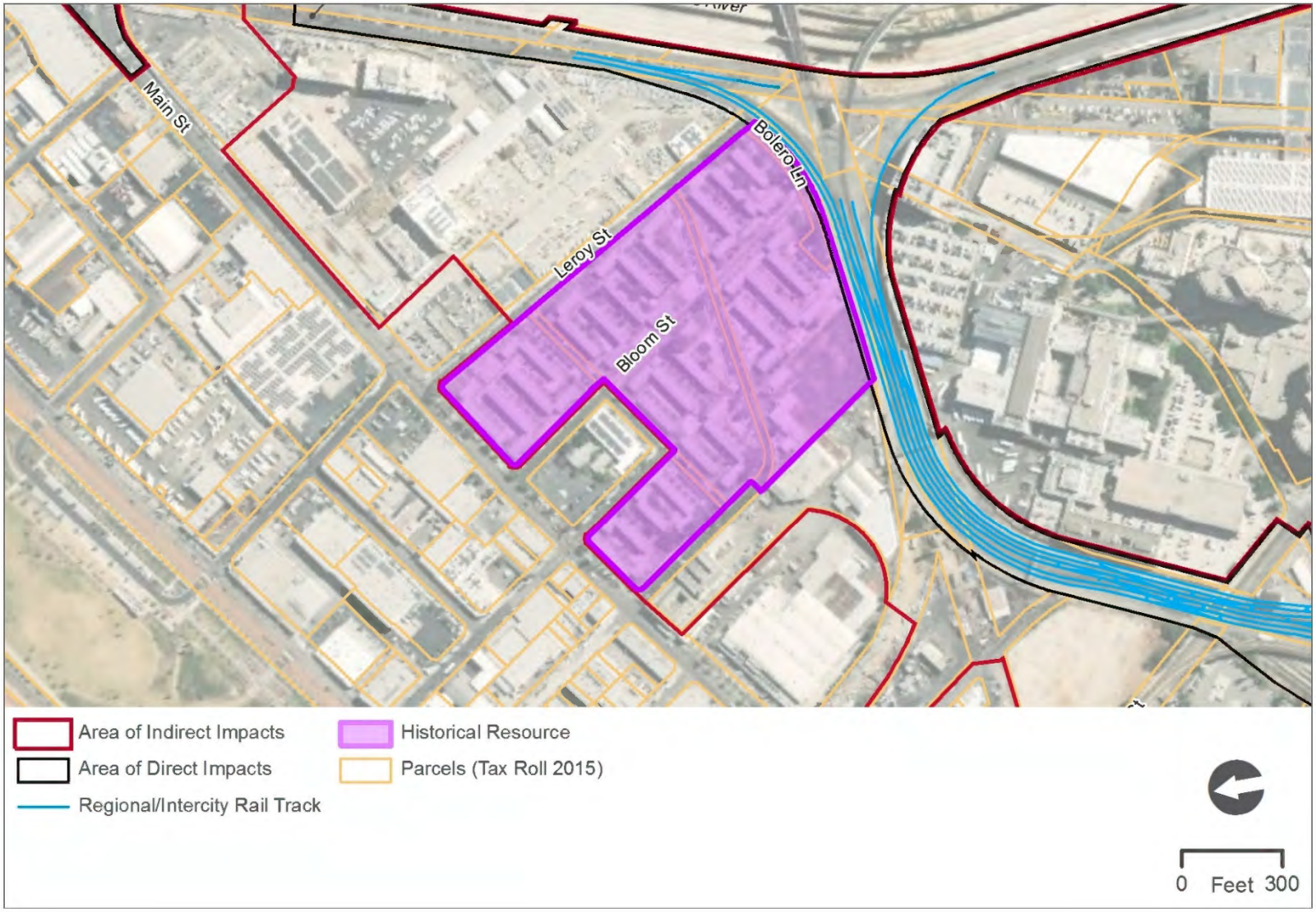
Figure 3.12-8. William Mead Homes Historical Resource Boundary and Areas of Direct and Indirect Impacts



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Friedman Bag Company—Textile Division Building

The Friedman Bag Company—Textile Division Building would be demolished during the interim condition for construction of the loop track (Figure 3.12-9). This is considered a significant impact. Mitigation Measure HIST-3 (described in Section 3.12.6) is proposed to reduce this impact; however, the impact would remain significant and unavoidable.

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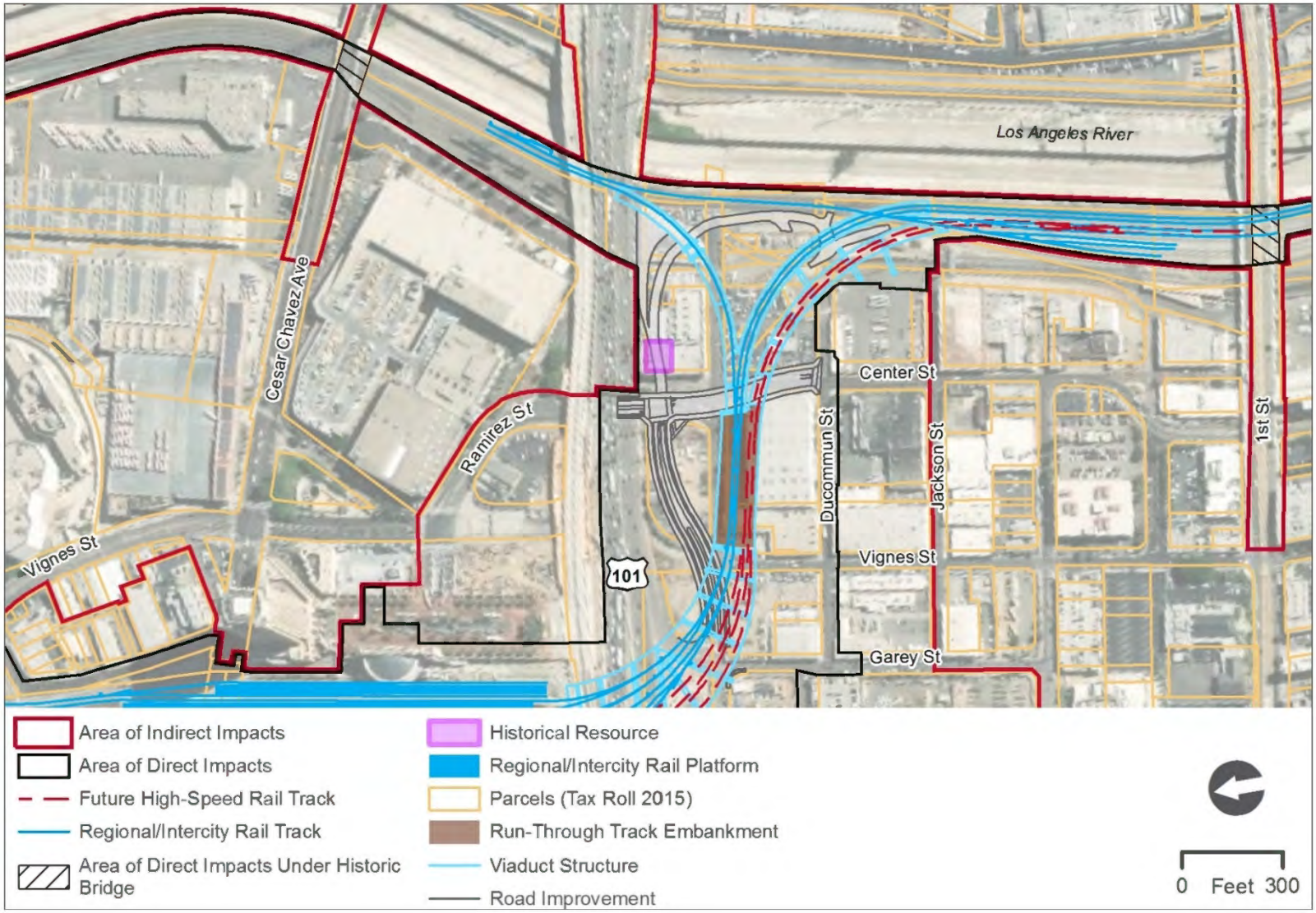
Figure 3.12-9. Friedman Bag Company Historical Resource Boundary and Areas of Direct and Indirect Impacts



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North Main Street Bridge (Bridge #53C 1010)

The proposed project would include safety improvements at the North Main Street Bridge location (Figure 3.12-10). Safety improvements at the North Main Street Bridge include new sidewalk and curb ramps for ADA access; proposed Metrolink wire mesh fence, gates, and hand-railings to keep pedestrians within the sidewalk; modification of northwest and southwest wingwalls to accommodate pedestrian access; modification of the bridge roadway to add a new median (8 inches high, 8 feet wide, and 100 feet long); new pavement and restriping of the roadway to accommodate the new median, and other safety improvements. Work nearby, but not upon, the North Main Street Bridge, includes railroad gate and traffic signal improvements, the addition of a second median to the west of the railroad tracks on North Main Street, and reconfiguration of an existing utility manhole to grade.

These safety improvements have potential to cause a significant impact on the North Main Street Bridge as a historical resource. The bridge's wingwalls are an important character-defining feature, and there is no historic period precedent for a median upon its decking where the new median would be constructed. Mitigation Measure HIST-4 (described in Section 3.12.6) includes provisions that require the design of sidewalks, decking, and wingwalls to follow the Secretary of Interior's Standards for the Treatment of Historic Properties and for the City of Los Angeles Cultural Heritage Commission to review the proposed modifications pursuant to Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance. Upon implementation of Mitigation Measure HIST-4, impacts would be reduced to a level less than significant.

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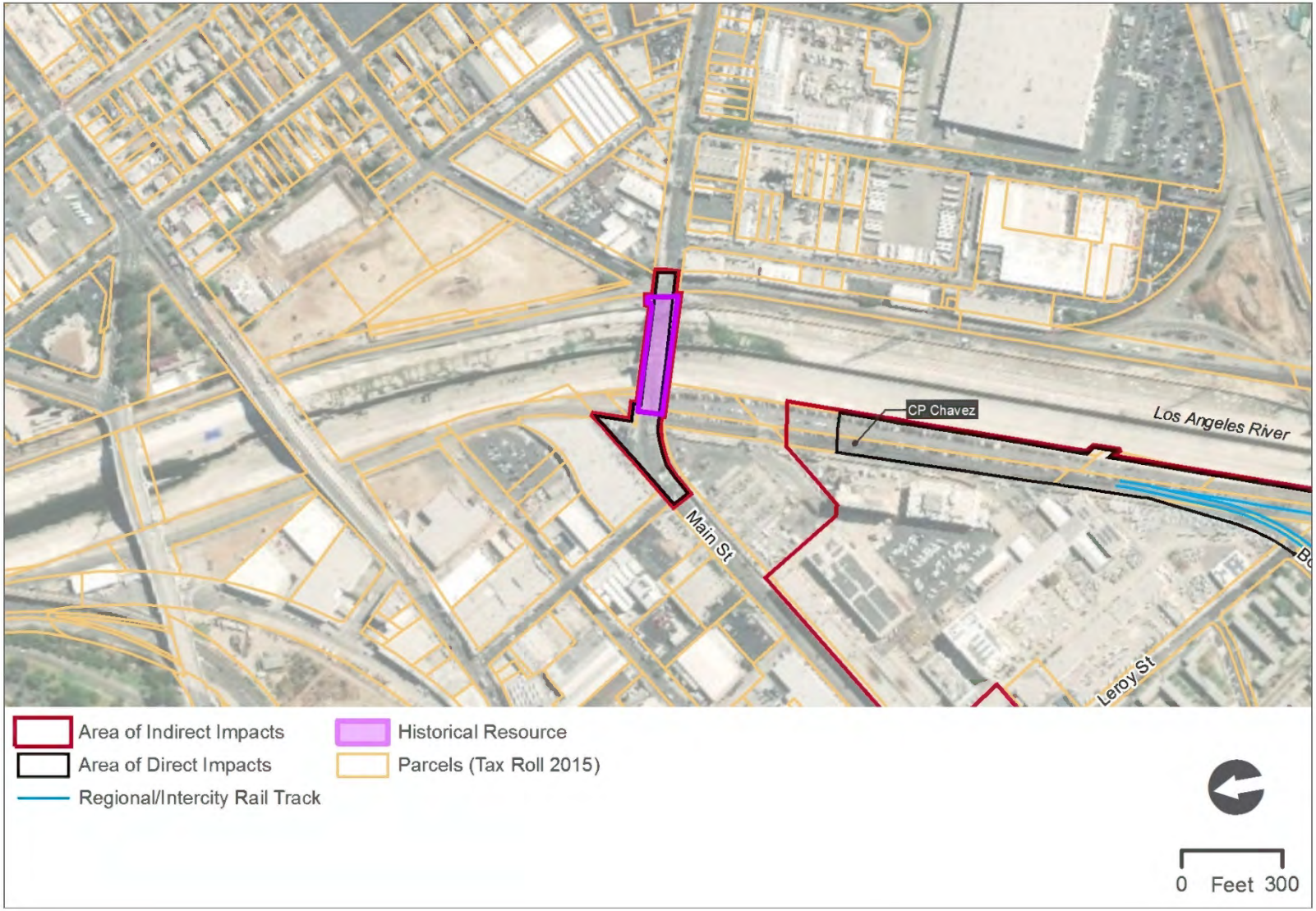
Figure 3.12-10. North Main Street Bridge Historical Resource Boundary and Areas of Direct and Indirect Impacts



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Archaeological Site CA-LAN-1575/H

Archaeological Site CA-LAN-1575/H extends throughout the parcel boundaries of LAUS and likely extends farther. Implementation of any phase of the project would result in disturbance, displacement, or damage to archaeological remains present in Archaeological Site CA-LAN-1575/H. This site has components that are NRHP/CRHR eligible under Criterion D/4 that have yielded, and are anticipated to yield, significant archaeological data related to the Prehistoric/Historic Native American Period (AD 1000 to 1848) and the American Period (1850 to 1966). Past archaeological projects that impacted the site indicate that significant components of Archaeological Site CA-LAN-1575/H would be directly impacted by construction of the proposed project. Features from the remains of Chinatown including privies and architectural elements, such as floors, foundations and a large number of items left by the residents who were forced to relocate may be encountered. Artifacts, features, and possibly human remains may be uncovered from the Native American component.

Under any phase of the proposed project, Archaeological Site CA-LAN-1575/H may sustain direct impacts as the result of proposed construction activities in the ADI (e.g., excavations for utility relocations, retaining walls, bridge supports, and drainage improvements). Although a large percentage of this site has been covered in artificial fill, the proposed depth of construction activities ranges from 5 to 100 feet below the present ground surface. Many activities will penetrate below the maximum recorded level of artificial fill and will likely impact significant archaeological deposits. This is considered a significant impact. Implementation of Mitigation Measures HIST-5 and HIST-6 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once operational, the proposed project would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. There are no anticipated corresponding impacts on any of the built environment historical resources as the result of long-term operations.

Since operations occur at ground surface and intact archaeological resources are buried, there would be no anticipated corresponding impacts on archaeological historical resources throughout operations. Therefore, no impacts from long-term operations would occur.

Indirect Impacts

The following are historical resources that are considered for their indirect impacts:

LAUS – The above-grade passenger concourse with the new expanded passageway is incompatible with LAUS as a historical resource, resulting in indirect visual impacts. Additionally, at this early stage of project design, the elevated portion of the above-grade passenger concourse may include a modern design element over the rail yard, which is incompatible with the historic fabric and other character-defining features of LAUS. The elevated portion of the above-grade passenger concourse is vertical in nature, and with a 90-foot maximum height above existing grade, it would be visible behind the historic concourse and outdoor courtyards, which are extant character-defining features of LAUS. Though the above-grade passenger

concourse incorporates a new expanded passageway in the same general location as the present historic pedestrian passageway that is at-grade and offers a similar pattern of east to west circulation across LAUS, this new expanded passageway is of non-historic dimensions, design, and materials, and would have new vertical and expanded horizontal circulation elements. Unlike the existing condition at LAUS, the elevated portion of the above-grade passenger concourse design would include lighting that would illuminate at night.

Historically, LAUS and its landscape have been experienced primarily, though not completely, in a horizontal, at-grade capacity. A transit rider enters the complex from Alameda Street, either into the waiting room or the ticketing concourse, ultimately moving through enclosed, rectangular courtyards that are traditional features of Spanish Renaissance and Spanish Revival architecture. A visitor might sit and wait temporarily in any of these areas before continuing eastward through the existing passenger concourse and into the pedestrian passageway before ascending up ramps to their respective boarding platform.

As originally designed, LAUS separated the circulation of inbound and outbound passengers through means such as a three part passenger concourse, which is now altered, and a taxi pickup that was once located off the south courtyard, among other features. Arrival and departure separation is no longer a LAUS circulation feature, and though horizontal circulation was a primary feature, axial circulation was not. As presented above, a vertical circulation element with the ascent or descent up or down ramps to board trains has always been historically present, and the introduction in the early 1990s of the Red and Purple Line subways set a precedent for pronounced vertical circulation, compromising the horizontal circulation many historically experienced within LAUS prior. The difference with the elevated portion of the above-grade passenger concourse is that its vertical and expanded circulation elements are prominently expressed in newly introduced and incompatible massing, height, volume, and form, where such elements did not pre-exist, and in a modern style.

Though LAUS's historic courtyards would not be directly impacted, both the elevated portion of the above-grade passenger concourse and the grand canopy associated with the at-grade passenger concourse may be visible from within them. The at-grade passenger concourse features a grand canopy structure that would be 70 feet above the elevated rail yard platforms although lower than the proposed height of the elevated portion of the above-grade passenger concourse. Neither the new expanded passageway element of the above-grade passenger concourse nor the at-grade passenger concourse would be visible from the historic courtyards, LAUS, or beyond.

These indirect impacts on LAUS are considered significant. While Mitigation Measures HIST-1a through HIST-1d (described in Section 3.12.6) are proposed to reduce impacts at LAUS, impacts would remain significant and unavoidable.

William Mead Homes – Construction of a sound wall atop the retaining wall adjacent to the William Mead Homes complex would result in indirect impacts because of the introduction of visual elements associated with a sound wall where there was not previously a wall. However, these features would be restricted to Metro's existing ROW and situated at the rear of the property such that they would not be visible from the property frontage. Nonetheless, this is considered a significant indirect impact for William Mead Homes.

Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

LADWP Main Street Center – The proposed project would introduce a retaining wall within the railroad ROW and adjacent to the historical resource boundary, but no portion of the historical resource or any of the contributing buildings would be acquired. LADWP Main Street Center resource has a utilitarian/industrial character, and the visual impact associated with introduction of a new retaining wall and movement of existing railroad tracks closer to the contributing buildings on the property is considered less than significant.

Mission Tower – The tracks that connect to LAUS that would be elevated for the proposed project would return to grade well before they reach Mission Tower. The visual change from existing condition would be minimal at Mission Tower, and the integrity of the characteristics that qualify it for the CRHR would not be diminished. Therefore, impacts are considered less than significant.

Terminal Annex – The rear of the building would not be destroyed, damaged, nor altered and no portion of the property would be acquired as a result of the proposed project. Potential vibration from work in parcels adjacent to the property is unlikely to disturb the current occupants and function of the building, because drilling, and not pile driving, is proposed at this location. Impacts are considered less than significant.

Macy Street School – For the proposed project, the setting at LAUS, west of the Macy Street School, would be changed, but it does not contribute to historic significance under Criterion 1 (association with events that have made a significant contribution to the broad patterns of history) for ethnic heritage or Criterion 2 (association with the lives of historically important persons) for association with Principal Sterry. Impacts are considered less than significant.

Los Angeles Plaza Historic District – No direct impact on the Los Angeles Plaza Historic District would occur because it will not be physically disturbed or altered by the proposed project. The elevated portion of the above-grade passenger concourse would be a maximum height of 90 feet above existing grade, and the appearance of this infrastructure element may result in an indirect visual impact, as it may be visible from portions of the plaza area. However, none of the characteristics that qualify Los Angeles Plaza Historic District for the CRHR would have their integrity diminished because the views east from the plaza have changed substantially since the end of the period of significance (1932). This view of the landscape has changed dramatically over the last 8 decades due to the construction of LAUS, modernization of Alameda and Los Angeles Streets, construction of US-101 and the El Monte Busway, high-rise condominium buildings, Gateway Plaza, and the MWD Headquarters. Therefore, impacts are considered less than significant.

Denny's Restaurant - . The parking lot would be used as a temporary staging area for the proposed project, and the Denny's building will not be physically disturbed or altered, and its setting would be unchanged after construction is completed. Impacts are considered less than significant.

Archaeological Site CA-LAN-1575/H - During construction activities for any phase of the proposed project, even though the construction site would be fenced and off-limits to the general public, indirect impacts may still result from increased accessibility to archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens may be considered an indirect impact. This is considered a significant impact. Mitigation Measure HIST-5 (described in Section 3.12.6) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.12-B	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5

Archaeological Site CA-LAN-1575/H is recorded within the ADI, and an additional nine archaeological sites have been recorded within 0.25 mile of the ADI. There is potential to encounter and cause a substantial adverse change in the significance of archaeological resource Archaeological Site CA-LAN-1575/H, as well as to previously unrecorded archaeological resources buried within the ADI during any phase of the proposed project with any ground-disturbing work.

Direct Impacts – Construction

Ground disturbance during construction for any phase of the proposed project has a high potential to impact recorded and unrecorded archaeological deposits in this highly sensitive ADI because project components, such as bridges (proposed to be demolished and replaced during the full build-out condition), would have deep excavations. The above-grade passenger concourse would have shallow excavations for foundations punctuated with deep support piles (of up to 100 feet deep) to support the structure over the rail yard. A single multicomponent NRHP/CRHR-eligible resource, Archaeological Site CA-LAN-1575/H, is recorded within the ADI, and there is also the potential to encounter previously unrecorded archaeological resources buried within the ADI. Archaeological Site CA-LAN-1575/H is situated throughout the entire LAUS footprint and likely extends further than the currently defined boundary. Ground-disturbing construction activities during any phase of work would occur in areas known to contain Archaeological Site CA-LAN-1575/H and in areas that may contain previously undiscovered prehistoric and historical archaeological features or sites. This is considered a significant impact. Implementation of Mitigation Measures HIST-5 and HIST-6 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once operational, the proposed project would involve passenger train operations along the railroad corridor and periodic maintenance on the railroad ROW. Since operations would occur at ground surface, and intact archaeological resources are buried, there would be no anticipated corresponding impacts of these operations to archaeological resources. Therefore, no impact would occur.

Indirect Impacts

During construction activities for any phase of the proposed project, even though the construction site would be fenced and off-limits to the general public, indirect impacts may still result from increased accessibility to archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens is considered a significant impact. Mitigation Measure HIST-5 (described in Section 3.12.6) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.12-C	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Direct Impacts – Construction

There is a potential for direct impacts on paleontological resources during any phase of work as a result of construction activities that may result in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Paleontological resource impacts would occur due to deep excavations beneath recent alluvium. Additionally, the above-grade passenger concourse with new expanded passageway (proposed to be built during the full-build-out condition) may result in significant impacts on paleontological resources if paleontologically sensitive sediments are encountered during excavation.

Ground-disturbing construction activities for all phases of work in shallow layers (i.e., fill or recent alluvium) would not impact paleontological resources. However, deeper excavations for foundations and support piers to support the above-grade concourse and other proposed bridge structures (run-through tracks structure, Cesar Chavez and Vignes Street Bridges, etc.) are anticipated to extend up to 100 feet below the surface and have the potential to impact paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but typically 40 to 70 feet deep in the vicinity of LAUS [Appendix O of this EIR]) and underlying Puente Formation (reported at depths of approximately 90 to 100 feet in areas around the newly proposed concourse). This is considered a significant impact. Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once operational, the proposed project would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations occur at ground surface and intact paleontological resources are deeply buried, there would be no anticipated corresponding impacts on these operations to paleontological resources. Therefore, no impact would occur.

Indirect Impacts

Even though the construction site would be off-limits to the general public, indirect impacts during all phases of work may result from increased accessibility by construction personnel to fossils through

construction activities leading to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may occur. This is considered a significant impact. Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.6) are proposed to reduce impacts to a level less than significant.

THRESHOLD 3.12-D	Disturb any human remains, including those interred outside of formal cemeteries

Direct Impacts – Construction

Ground-disturbing construction activities associated with the proposed project during all phases of work would occur in areas with the potential to contain human remains. This is considered a significant impact. Mitigation Measure HR-1 (described in Section 3.12.6) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once operational, the proposed project would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations would occur at ground level and the discovery of human remains would occur only with ground-disturbing construction, there would be no anticipated corresponding impacts of these operations on human remains. Therefore, no impact would occur.

Indirect Impacts

Indirect impacts on human remains during any phase of the proposed project are not anticipated. Therefore, no impact would occur.

THRESHOLD 3.12-E	Cause a substantial adverse change in the significance of a TCR as defined in §21074

Direct Impacts – Construction

The boundary for Tribal Cultural Resource CA-LAN-1575/H is currently associated with the parcel boundaries of LAUS, although it is likely to extend further than its currently defined boundary. Ground-disturbing construction activities for any phases of the proposed project include components (i.e., utility work, storm drain modification work, concourse and bridge support piles, etc.) that would have excavations in areas with the potential to contain Tribal Cultural Resource CA-LAN-1575/H as it relates to the descendants of groups that inhabited the area in the Native American period. This is considered a significant impact. Implementation of Mitigation Measures HIST-5 and HIST-6, as well as TCR-1 (described in Section 3.12.6), are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Once operational, the proposed project would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations would occur at ground surface, and the intact TCR is buried, there would be no anticipated corresponding impacts on these operations to TCRs. Therefore, no impact would occur.

Indirect Impacts

Even though the construction site would be off-limits to the general public, during construction activities associated with any phase of the proposed project, indirect impacts may result from increased accessibility by construction personnel to the TCR (such as artifacts or sacred items) that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens is considered a significant impact. Mitigation Measure HIST-5 (described in Section 3.12.6) is proposed to reduce impacts to a level less than significant.

3.12.6 Mitigation Measures

Historical Resources

Per Section 15126.4(a)(4)(b) of the CEQA Guidelines, mitigation measures must be roughly proportional to the impacts of the project. As result, the mitigation measures for LAUS Historical Resources include four parts (HIST-1a to HIST-1d) because the historical resource is recognized as significant at multiple levels (City of Los Angeles Historic-Cultural Monument, California Historical Landmark, and listed in the NRHP/CRHR when it was found to have exceptional importance) and because multiple character-defining features would be demolished or altered as a result of the proposed project. In addition, due to the association of the historical resource Vignes Street Undercrossing with LAUS, the mitigation measures for the undercrossing are included under relevant LAUS mitigation measures (HIST-1a to HIST-1b). Similarly, the mitigation measures for William Mead Homes and Friedman Bag Company—Textile Division Building (HIST-2 and HIST-3), and the North Main Street Bridge (HIST-4) are commensurate with the significance of each resource and the extent of impacts from implementation of the proposed project. Mitigation for Archaeological Site CA-LAN-1575/H is presented below (HIST-5 and HIST-6). The following measures are proposed to reduce significant impacts related to historical resources.

HIST-1a LAUS City of Los Angeles Cultural Heritage Commission (CHC) Review and Consultation: Metro shall comply with the applicable Cultural Heritage Ordinance sections for LAUS. Per Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance, no person, owner or other entity shall demolish, alter, rehabilitate, develop, construct, restore, remove, or change the appearance of any Designated HCM without first having applied for and been granted a permit. The Director of Planning may refer a permit to the CHC when there is potential discrepancy between the proposal and the standards. The CHC may vote to object or not object to the issuance of a permit, for up to 180 days, with an additional 180-day extension to the objection period upon a vote of the City Council.

HIST-1b LAUS HABS-Like Documentation: Historic Resource Recordation: Impacts resulting from the demolition or alteration of character-defining features of LAUS shall be minimized through archival documentation of as-built and as-found condition. Prior to initiation of construction work at LAUS, Metro shall ensure that documentation of the character-defining features proposed for demolition is completed in a manner similar to a HABS, Level I survey documentation. The further documentation of LAUS shall include large-format photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's professional qualification standards for history and/or architectural history. The archival documentation shall be donated to a suitable repository, such as the City of Los Angeles Public Library.

At a minimum, but not limited to, the following character-defining features shall be included in this documentation:

- Pedestrian passageway
- Ramps
- Railings
- Platforms
- Butterfly shed canopies
- South retaining wall
- Terminal Tower
- Car Supply/Maintenance Building
- Cesar Chavez Avenue Undercrossing
- Vignes Street Undercrossing (this bridge, which was constructed as part of LAUS, does not require additional individual HABS documentation)

HIST-1c LAUS Restoration of the Existing Passenger Concourse: To ensure compatibility with the architecturally significant buildings that are part of LAUS and to mitigate the demolition or alteration of character-defining features at LAUS, the original passenger concourse shall be restored, where feasible, from an engineering and constructability standpoint, to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration. The original passenger concourse is a distinct transitional space between the waiting hall and the pedestrian passageway, having a low and flat ceiling with chamfered, rectangular columns with flared capitals. The original passenger concourse presently contains multiple retail spaces, restrooms, Amtrak ticketing and baggage handling, and the entrance to the subterranean Red and Purple subway lines. This includes possible redesign of the entrance to the Metro Red Line Subway to be more compatible with the historic LAUS design. Metro shall design and

implement the restoration in consultation with and with approval from the City of Los Angeles CHC and OHR prior to finalizing design.

HIST-1d LAUS Educational Exhibit: Because the passenger interface (i.e., the pedestrian passageway, ramps, railings, and butterfly shed canopies) between the trains and the architecturally significant buildings at LAUS would be demolished and replaced by a new design, an educational display would be created by Metro and installed at LAUS that could be viewed by the public and would demonstrate the history of LAUS and how it was used by past railroad passengers. Metro shall design and implement the educational display in consultation with the City of Los Angeles CHC and OHR prior to finalizing design.

HIST-2 William Mead Homes Consultation: Mitigation Measure AES-1 (described in Section 3.4, Aesthetics) requires coordination with HACLA on the aesthetic treatments for the proposed retaining wall and sound wall. Metro shall send copies of pertinent consultation documentation regarding proposed retaining wall and sound wall design and/or aesthetic treatments including plans, specifications, and other documentation to the City of Los Angeles OHR to keep them apprised of the consultation process.

HIST-3 Friedman Bag Company—Textile Division Building-City of Los Angeles Office of Historical Resources Review and Consultation and HABS-Like Documentation: Prior to demolition, the character-defining features of the historical resource shall be photographed in a manner similar to HABS standards, submitted to OHR for review and approval, and the archival documentation shall be donated to a suitable repository, such as the City of Los Angeles Public Library.

HIST-4 North Main Street Bridge City of Los Angeles CHC Review and Consultation: Metro shall ensure that prior to construction, work proposed on all elements and character-defining features of the North Main Street Bridge, including, but not limited to, its sidewalks, decking, and wingwalls, shall follow the Secretary of Interior's Standards for the Treatment of Historic Properties. The North Main Street Bridge is designated a LAHCM (#901). Pursuant to Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance, no person, owner or other entity shall demolish, alter, rehabilitate, develop, construct, restore, remove, or change the appearance of the North Main Street Bridge without first having applied for and been granted a permit by the City of Los Angeles. The Director of Planning may refer a permit to the CHC when there is a potential discrepancy between the proposal and the standards. The commission may vote to object or not object to the issuance of a permit, for up to 180 days, with an additional 180-day extension to the objection period upon a vote of the City Council.

HIST-5 Archaeological Site CA-LAN-1575/H: Preparation of a CRMMP: Prior to construction, Metro's qualified archaeologist shall develop a CRMMP that includes the treatment and management for known historical resources, determines thresholds of significance for each of the feature types encountered, and the process for treating unanticipated discoveries. The CRMMP shall contain a robust research design, a data recovery plan, a monitoring plan for sensitive areas,

and a plan for the analysis and long-term curation of archaeological materials recovered during construction. The CRMMP shall detail the discovery protocol if human remains and/or funerary objects, sacred objects, and objects of cultural patrimony are encountered and shall include a plan for reburial in an appropriate location. The CRMMP shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management*.

Consulting Tribes under AB 52 for the project shall have the opportunity to review and comment on the Draft CRMMP. Provisions within the CRMMP may include arrangements with tribal representatives, for example, to respectfully reinter tribal resources on site if practicable.

The CRMMP shall include, at a minimum, the following:

- *Efforts to Preserve and Protect in Place*: The CRMMP, per CEQA Guidelines 15162.4(b)(3), shall attempt to avoid impacts on Archaeological Site CA-LAN-1575/H and preserve in place any areas where significant components of Archaeological Site CA-LAN-1575/H are known to exist.
- *Development of a Preconstruction Site-Specific Sensitivity Model:* Final design feature location and the respective level and depth of ground disturbance shall serve as the basis for impact on known locations of previously recorded archaeological features. Comparison with historic maps for the area shall identify specific site features buried within the project study area, if any. Further, specific geotechnical boring results and past archaeological reports that identify depth of fill shall determine the level of sensitivity to encounter archaeological remains for each construction component. A three-dimensional model or other relatable graphic depiction shall be created to assist Metro with the interpretation of potential archaeological impacts.
- *Phasing of Feature Testing in Advance of Construction, Excavation, and Recovery:* The CRMMP shall contain very specific methodology regarding testing of known features identified through the development of the sensitivity model. Due to the extreme constraints posed by the project area location (affecting public transportation through closure of roads, etc.), testing shall occur as part of the preconstruction activities. This CRMMP shall also contain specific methodology regarding feature evaluation, data recovery, and analysis for reporting.
- *Archaeological Monitoring*: The CRMMMP shall identify monitoring locations and protocols based on the final design and potential impacts. Metro shall retain archaeological monitors who will be supervised by a qualified archaeologist who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and experienced in analysis and evaluation of the types of material anticipated to be encountered. All archaeological monitors shall be trained in the types of materials they may encounter. The CRMMP shall rely on an Occupational Safety and Health

Administration-qualified determinations in regards to the safety of monitoring locations and the potential for contaminated soils or other hazards.

- *Worker Environmental Awareness Program Training (WEAP):* A qualified archaeologist shall be retained to prepare a cultural resource-focused WEAP training that shall be given to all ground-disturbing construction personnel to minimize harm to Archaeological Site CA-LAN-1575/H and any previously undiscovered archaeological resources. Topics to be included for WEAP training shall be identified in the CRMMP. All site workers shall be required to complete WEAP Training, with a focus on cultural resources, including education on the consequences of unauthorized collection of artifacts, and a review of discovery protocol. WEAP training shall also explain the requirements of mitigation measures that must be implemented during ground-disturbing construction activities in archaeologically sensitive areas.
- *Archaeological Reporting*. All archaeological reports shall meet the requirements set forth for reporting in the CRMMP and be submitted to Metro.
    - *Evaluation and Data Recovery Reports:* Where archaeological evaluation and data recovery are required, the results shall be documented in an evaluation and data recovery report. This document shall summarize the evaluation efforts and data recovery results. For each site or feature that undergoes data recovery, the report shall be prepared in accordance with the guidelines established by the Secretary of the Interior's Standards for Archaeological Documentation and the Archaeological Resource Management Reports: Recommended Contents and Format.
    - *Archaeological Monitoring Report:* Metro's qualified archaeologist shall prepare a yearly written report detailing monitoring activities performed at Archaeological Site CA-LAN-1575/H and at any other previously undiscovered archaeological site. A final monitoring report shall be written by Metro's qualified archaeologist upon completion of grading and excavation activities within cultural bearing soils. The yearly report shall include the results of the fieldwork for the time period and all appropriate laboratory and analytical studies that were performed in conjunction with excavations.
- *Curation of Archaeological Collections:* Archaeological collections are comprised of several components, including but not limited to artifacts, environmental and dating samples, field documentation, laboratory documentation, photographic records, related historical documents, and reports. All artifacts, notes, photographs, and other materials recovered during the monitoring program related to Archaeological Site CA-LAN-1575/H, and any historical resource encountered during construction shall be curated or reburied by Metro, following the specific guidelines presented in the CRMMP.

HIST-6 Development of a Public Participation or Outreach Plan: Prior to construction, Metro shall develop a public outreach and educational plan that includes continued consultation and input from Native American Tribes consulting under AB 52 and other potential stakeholders. The plan may include visual/educational exhibits or murals within LAUS, the development of an educational telephone application, or other published or digital educational material that may be used to inform the public regarding the significance of Historic Chinatown or earlier use and sacredness of the area as it relates to Native Americans.

AES-1 Aesthetic Treatments (described in Section 3.4, Aesthetics)

Paleontological Resources

The following mitigation measures are proposed to avoid, minimize, and/or reduce significant impacts related to paleontological resources.

PAL-1 Prepare a Paleontological Mitigation Plan (PMP): It is anticipated that Quaternary older alluvium or Puente Formation, which have a high sensitivity level, would be impacted during construction. A PMP shall be prepared by Metro's qualified Paleontologist using final excavation plans to determine where these geologic units would be impacted, and Metro shall implement the PMP prior to the start of any ground-disturbing construction activities. The PMP shall include site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery.

The PMP shall include a requirement for full-time paleontological monitoring if excavations would occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that only impact artificial fill and Quaternary alluvium.

The PMP shall detail a discovery protocol in the event potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt surface disturbing activities in the immediate area (within a 25-foot radius of the discovery), and a qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in conformance with state guidelines and best practices. Construction activities may continue on other areas of the project site while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by a qualified paleontologist.

PAL-2 WEAP Training: Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be given to all ground-disturbing construction personnel. All site workers shall be required to complete WEAP training with a focus on paleontological resources, including a review of what to do in the case of an unanticipated fossil discovery, as identified in the PMP.

PAL-3 Curation: Significant fossils recovered during construction shall be curated by Metro in perpetuity at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition of any salvaged specimens) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow identification of the fossils. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.

Human Remains

The following mitigation measure are proposed to avoid, minimize, or reduce significant impacts related to human remains.

HR-1 Human Remains: In the event that any human remains or related resources are discovered during construction, such resources shall be treated in accordance with applicable state and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate. All construction affecting the discovery site shall immediately cease until the County Coroner is contacted (within 24 hours of the discovery of potential human remains, as required by CEQA Guidelines, Section 15064.5[e]), and the human remains are evaluated by the County Coroner for the nature of the remains and cause of death. The County Coroner must determine within 2 working days of being notified if the remains are subject to their authority. PRC Section 5097.98 requires that the immediate vicinity where the discovery occurred be subject to no further disturbances and be adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. If the remains are determined to be of Native American origin, the coroner shall contact the NAHC by phone within 24 hours, and the NAHC shall be asked to determine the most likely descendants who are to be notified or, if the remains are unidentifiable, to establish the procedures for burial within 48 hours of notification. All parties involved shall ensure that any such remains are treated in a respectful manner and that all applicable local, state, and federal laws are followed. This discovery protocol shall be included in the CRMMP.

Tribal Cultural Resources

The following mitigation measure are proposed to avoid, minimize, or reduce significant impacts related to TCRs.

TCR-1 Native American Monitoring*:* To ensure TCRs are treated with culturally appropriate dignity, Metro shall retain a Native American monitor to be present at all phases of work with the potential to impact Archaeological Site CA-LAN-1575/H. A Native American monitor shall also be present at all phases of work with the potential to impact other previously undiscovered archaeological resources related to ethnohistoric or prehistoric archaeological deposits. The Native American monitor shall be selected from a tribal group with ancestral ties to this location, to be present alongside the archaeological monitor. The CRMMP shall guide Native American monitoring and shall include details on the potential discovery of previously undiscovered ethnographic and prehistoric archaeological deposits, human remains, and other sensitive resources.

3.12.7 CEQA Significance Conclusions

A summary of the level of significance after implementation of mitigation is as follows:

- For LAUS and the associated Vignes Street Undercrossing, Mitigation Measures HIST-1a through HIST-1d are proposed; however, impacts would remain significant and unavoidable.
- For William Mead Homes, Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 would reduce significant impacts to a level less than significant.
- For the Friedman Bag Company—Textile Division Building, Mitigation Measure HIST-3 is proposed; however, impacts would remain significant and unavoidable.
- For the North Main Street Bridge, Mitigation Measure HIST-4 would reduce significant impacts to a level less than significant.
- For Archaeological Site CA-LAN-1575/H, implementation of Mitigation Measures HIST-5 and HIST-6 would reduce significant impacts to a level less than significant.
- For human remains, Mitigation Measure HR-1 would reduce significant impacts to a level less than significant.
- For TCR, implementation of Mitigation Measures HIST-5 and HIST-6, as well as TCR-1, would reduce significant impacts to a level less than significant.
- For paleontological resources, implementation of Mitigation Measures PAL-1 through PAL-3 would reduce significant impacts to a level less than significant

3.13 Public Services

3.13.1 Introduction

This section provides an evaluation of the project in relation to public services within the project study area. Information contained in this section is summarized from the *Link US Community Impact Assessment* prepared for the project (Appendix D of this EIR) in combination with published sources.

3.13.2 Regulatory Framework

Table 3.13-1 identifies and summarizes applicable laws, regulations, and plans relative to public services.

Table 3.13-1. Applicable Laws, Regulations, and Plans for Public Services

Law, Regulation, or Plan	Description
Local	
City of Los Angeles General Plan Framework Element	The City of Los Angeles General Plan Framework Element acknowledges that infrastructure improvements will be required to support the needs of the City's growth and, at the same time, to replace existing facilities that have deteriorated due to age or have become obsolete. The Framework Element states that the costs for such improvements will be shared by new development and existing residents and businesses. The share of these costs by new development will be in proportion to the demands that it generates.
City of Los Angeles General Plan Open Space Element	The City of Los Angeles General Plan Open Space Element identifies designated existing open space land in public and private ownership as well as areas designated for future open space use. The plan includes goals, objectives, policies, and programs regarding the regulation and use of open spaces.
City of Los Angeles General Plan Service Systems Element	According to the City's Public Recreation Plan, which is part of the Service Systems Element of the General Plan, provides standard ratios for parks to population, including 2 acres per 1,000 residents for neighborhood parks and 2 acres per 1,000 residents for community parks, or 4 acres per 1,000 residents of combined neighborhood and community parks, and a minimum 6 acres of regional recreational facilities for every 1,000 persons for long-range needs; a minimum of one acre of neighborhood and community parks for every 1,000 persons to meet short- and intermediate-range standards and the overall provision of 1 acre of land per 1,000 persons for total recreational facilities.

Source: Appendix D of this EIR

3.13.3 Methods for Evaluating Environmental Impacts

Potential impacts on public services were evaluated by conducting an inventory of facilities located within or adjacent to the project study area, comparing existing facilities and service capacity against the project's contribution to anticipated future demand increases, and determining which facilities are most likely to be impacted due to their distance to the construction area and ongoing operations.

Parks and other public facilities were identified through review of available mapping, previous studies, and the City's General Plan. The analysis includes an evaluation of potential physical deterioration of existing facilities and the need for new facilities.

3.13.4 Existing Conditions

Parks

The City's parks system includes more than 16,000 acres of parkland, offering recreational, social, and cultural programs at 444 park sites in the City's neighborhoods. There are no parks or recreational facilities open to the public in the project study area. As depicted on Figure 3.13-1 and summarized in Table 3.13-2, several parks and recreational facilities are within a 0.5-mile buffer of the project study area.

Table 3.13-2. Parks and Recreational Facilities within 0.5 mile of Project Study Area

Park/Recreational Facility Name	Park/Recreational Facility Description
City Hall Park Center	City Hall Park Center is located at 200 Main Street in Los Angeles, approximately 0.31 mile west of the project study area. The park is approximately 1.65 acres, and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The park is accessible from Main Street, First Street, and Spring Street.
Grand Park	Grand Park is located at 200 Grand Avenue in Los Angeles, approximately 0.32 mile west of the project study area. The park is approximately 8 acres and is owned by Los Angeles County. The Los Angeles Music Center has a contract to operate Grand Park until mid-2017. The park is accessible from Grand Avenue and Hill Street.
Fort Moore Pioneer Memorial Park	Fort Moore Pioneer Memorial Park is located at 430 Hill Street in Los Angeles, approximately 0.25 mile west of the project study area. The park is approximately 1 acre, and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The park is adjacent to the Ramon C. Corines School of Visual Arts. The park is accessible by foot from Hill Street.
Los Angeles Plaza Park	Los Angeles Plaza Park, also known as Father Serra Park, is located at 125 Paseo De La Plaza in Los Angeles, approximately 50 feet west of the project study area. The park is approximately 1 acre and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The park is accessible from Los Angeles Street or Main Street.
Ord and Yale Street Park	Ord and Yale Street Park, also called the Alpine Recreation Center Expansion project or Vertical Park project, is an approximately 1 acre future planned park, approximately 0.27 mile west of the project study area. The future planned park site is owned by the City of Los Angeles Department of Recreation and Parks. The park is anticipated to be accessible from Cleveland Street.

Table 3.13-2. Parks and Recreational Facilities within 0.5 mile of Project Study Area

Park/Recreational Facility Name	Park/Recreational Facility Description
Alpine Recreation Center	Alpine recreation center is located at 817 Yale Street in Los Angeles, approximately 0.40 mile northwest of the project study area. The recreation center is owned and operated by the City of Los Angeles Department of Recreation and Parks. The recreation center is accessible from Cleveland Street.
Elysian Park	Elysian Park is located at 835 Academy Road in Los Angeles, approximately 0.38 mile north of the project study area. The park is the second largest park in Los Angeles at 600 acres and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The park is accessible from Solano Canyon Drive.
Los Angeles State Historic Park	Los Angeles State Historic Park is located at 1245 Spring Street in Los Angeles, approximately 0.22 mile northwest of the project study area. The park is approximately 32 acres and is owned and operated by the California Department of Parks and Recreation. The park is accessible from Spring Street.
Downey Recreation Center	Downey Recreation Center is located at 1772 Spring Street in Los Angeles, approximately 0.17 mile northeast of the project study area. The recreation center is approximately 9 acres and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The recreation center is accessible from Avenue 18.
Los Angeles River Bicycle Path	The Los Angeles River Bicycle Path is a Class I bicycle and pedestrian path (completely separated from vehicle traffic) that runs along the concrete banks of the Los Angeles River. The section of the bicycle path along the eastern boundary of the project study area has not yet been constructed. The Los Angeles River Bicycle Path is owned and operated by the Los Angeles River Authority, which includes the City of Los Angeles, the County of Los Angeles, and the USACE. The bicycle path is accessible from any adjacent street located east of the Los Angeles River.
Aliso Triangle	Aliso Triangle, a small pocket park, is located at the intersection of Progress Place and Pleasant Avenue, approximately 0.10 mile east of the project study area. The park is approximately 0.2 acre and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The park is accessible from Progress Place and Pleasant Avenue.
Pecan Recreation Center	Pecan Recreation Center is located at 127 Pecan Street in Los Angeles, approximately 0.42 mile east of the project study area. The recreation center is approximately 2 acres and is owned and operated by the City of Los Angeles Department of Recreation and Parks. The recreation center is accessible from Gless Street.
William Mead Homes	William Mead Homes is located at 1300 Cardinal Street in the northern portion of the project study area. The site is accessible from Main Street, Leroy Street, Elmyra Street, and Bolero Lane. William Mead Homes is public housing complex aimed at providing affordable housing for low income residents. The housing complex includes several communal recreational facilities on-site including a handball/racquetball facility and a baseball field. The facilities are closed to the general public and only accessible to William Mead Homes residents.

Source: Appendix D of this EIR

Notes:
USACE=United States Army Corps of Engineers

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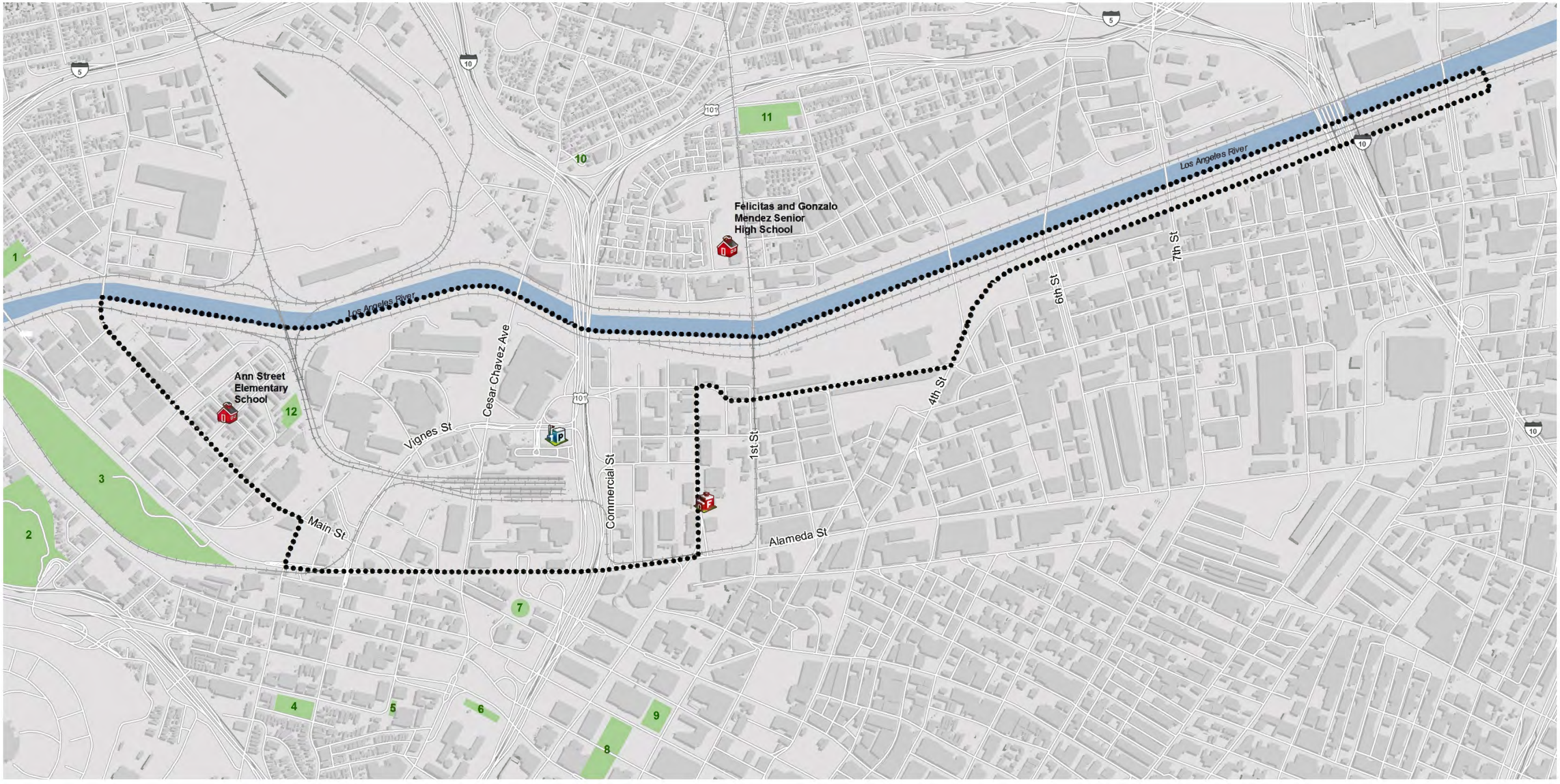
Figure 3.13-1. Parks and Public Services within 0.5 mile of Project Study Area



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Schools

As depicted on Figure 3.13-1, there is one public school (Ann Street Elementary School) located within the project study area and one public school (Felicitas and Gonzalo Mendez Senior High School), located within 0.25 mile of the project study area. Ann Street Elementary School (located at 126 East Bloom Street, Los Angeles, California 90012) is adjacent to William Mead Homes and serves fourth through sixth grade students. This facility is managed by the Los Angeles Unified School District. Felicitas and Gonzalo Mendez Senior High School (located at 1200 Plaza Del Sol, Los Angeles, California 90033) is located 0.16 mile west of the minor track improvements near First Street and serves 9th through 12th grade students. The facility is managed by the Los Angeles Unified School District.

Law Enforcement

Law enforcement services in the project study area are provided by the City of Los Angeles Police Department, Amtrak Police, and the Los Angeles County Sheriff's Department. As depicted on Figure 3.13-1, a Los Angeles County Sheriff's Department office is located in the project study area to the east of LAUS; however, there are no police stations in the project study area. Los Angeles County Sheriff's Department provides general law enforcement services to Metro, along with 40 contract cities, 90 unincorporated communities, 216 facilities/hospitals/clinics, 9 community colleges, and 47 Superior Courts of California in Los Angeles County (Appendix D of this EIR). The nearest police station is the Central Community Police Station at 251 Sixth Street, approximately 0.5 mile west of the project study area. However, officers routinely patrol LAUS and the terminal areas and additional security is provided by surveillance cameras at platforms and throughout LAUS which are monitored by security personnel. In addition, conductors aboard both regional/intercity trains act as security personnel for confirmation of paid tickets and removal of non-ticketed passengers.

As of July 1, 2017, Metro amended its law enforcement structure to include a multi-agency policing model inclusive of Metro's Transit Security Guards and contract security personnel. Metro's law enforcement model includes the Los Angeles Police Department, Los Angeles County Sheriff's Department and Long Beach Police Department. This multiagency approach would allow for higher visibility, enhanced response time, improved customer experience, and deployment of specifically trained officers to engage patrons with mental illness and/or homelessness.

Fire Protection

Fire protection services in the project study area are provided by the City of Los Angeles Fire Department (LAFD). As depicted on Figure 3.13-1, there is one fire station, LAFD Fire Station 4, located in the project study area at 450 Temple Street in the Little Tokyo/Olvera Street/Chinatown community.

From January to June 2016, the average LAFD response times were 1 minute, 2 seconds for average call processing; 1 minute, 5 seconds for average turnout time (i.e., the time from station-acknowledged notification of the emergency until the time the response apparatus leaves the station); and 4 minutes, 17 seconds for average travel time for incidents involving emergency medical services; and 4 minutes,

15 seconds average travel time for non-emergency medical services incidents (Appendix D of this EIR). The National Fire Protection Association has established national performance standards for response times, which is 1 minute, 20 seconds for turn out and 4 minutes for travel time (Appendix D of this EIR).

3.13.5 Environmental Impacts

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts on public services would be considered significant if the project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

   i. Fire Protection

   ii. Police Protection

   iii. Schools

   iv. Parks

   v. Other Public Facilities

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no significant impact or are otherwise inapplicable to the actions associated with the project.

A. Provision of or Need for New or Physically Altered Governmental Facilities

   iii. Schools – The project does not include residential development, and therefore, the project would not increase the population of the project study area. As no residential units are proposed, there would not be an increase in the number of school-age children in the area, and thus, no new demand for educational services would be generated. The schools located in the vicinity of the project study area, would not be physically impacted or altered in a way that would cause relocation or need for new facilities. No impact is identified for this issue area.

   iv. Parks – As depicted on Figure 3.13-1, there are no parks or recreational facilities open to the public in the project study area. The parks or recreational facilities located outside of the project study area are not readily accessible from LAUS. It is not expected that parks or recreational facilities would be overburdened or subject to increased use that would accelerate physical deterioration of park facilities. The proposed project would not substantially induce population growth in the project study area and thereby would not

significantly increase the need for parks. Furthermore, no direct physical impacts on parks would occur from implementation of the project. No impact associated with the provision of new or physically altered parks would occur.

The recreational facilities located within the William Mead Homes development are closed to the general public and only accessible to William Mead Homes residents. Therefore, the proposed project would not increase the demand at these facilities, necessitating the need for new or physically altered recreational facilities.

v. Other Public Facilities – The project does not include housing and would not generate population growth that would affect other public facilities such as libraries. Operation of the project is not expected to substantially affect access to the public facilities, or disrupt the basic functions of the facilities in the project vicinity. No impact is identified for this issue area.

Impact Analysis

THRESHOLD 3.13-A	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i. Fire Protection ii. Police Protection

Direct Impacts – Construction

Fire Protection and Law Enforcement

One fire station, LAFD Fire Station 4, is located in the project study area at 450 Temple Street in the Little Tokyo/Olvera Street/Chinatown community. Depending on the nature of the response, fire response may come from this location or from two to four of the surrounding fire stations. Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times; however, these disruptions are expected to be temporary and intermittent. Similar impacts on law enforcement services could also occur with implementation of the project, thereby further affecting response times. The potential for an impact would occur during construction of the interim and full build-out conditions, primarily related to construction of the run-through track infrastructure south of US-101 and reconstruction of existing Vignes Street and Cesar Chavez Avenue Bridges. In the full build-out with HSR condition, there would be less potential for impacts on emergency response times because roadway construction would be complete prior to implementation of the planned HSR system. Therefore, this is considered a significant impact. Mitigation Measure TR-1 (discussed in Section 3.3, Transportation and Traffic) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Fire Protection and Law Enforcement

The project is located in a portion of the city with higher than average LAFD service coverage and fire flow levels are more than adequate. The project engineering team is coordinating with the LAFD to ensure fire/life safety issues are adequately addressed as part of the design of the project. The LAFD, LASD, and City of Los Angeles Police Department already service the project study area, and because the project is not anticipated to cause a substantial demand for fire protection and law enforcement, the project is not anticipated to affect service ratios, response times, or other performance objectives throughout operation.

As previously discussed, in 2031 and 2040, minimal project-related increases in delay are expected at intersections within the traffic study area. Internal roadway reconfiguration and associated modifications to fire lanes and access roads would not significantly affect emergency access, primarily because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained from Patsaouras Transit Plaza, which would provide emergency and fire lane access to the eastern side of the station. Any or all modifications made would be coordinated and approved by the Fire Marshal to ensure the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the identified evacuation routes as identified by the City. Impacts are considered less than significant.

Indirect Impacts

The project would not directly generate population growth or require provision of new public services. Any new private development around LAUS would be subject to the City's General Plan, which sets policies and goals for provision of public services such as schools, parks, fire, police, and other public facilities. Impacts are considered less than significant.

3.13.6 Mitigation Measures

Implementation of the following mitigation measure are proposed to reduce impacts related to public services.

TR-1 Prepare a Construction Traffic Management Plan (described in Section 3.3, Transportation and Traffic)

3.13.7 CEQA Significance Conclusions

Upon implementation of Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic), significant impacts would reduce to a level less than significant.

4.0 Cumulative Impacts

This section provides an analysis of cumulative impacts associated with the proposed project, pursuant to the requirements of CEQA.

4.1 Regulatory Framework

CEQA requires an EIR to include an evaluation of a project's contribution to cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of the related past, present, and reasonably foreseeable future projects. CEQA Guidelines (Section 15355) define a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The CEQA Guidelines [Section 15130(a)(1)] further state that "an EIR should not discuss impacts which do not result in part from the project."

Section 15130(a) of the CEQA Guidelines provides that "[A]n EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable..." Cumulatively considerable, as defined in Section 15065(a)(3), "means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

4.2 Methods for Evaluating Cumulative Impacts

There are several steps involved in analyzing cumulative impacts. The initial steps involve analyzing direct and indirect impacts, followed by the application of those results to cumulative impacts. These steps are generally outlined below:

- Establish the geographic scope for the analysis used to analyze project-level and cumulative impacts and determine the appropriate scale for analysis, localized and/or regional.
- Characterize the thresholds of significance that are relevant to the resource issue areas.
- Identify the impacts associated with the project. If there are no direct or indirect impacts of the project on a resource or discipline area, then there cannot be any cumulative impacts.
- Identify other actions affecting the resource issue areas of concern. This includes consideration of past, present, and probable future related projects.
- Determine the magnitude and significance of cumulative impacts. Significance determinations are based on the methodology and thresholds of significance relevant to each resource issue area as presented in Sections 3.2 through 3.13.
- For cumulative impacts that are considered significant, identify the project's incremental contribution and determine if it is cumulatively considerable.

- Identify potential mitigation measures for potential cumulative impacts. Potential mitigation measures could include measures that would avoid, minimize, or mitigate cumulative impacts as well as direct and indirect project-related impacts.

The CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects (the "list approach") or the use of adopted projections from a general plan, other regional planning document, or certified EIR for such a planning document (the "plan approach"). For this EIR, a combined list and plan approach have been used to generate the most reliable future projections possible for assessing potential cumulative impacts at both the local and regional scale, and temporally over the duration of project construction and future operation.

The project has several components, including a reconstructed throat and elevated rail yard, new above-grade passenger concourse with new expanded passageway, and up to 10 new run-through tracks south of LAUS. To facilitate consideration of these proposed improvements and their corresponding potential direct and indirect impacts during construction and long-term operation, incremental cumulative impacts from other planned and approved projects were analyzed at a localized scale corresponding to the applicable geographic extents for each respective resource issue area (Table 4-1). The localized cumulative analysis applies the "list approach."

The regional cumulative analysis applies a "plan approach" by considering SCAG's 2016 RTP/SCS Program EIR, which identifies the project and several other regional transportation investments that would "improve the Metrolink system and the LOSSAN rail corridor, thereby providing immediate, near-term benefits to the region while laying the groundwork for future integration with High Speed Rail." These projects could result in cumulative operational impacts throughout the regional transit network. This approach is functionally equivalent to the extent that the project is adequately characterized, analyzed, and sufficient mitigation measures have been considered, where feasible, to avoid or reduce the anticipated significant direct, indirect, and cumulative impacts. Table 4-1 details the scale at which the cumulative analysis was conducted for each of the resource issue areas covered in Section 3.0, Environmental Analysis, Impacts, and Mitigation.

Table 4-1. Cumulative Analysis Area by Environmental Factors

Resource Topic	Cumulative Context	Localized Impacts[1]	Regional Impacts[2]
Land Use and Planning	Project study area and SCAG regional planning area	Yes	Yes
Transportation and Traffic	Project study area and traffic analysis zones	Yes	Yes
Aesthetics	Project study area	Yes	No
Air Quality and Global Climate Change	South Coast Air Basin, statewide, and global	Yes	Yes
Noise and Vibration	Project study area and SCAG regional planning area	Yes	Yes
Biological Resources	Biological study area	Yes	No
Hydrology and Water Quality	Project study area and Los Angeles River watershed	Yes	Yes
Geology and Soils	Project study area	Yes	No
Hazards and Hazardous Materials	Project study area and Environmental Database Record study area	Yes	No
Utilities/Service Systems and Energy Conservation	Project study area and SCAG regional planning area	Yes	Yes
Cultural Resources	Area of Direct Impact and Area of Indirect Impact	Yes	No
Public Services	Project study area	Yes	No

Notes:

[1] ***Localized cumulative impacts would be generally confined to the project study area (and project footprint for each build alternative). Cumulative impacts within the project study area would occur during construction and operation of the project.***

[2] ***Regional cumulative impacts would be expressed regionally, beyond the project study area, and distributed throughout the larger SCAG region. Cumulative impacts experienced at the regional scale would be associated with future operations.***

SCAG=Southern California Association of Governments

4.3 Existing Conditions

The cumulative context includes the geographic area, timeframe, and/or type of projects or planning activities that would contribute to the potential cumulative impact. As provided in Table 4-1, each environmental topic identifies a relevant geographic area for analysis of cumulative impacts. The geographic range considered for the cumulative analysis can vary based on the resource issue area. For example, the geographic range over which hydrologic or water quality impacts (e.g., watershed scale) occur would not necessarily be the same as the geographic range considered for transportation-related impacts (e.g., Traffic Analysis Zones). In instances where the cumulative analysis extends beyond the limits of the project study area (e.g., to consider impacts at a watershed scale), this fact is noted.

Table 4-2 presents the projects considered as part of the localized cumulative analysis within the project study area. State, regional, and local planning documents were reviewed and considered as part of the cumulative analysis in this EIR.

The list of past, present, and probable future projects used for this cumulative analysis is restricted to major development, transportation, and infrastructure projects that overlap with the project study area. For the purposes of this cumulative analysis, the projects that may have a cumulative impact on resources considered in this EIR are referred to as the "cumulative projects." These projects are identified in Table 4-2. The analysis of cumulative environmental impacts associated with the proposed project addresses the potential incremental contributions of the project to cumulative environment impacts in combination with these related projects. The list of projects in Table 4-2 is not intended to be an all-inclusive list of projects, but rather an identification of larger projects approved or planned in the Central City portion of Los Angeles that could contribute to cumulative impacts for one or more resources.

At a regional scale, the adopted 2016 RTP/SCS identifies projects that may contribute to cumulative impacts throughout the SCAG region and provides a programmatic analysis of the potential environmental impacts in 2040. Since the project is identified as a key project in the RTP/SCS (a transit priority project), the Program EIR prepared for the RTP/SCS was considered to both characterize and analyze cumulative conditions within Los Angeles County and the broader SCAG region for 2040. Furthermore, the project is a critical component of the SCORE Program, providing capacity enhancements to fulfill the program objectives. The project itself does not enable regional/intercity rail providers to meet their service goals primarily because other infrastructure improvements on the entire system (cumulative projects) are required to meet the forecasted service levels by 2040. In some resource issue areas evaluated in Section 3.1 through 3.13, the project-related direct impact analysis already addresses potential cumulative impacts (i.e., Traffic, Air Quality and Global Climate Change, and Noise and Vibration).

4.4 Environmental Impacts

The following section discusses the potential for the project to result in cumulatively considerable impacts together with the related projects and regional development (as provided in Table 4-2) for each of the resource issue areas evaluated in Section 3.0, Environmental Analysis, Impacts, and Mitigation.

Table 4-2. Link US Cumulative Projects

	Project Title	Project Description	Location	Stage/Schedule
1	ESOC	ESOC is a planned facility located at 410 Center Street. The ESOC would serve as the headquarters for Metro's emergency coordination, radio dispatch, and security operations. In the future, this facility could integrate Metro Rail and Bus Operations Centers. The facility would be approximately 100,000 square feet and four stories tall.	410 Center Street Los Angeles, California 90012	Final design and construction, operations by 2021
2	Patsaouras Plaza Busway Station Project	The Patsaouras Plaza Busway Station project consists of the construction of a new passenger boarding/alighting platform at the southern end of Patsaouras Transit Plaza on the El Monte Busway. The new Patsaouras Plaza Busway Station would provide a direct pedestrian connection between the El Monte Busway and LAUS. This project is fully funded and is currently in construction.	LAUS	Under construction
3	Bus Maintenance and Compressed Natural Gas Facility	The City of Los Angeles has designated 3.6 acres for a LADOT Bus Maintenance and Compressed Natural Gas Fueling Facility. It is scheduled to be a linear facility with a two-story maintenance garage to the west and an open tandem 70-space bus parking lot to the east.	454-462 and 506 Commercial Street, and 459-461 and 503-511 East Ducommun Street	Final construction, opening late 2018
4	CHSRA - Burbank to Los Angeles and Los Angeles to Anaheim Project Sections	CHSRA is planning for the introduction of the HSR system from San Francisco to the Los Angeles basin by 2033. As discussed in Section 2.0, the planned HSR system is accommodated in this EIR. The Burbank to Los Angeles project Section would extend from LAUS to the north, and the Los Angeles to Anaheim project Section would extend from LAUS to the south. The cumulative analysis assumes the proposed project could accommodate up to four tracks and up to two platforms for the planned HSR system in the full build-out condition. FRA and CHSRA will conduct a full project-level environmental review for the planned HSR system, including the construction and operational environmental analysis for the entirety of the planned HSR system, including the associated infrastructure accommodated for within the Link US project study area. The Link US EIR evaluates the probable future cumulative environmental impacts of the planned HSR system's use of the proposed facilities at LAUS, at a conceptual level.	Various locations within Los Angeles County.	Sometime between 2033 and 2035
5	Metro Division 20 Portal	To accommodate increased service levels on the Metro Red/Purple Lines, Metro	Division 20 rail yard	Environmental,

Table 4-2. Link US Cumulative Projects

	Project Title	Project Description	Location	Stage/Schedule
	Widening and Turnback Facility	is planning critical facility improvements, including a widening of the heavy rail tunnel south of US-101 (Portal Widening) and a new turnback facility in the Division 20 rail yard. With these improvements, new tracks and switches will allow trains to turn around more quickly at LAUS.		construction, design
6	Regional Connector Transit Project - Little Tokyo/Arts District Station (at First Street/Central Avenue)	Development of the 1.9-mile Metro Regional Connector Transit project, includes three new stations including one located on the southeast corner of First Street and Central Avenue.	LAUS, First Street and Central Avenue	Under construction, operations in 2021
7	Los Angeles County Central Men's Jail Expansion	In 2014, the Los Angeles County Board of Supervisors voted to approve, in concept, the demolition of the existing Los Angeles County Central Men's Jail located at 441 Bauchet Street within the Link US project area, on the western side by the Los Angeles River. The existing facility is planned to be replaced with a new, two-tower, 4,860-bed jail.	441 Bauchet Street	Planning/Design; completion of construction in 2026
8	Metro Los Angeles River Path Project	The Los Angeles River Master Plan governs the 32-mile stretch of the Los Angeles River starting from its origin in Canoga Park to South City of Los Angeles limits located at Washington Boulevard. Multiple multimodal connections are proposed along Center Street, Cesar Chavez Avenue, and Vignes Street. The proposed 32-acre Cornfields State Park is located just north of LAUS on Spring Street. The Los Angeles River Path project will create 26 miles of continuous bicycle path between Elysian Valley and just north of Downtown Los Angeles.	32-mile Los Angeles River. Reach 3 parallels the project study area.	Planning Design; completion in 2025
9	Park 101	Park 101 is a planned project of the City of Los Angeles and seeks to create an urban park neighborhood. The project envisions the "capping" of US-101 in Downtown Los Angeles.	LAUS and surrounding area near US-101	Planning/Design

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
10	Purple Line Extension (Sections 1, 2, and 3)	The Purple Line Extension (Sections 1, 2, and 3) will extend the Metro Purple Line by approximately 9 miles from its current terminus at the Wilshire/Western Station.	Beginning at the current Wilshire/Western Station and will end at Westwood/VA Hospital	Section 1 planned revenue service - 2023. Section 2 planned revenue service - 2026. Section 3 planned revenue service - 2026.
11	WSAB Transit Corridor	The WSAB Line is a 20-mile light rail transit system that would connect southeast Los Angeles County to Downtown Los Angeles. LAUS could serve as a terminal platform location for the WSAB Line project.	20 miles from the City of Artesia	Construction: Post-2022 Operations: Southern segment (Artesia to Paramount) - 2028 and Northern segment (to LAUS) - 2041
12	Connect US Action Plan and Eastside Access Improvements (formerly Los Angeles Union Station and First/Central Linkages Study)	The Connect US Action Plan is centered on a community-driven process to identify implementable public improvements that can create connections and pathways between and through downtown neighborhoods. The Plan provides a community-prioritized list of improvement projects to strengthen bicycle and pedestrian (active transportation) connectivity between communities, destinations, and public transit.	Center Street and Commercial Street	Planning/Design
13	Vibiana Lofts Mixed Use	The project includes the construction of 237 apartments above 4,000 square feet of ground-floor commercial space.	222 Main Street	Construction complete
14	Fifth and Olive	The project includes the construction of 600 condominium units and 13,872 square feet of restaurant use.	427 Fifth Street	February 2019
15	Mixed Use	The project includes the construction of 247 condominium units and 10,675 square feet for retail use.	745 Spring Street	Planning/Design

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
16	Eighth/Hope/Grand project	The project includes the construction of 225 condominium units, 200 hotel rooms, 30,000 square feet for retail use, and 320,000 square feet for restaurant use.	609 Eighth Street	Planning/Design
17	Kawada Tower	The project includes the construction of 330 condominium units and 12,000 square feet for retail use.	250 Hill Street	Planning/Design
18	Barlow Hospital Replacement and Master Plan	The project includes construction of a replacement hospital, administration and support facility, and skilled nursing facility on a portion of the project site. The surrounding communities will also be redeveloped to augment and help fund the replacement hospital. The project will also include construction of 800 condominium units, 15,000 square feet for retail use, and will add 56 hospital beds.	2000 Stadium Way	Planning/Design
19	Wilshire Grand Project	The project includes the construction of a mixed use tower, including 900 hotel rooms, 415,000 square feet for retail use, and 400,000 square feet for office use.	900 Wilshire Boulevard	Operational
20	Grand Avenue	The project includes the construction of a mixed used facility, including 412 apartment units, 1,648 condominium units, 449,000 square feet for retail use, and 681,000 square feet for office use.	237 Grand Avenue	Under construction
21	Los Angeles Civic Center Office	The project includes the construction of 35,000 square feet for retail use, 712,500 square feet for office use, and 2,500 square feet for other uses.	150 Los Angeles Street	Planning/Design
22	Topaz Apartments	The project includes construction of 160 apartment units, 18,000 square feet for retail use, 3,500 square feet for restaurant use, and 3,500 square feet for other uses.	534 Main Street	Operational
23	Level Building	The project includes the construction of 303 condominium units, 1,500 square feet for retail use, and 9,680 square feet for restaurant use.	840 Olive Street	Operational
24	Camden Arts Mixed Use	The project includes the construction of 240 apartments, 7,165 square feet for retail use, and 4,110 square feet for restaurant use.	1525 Industrial Street	Planning/Design

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
25	Perla on Broadway	The project includes construction of 450 apartment units, 7,500 square feet for retail use, and 5,000 square feet for restaurant use.	400 Broadway	Under construction
26	Mixed Use	The project includes construction of 331 apartment units and 10,000 square feet for restaurant use.	801 Olive Street	Operational
27	Mixed Use	The project includes the construction of 589 apartment units for 1,178 residents and 4,500 square feet for retail use.	820 Olive Street	Operational
28	Mixed Use	The project includes the construction of 247 residential units and 8,000 square feet for retail use.	700 Cesar Chavez Avenue	Planning/Design
29	Fourth and Traction	The project includes the construction of 25,000 square feet for retail use, 20,000 square feet for restaurant use, and 78,600 square feet for office use, accommodating 404 employees.	963 Fourth Street	Operational
30	La Plaza Cultural Village Project	The project includes construction of 345 apartment units, 44,000 square feet for retail use, and 11,000 square feet for restaurant use.	527 Spring Street	Forecast completion 2019
31	Equity Residential Mixed Use Project	The project includes construction of 428 apartment units and 6,700 square feet for restaurant use.	340 Hill Street	Construction prep
32	520 Mateo	The project includes construction of 350 apartment units, 14,000 square feet for retail use, and 14,000 square feet for restaurant use.	520 Mateo Street	Construction prep
33	Sapphire Mixed Use	The project includes construction of 362 apartment units, 18,959 square feet for retail use, 4,980 square feet for restaurant use, and 1,866 square feet for other uses. Case # ENV-2015-3033-EIR.	1111 Sixth Street includes 1324-1342 Fifth Street, 1101-1135 Sixth Street, and 517-521 Bixel Street	Planning/Design
34	Eighth and Spring Towers	The project includes construction of approximately 362 apartment units and 7,200 square feet for other uses.	732 Spring Street	Completed
35	Alexan South Broadway	The project includes construction of 300 apartment units, 3,500 square feet for retail use, and 3,500 square feet for restaurant use.	850 Hill Street	Preconstruction

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
36	Medallion Phase 2	The project includes construction of 471 apartment units, 5,190 square feet for retail use, and 27,780 for restaurant use.	300 Main Street	Planning/Design
37	Embassy Tower	The project includes construction of 420 condominium units and 38,500 square feet for retail use.	848 Grand Avenue	Planning/Design
38	Amacon Project	The project includes construction of 208 apartments and 5,029 condominiums.	1133 Hope Street	Construction
39	Fifth and Olive (Formerly Park Fifth)	The project includes construction of 615 apartment units and 16,309 square feet for restaurant use.	437 Hill Street	Construction
40	Stanford Regency Project	The project includes up to 181,620 square feet of retail.	810 Pico Street	Planning/Design
41	Bixel and Lucas	The project includes construction of 648 apartment units and 39,996 square feet for retail use.	1102 Sixth Street	Under construction
42	G12 Mixed-use	The project includes construction of 640 apartment units and 45,000 square feet for retail use.	1200 Grand Avenue	Operational
43	The City Market (mixed-use)	The project includes construction of 877 apartment units, 68 condominium units, 224,862 square feet for retail use, and 294,641 square feet for office use.	1057 San Pedro Street	Project is expected to be built out over a 25-year period (through 2040)
44	1001 Olive Street Project	The project includes construction of 225 apartment units and 5,000 square feet for other uses.	1001 Olive Street	Completed
45	950 Third Street	The project includes construction of 635 apartment units and 30,062 square feet for retail use.	950 Third Street	Phase 1 complete
46	Hill Street Mixed-Use	The project includes construction of 239 apartment units and 5,400 square feet for retail use.	920 Hill Street	Preconstruction
47	Broadway Mixed-use	The project includes construction of 201 apartment units and 6,000 square feet for retail use.	955 Broadway	Preconstruction

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
48	Flower (1212) Mixed-use	The project includes construction of 2 towers with 730 condominium units, 10,500 square feet for retail use, and 70,465 square feet for office use.	1212 Flower Street	Opening in 2019 (tentative)
49	Olympic and Olive Mixed-use Project	The project includes construction of 263 apartment units and 14,500 square feet for office use.	1001-1027 Olive Street	Operational
50	Mixed-use Project (Herald Examiner)	The project includes construction of 391 apartment units, 49,000 square feet for retail use, and 39,725 square feet for office use.	1111 Broadway	Operational
51	DTLA South Park Site 1	The project includes construction of 666 apartment units and 20,690 square feet for other uses.	1120 Grand Avenue (includes 1114-1154 Grand Avenue, 309-321 12th Street)	Operational
52	DTLA South Park Site 4	The project includes construction of 362 apartment units and 4,000 square feet for retail use.	1230 Olive Street	Operational
53	Mixed-use	The project includes construction of 40,000 square feet for retail use and 243,000 square feet for office use.	2030-2060 Seventh Street	Under construction
54	Bixel Tower	The project includes construction of 425 apartment units, 126 hotel rooms, and 4,874 square feet for retail use.	675 Bixel Street/ 1111 Seventh Street	Under construction
55	LUXE Hotel Mixed-use Project	The project includes construction of 650 condominium units, 300 hotel rooms, 40,000 square feet for retail use, and 40,000 square feet for restaurant use.	1020 Figueroa Street (includes 716-730 Olympic Boulevard, 1016-1060 Figueroa Street, 607-613 11th Street, and 1041-1061 Flower Street)	Opening for Phase 1 in 2020. Opening for Phase 2 in 2023.
56	Apex II Mixed-use	The project includes construction of 629 condominium units and 27,000 square feet for retail uses.	900 Figueroa Street (includes 901 Flower Street, 700 Ninth Street)	Opening post-2020

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
57	Metrolink 2015-2035 Strategic Plan Operations	The Metrolink Strategic Plan serves as an operations and service blueprint with goals and recommendations for additional train movements in the region.	All Metrolink Routes	Operations in 2035
58	Los Angeles State Historic Park Upgrade	Renovation of a 34-acre park.	1245 Spring Street	Completed
59	Sixth Street Viaduct	Replacement of 3,500-foot-long viaduct.	Sixth Street (at Los Angeles River Bridge)	Under construction; open in 2020
60	Metro Cesar Chavez Bus Stops Improvements	Improvements include transit and bicycle amenities improvements at five or six locations to help improve the ridership experience and strengthen connections to other modes of transit throughout the area.	Cesar Chavez Avenue between Alameda Street and Vignes Street	Under construction, anticipated completion date late 2019
61	LAUS Forecourt and Esplanade Project	Project is located in front of LAUS and on adjacent streets. The proposed improvements create a useable civic plaza, and provide enhanced pedestrian and bicycle connections via the following: • New curb-side drop-off zone(s) on the east side of Alameda Street, replacing one northbound vehicle travel lane; • On the west side of Alameda Street, wider sidewalks in place of one southbound vehicle lane; • Closure of the northern lane of Los Angeles Street between Alameda Street and El Pueblo crosswalk; • Reconfigured driveway into LAUS, including a consolidated, expanded crosswalk between LAUS and El Pueblo Historic Cultural Monument; • Restricted left-hand turns from Los Angeles Street onto Alameda Street; • Two-way bicycle path within the extended El Pueblo Plaza	LAUS	Construction to begin in 2020

Table 4-2. Link US Cumulative Projects

Project Title		Project Description	Location	Stage/Schedule
62	College Station	Development of a mixed-use transit-oriented development containing 770 residential apartment units and commercial space on a 4.92-acre parcel. Residential square footage would total approximately 590,849 square feet and commercial square footage, which could include a market, restaurants, and retail space, would total approximately 51,390 square feet, for a total of approximately 642,239 square feet.	129 College Street	Opening date anticipated in 2023

Notes:
CHSRA=California High-Speed Rail Authority; DTLA=Downtown Los Angeles; EIR=environmental impact report; ESOC=Emergency and Security Operations Center; FRA=Federal Railroad Administration; HSR=High-Speed Rail; LADOT=City of Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; Link US=Link Union Station; Metro=Los Angeles County Metropolitan Transportation Authority; VA=Veterans Administration; WSAB=West Santa Ana Branch

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4.4.1 Land Use and Planning

Division of Established Communities

The proposed project would not result in the division of an established community; therefore, it would not contribute to cumulative impacts relating to the division of established communities.

Conflict with Applicable Land Use Plan, Policy, or Regulation

As discussed in Section 3.2, Land Use and Planning, the proposed project conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. Mitigation Measure LU-1 would reduce impacts associated with conflicts with existing plans to a level less than significant.

It is unlikely that the proposed project and other cumulative projects would result in significant cumulative impacts related to conflicts with applicable land use plans, policies, or regulations. Any other related project would be required to comply with the same regional and local land use plans and policies as the proposed project, thereby ensuring consistency with those land use regulations. Therefore, impacts would not be cumulatively considerable.

4.4.2 Transportation and Traffic

For the purpose of the traffic analysis prepared for the proposed project, the 2016 SCAG RTP/SCS model was used as the basis for ambient traffic growth in Downtown Los Angeles per the MOU approved by LADOT. The City of Los Angeles sub-area model is built upon the latest version of the SCAG 2016 RTP/SCS regional traffic model. The model includes all traffic analysis zones in the City of Los Angeles. The City of Los Angeles provided a cumulative project list comprised of projects within a 3-mile radius of the project that are approved or in the process of approval for use in the traffic analysis prepared for the proposed project.

The following steps were taken to develop the 2031 and 2040 traffic forecasts using the SCAG model data:

1. The list of cumulative projects was compared against the land use assumptions in the SCAG model.
2. It was determined that the majority of the cumulative projects were in the SCAG model land use assumptions.

3. Based on projected growth in the study area, and direction from LADOT1, a 0.2 percent per year growth rate was applied to the existing conditions traffic volume to generate ambient traffic growth and to estimate AM and PM peak hour trips for 2040 (cumulative year).
4. Three specific projects that required trip generation estimates were identified and added to the cumulative traffic forecasts for 2031 and 2040.

The trip generation rates and estimates for the three specific projects are included in Table 4-3.

Table 4-3. Cumulative Projects Trip Generation Estimates

Cumulative Project[a]	Location	Description	Estimated Trip Generation						
			Daily Vehicular Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
7	441 Bauchet Street	Los Angeles County Men's Central Jail	—	64	75	139	69	208	277
66	129 College Street	College Station	—	169	290	459	307	201	508
4	800 Alameda Street	High-Speed Rail[b]	32% of 40,960 = 13,107	1,305	870	2,175	870	1,305	2,175

Source: Appendix E of this EIR

Notes:
[a] Refer to Table 4-2 for a description of these projects.
[b] Trip generation from the planned HSR system is based on data shared by the CHSRA.

Traffic Delay during Construction (2031)

Construction of the proposed project would require temporary roadway closures and possible detours, which would disrupt the flow of traffic, thereby temporarily reducing LOS and volume to capacity (V/C) at roadway intersections. In addition, construction detours and closures could temporarily disrupt bus stops and routes, thereby impacting bus schedules. Construction activities could also result in temporary detours or blockages to bicycle routes and pedestrian walkways. For example, the local street reconstruction south of US-101 would require the full closure of existing Commercial Street, between Garey and Vignes Streets, for an extended period to construct the new Commercial Street alignment. Access to southbound US-101-from Commercial Street may be either partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off-ramps. Given that traffic would be temporarily diverted to other intersections, the LOS of these other intersections would be affected.

[1] This information was confirmed at a meeting with LADOT on May 25, 2016.

During construction, the proposed project would generate additional construction traffic consisting of truck haul trips on local roads, including Alameda Street, Commercial Street, Cesar Chavez Avenue, Vignes Street, and US-101. In the 2031 plus project construction condition, the following three intersections would experience reductions in LOS during construction (Table 3.3-10):

- Intersection #2: Garey Street and Commercial Street (LOS E - AM peak hour, LOS D – PM peak hour)
- Intersection #10: Alameda Street and Los Angeles Street WB (LOS C - PM peak hour)
- Intersection #15: Vignes Street and Main Street (LOS E - PM peak hour)

Construction-related impacts on the local transportation network would be compounded if other cumulative projects are constructed at the same time as the project. Concurrent construction activities would contribute incrementally to the local roadway network and could result in multiple roadway closures at the same time if not properly coordinated. These cumulative impacts are considered significant. With implementation of Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic), in conjunction with maximizing opportunities for coordinated detours with other cumulative projects, the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

Traffic Delay during Operations (2031 and 2040)

In the 2031 with project condition, significant impacts would occur at two intersections due to project-related increase in traffic delays that would exceed LADOT guidelines (Table 3.3-4 and Table 3.3-12):

- Intersection #2: Garey Street and Commercial Street (LOS E – AM peak hour, LOS E – PM peak hour)
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour)

In the 2040 with project condition, significant impacts would occur at two intersections due to project-related operational traffic delays that would exceed LADOT guidelines.

- Intersection #2: Garey Street and Commercial Street (LOS D – AM and PM peak hour)
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour)

The project-related increase in delay at Intersections #2 and #4 would exceed LADOT guidelines. Based on these results, this cumulative impact is considered significant.

In recognition of cumulative impacts associated with project-related operational traffic delays, in addition to the potential conflicts with applicable plans, policies, and regulations related to neighborhood connectivity and active transportation in the project study area (Section 3.2, Land Use and Planning), Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to further reduce

the demand for trips by single-occupant vehicles, while maximizing multimodal connectivity and access for transit riders via the planning, design, and construction of new multimodal active transportation infrastructure in the project study area. Mitigation Measure TR-2 (described in Section 3.3, Transportation and Traffic) is proposed to mitigate impacts associated with project-related increased delays at Intersection #4: Center Street and Commercial Street. Even with the proposed mitigation, Intersection #2: Garey Street and Commercial Street is projected to exceed LADOT guidelines in 2040. For this reason, the incremental contribution of the proposed project would remain cumulatively considerable.

Transportation Safety and Design Hazards

Once constructed, the proposed infrastructure would not result in sharp curves or dangerous intersections. The design and construction of project-related roadway and bridge improvements, including within the US-101 viaduct and realignment of Commercial Street, would be coordinated with local agencies, including the City's Bureau of Engineering and Department of Transportation, Caltrans, Metrolink, and CHSRA, as applicable. All project features would be engineered to comply with applicable agency standards and specifications to maximize the safe movements for both motorized and non-motorized forms of transportation. The incremental impact of the proposed project on transportation safety would not be cumulatively considerable.

Emergency Access

Construction-related impacts on the local transportation network would be compounded if other cumulative projects are constructed at the same time as the project. Concurrent construction activities would contribute incrementally to the local roadway network and could interfere with emergency response and access if not properly coordinated. These cumulative impacts are considered significant. Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) is proposed to address traffic detours, temporary emergency response routes, and includes provisions for coordination with police and fire departments regarding changes in emergency access routes prior to construction. Other cumulative projects would also be subject to the same provisions and requirements. With implementation of Mitigation Measure TR-1, in conjunction with maximizing opportunities for coordinated detours, the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

Public Transit and Alternative Transportation

The proposed project could result in temporary disruptions to regional/intercity rail service during construction. Construction of the proposed project, in addition to other cumulative projects such as the planned HSR system, Metro Division 20 Portal Widening and Turnback Facility, Purple Line Extension (Sections 1, 2, and 3), and the WSAB Line Transit Corridor, could result in cumulatively considerable impacts associated with disruptions to regional/intercity rail service. Mitigation Measure TR-3 (described in Section 3.3, Transportation and Traffic) requires rail operating agreements and/or memorandums be established to outline how construction sequencing and operational protocols would be incorporated into

applicable construction documents (plans and specifications), and how on-time performance objectives would be maintained to the maximum extent feasible during construction. With implementation of Mitigation Measure TR-3, the proposed project's incremental contribution to cumulative impacts associated with disruptions to regional/intercity rail service would not be cumulatively considerable.

New run-through track structures would impede upon, or preclude, future implementation of active transportation improvements that would enhance neighborhood connectivity and/or provide connections from LAUS to the Los Angeles River. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking the in the project study area. With implementation of Mitigation Measure LU-1, the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

4.4.3 Aesthetics

Changes in Visual Character

Construction of the proposed project would result in temporary alteration of the existing visual setting but would not compromise visual quality as a result of earthmoving or other activities (e.g., staging/stockpiling, the presence of construction equipment, or temporary traffic barricades). Some residents and businesses in the project study area would have direct sight lines to construction activities throughout the duration of construction, which, in some instances, could last longer than 12 months (e.g., in staging areas).

As discussed in Section 3.4, Aesthetics, longer-term direct and indirect visual impacts of the proposed project would result from construction of new physical facilities, including, but not limited to, run-through structures south of US-101, the retaining wall/sound wall along the William Mead Homes complex, and the new above-grade passenger concourse. The new concourse would be visible from almost all key viewer groups due to the portion of the structure that would be elevated above the rail yard (maximum height of 90 feet above existing grade).

In the context of surrounding structures, with regard to visual impacts, PRC Section 21099(d)(1) states that aesthetic impacts will not be considered a significant impact on an infill site within Transit Priority Areas. Based on these considerations, the proposed project, in conjunction with localized incremental aesthetic impacts of future development in the project study area, would not result in cumulatively considerable impacts.

From a regional perspective, as regional/intercity rail traffic increases in the future, additional sound mitigation features may be required for other regional transit projects inside and outside of the project study area, which may incrementally contribute to the construction of additional retaining/sound walls in the landscape. This visual change could be considered visually disruptive to individuals in multiple locations because views could be obstructed, and walls often provide an attractive source for graffiti. As discussed in the 2016 RTP/SCS Program EIR, proposed alignments or facilities identified in the

RTP project list could result in similar aesthetics impacts if these projects require large cut-and-fill slopes or retaining/sound walls. Project-related indirect, visual impacts would be cumulatively considerable. With implementation of Mitigation Measure AES-1 (described in Section 3.4, Aesthetics), the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable. It is anticipated that other cumulative projects would be required to implement similar mitigation, minimizing these impacts and no cumulatively considerable impacts would result. Furthermore, other projects would also be required to individually meet applicable building code requirements as well as the requirements of local policies for aesthetics.

Light and Glare

The proposed project is located in an urban setting with substantial existing sources of light and glare associated with surrounding commercial, industrial, and residential uses. The project would result in the creation of new sources of lighting and glare associated with the new above-grade passenger concourse, new platforms, safety lighting, and other amenities. Cumulative impacts related to light and glare would be considered significant. With implementation of Mitigation Measure AES-3 (described in Section 3.4, Aesthetics), the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable. Other cumulative projects would be required to individually meet applicable building code requirements as well as the requirements of local policies for light, glare, and aesthetics.

4.4.4 Air Quality and Global Climate Change

Air Quality Emissions during Construction

The air quality cumulative impact assessment considered local development projects, as well as general growth within the project area; however, as with most development, the greatest source of emissions is from vehicular traffic that can travel well outside of the local area. From an air quality standpoint, the cumulative impact analysis would extend beyond any local projects and, when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for a project's air quality analysis must be regional by nature.

Construction and operation of the proposed project and cumulative projects would degrade local air quality, as well as air quality of the SCAB. Air quality would be temporarily degraded during construction activities that occur separately or simultaneously. The greatest potential for a cumulative impact on regional air quality would be the incremental addition of pollutants from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with construction of the proposed project and cumulative projects. Construction impacts related to cumulative projects would be cumulatively considerable within the SCAB if their combined construction emissions would exceed the SCAQMD daily emission thresholds during construction. Any project located within the SCAB would be required to comply with SCAQMD rules and regulations to reduce potential emissions during construction. Other projects would be required to implement fugitive dust control measures and use construction equipment with engine designations of U.S. EPA Tier 4.

Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) are proposed to reduce project-related construction emissions. However, even following mitigation, construction emissions associated with the proposed project would continue to exceed the SCAQMD's thresholds and would remain significant and unavoidable. Based on these considerations, cumulative impacts are considered significant. The proposed project's contribution to these impacts would be cumulatively considerable.

As discussed in Section 3.5, Air Quality and Global Climate Change, although particulate matter emissions can contribute to localized health effects, it is not feasible to conduct an analysis of the effects of criteria pollutants on a local level. Rather, potential human health impacts associated with criteria air pollutants are evaluated on a regional level based on the NAAQS established by the U.S. EPA. Even if a model were developed to accurately ascertain local increases in concentrations of criteria pollutants, it would remain impossible to correlate that increase in concentration to a specific health impact. Such models are designed to determine regional, population-wide health impacts, and are not accurate when applied at the local level.

Air Quality Emissions during Operations

By providing increased station capacity for regional/intercity rail and accommodating the planned HSR system, the proposed project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. The proposed project would also indirectly contribute to other air quality benefits for the region, including a regional reduction of GHG emissions and VMT. The increased emissions from rail operations would be offset by reductions in VMT in 2026, 2031, and 2040. For this reason, it is reasonable to conclude that the proposed project would not exceed SCAQMD's thresholds and would more than likely contribute to net reductions.

Throughout operations, cumulative projects could further improve cumulative air quality conditions. Other cumulative projects would enhance transit connectivity, provide expanded regional/intercity rail service (i.e., SCORE Program), provide new HSR service, as well as enhanced pedestrian, and bicycle access throughout the project study area. Some of these improvements would also encourage the use of alternative modes of transportation.

As discussed in the 2016 RTP/SCS Program EIR, the projects identified in the 2016 RTP/SCS (including the proposed project) would not result in cumulatively considerable emissions. With respect to emissions that may contribute to regional impacts, although the proposed project results in increased regional criteria pollutant and GHG emissions, the analysis does not take into consideration the associated regional VMT reductions that can be expected from the increased ridership. As identified in Table 3.3.4-1 of the 2016 RTP/SCS Program EIR, under the plan conditions (which include region-wide transit and rail improvements), the regional criteria pollutant emissions are substantially lower than under the existing conditions. Therefore, based on these considerations, in combination with other projects, cumulative impacts related to emissions of criteria air pollutants would not be cumulatively considerable.

Toxic Air Contaminants

Project-related temporary, short-term construction and long-term operations could expose nearby sensitive receptors to TACs. TAC emissions associated with temporary, short-term construction activities and stationary sources are site-specific. Peak cancer risks during construction exceed the SCAQMD's threshold of 10 in 1 million at William Mead Homes and the Mozaic Apartments and are considered significant. With implementation of Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change), the anticipated cancer risk associated with construction of the project would be reduced below the SCAQMD's 10 in 1 million threshold. As such, the exposure of project-related TAC emission impacts on sensitive receptors during construction is considered less than significant. With implementation of Mitigation Measures AQ-1 and AQ-2, the incremental contribution of the proposed project on TAC emissions during construction would not be cumulatively considerable.

Implementation of the proposed project would alter the flow of train movements within the project study area. In addition, the number of train movements through LAUS would increase through 2040. Future operations would involve additional trains and associated idling in close proximity of nearby sensitive receptors, thereby exposing these nearby receptors to TACs from diesel emissions. The project-related increase in cancer risk would exceed the SCAQMD's threshold of 10 in 1 million; however, when compared to the existing (2016) conditions, the cancer risks would be substantially lower at all of the receptor locations. Implementation of Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) would reduce diesel pollutant concentrations in the project area and achieve reductions of diesel pollutant concentrations by 51 percent in 2031 and 56 percent in 2040. Therefore, the incremental contribution of operations of the proposed project to health risks would not be cumulatively considerable.

Greenhouse Gases

As discussed above, although the proposed project results in increased regional criteria pollutant and GHG emissions, the cumulative impact analysis does not take into consideration the associated regional VMT reductions and associated indirect beneficial impacts that can be expected from the increased ridership. By adding tracks, grade separations, and upgrading signal systems across the entire Metrolink system (all cumulative projects associated with the SCORE Program), trains would operate more frequently and reliably, making regional travel by train easier and creating an even more appealing alternative to driving. Between 2026 and 2078, the estimated contribution to the VMT and GHG reductions are 898 million miles and 13.5 million MT of CO2e, respectively. The project-related capacity enhancements and improvements at LAUS are critical to achieving 26 percent, or 3.5 million MT of CO2e, of the GHG emission reduction. These reductions would easily offset the project-related annual GHG emissions of 11,230 to 11,925 MT of CO2e.

Although not required for the project's climate change impacts, Mitigation Measures AQ-2 and AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) would reduce the construction and operational GHG emissions of the proposed project. Mitigation Measure AQ-2 would reduce the

off-road GHG emissions by 30 percent. Mitigation Measure AQ-3 would reduce the locomotive emissions by 51 percent in 2031 and by 56 percent in 2040.

Further, and from a regional perspective, by providing increased station capacity for regional/intercity rail, Metro rail and bus, and accommodation of the planned HSR system, the proposed project would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. Therefore, the project is a key component to achieving the 2016 RTP/SCS GHG reduction goals for the SCAG region, in addition to statewide GHG reduction targets. The 2016 RTP/SCS would achieve GHG emission reductions of up to 35 percent for Los Angeles County in 2040 and up to 24 percent for the SCAG region as a whole. In this context, the reductions in GHGs in 2040 as facilitated by the proposed project is considered beneficial. .

4.4.5 Noise and Vibration

Construction and Operation

Cumulative projects considered in this analysis include local development and transportation projects, as well as general growth within the SCAG region. The noise and vibration analysis in Section 3.6, Noise and Vibration, includes an assessment of estimated train movements at LAUS and in the project study area to support forecasted population growth; therefore, the direct impact analysis already considers the cumulative noise levels and associated impacts of regional/intercity rail and HSR operational noise and vibration (2040 condition).

Cumulative noise and vibration impacts were considered by SCAG as part of the 2016 RTP/SCS Program EIR (SCAG 2016). The cumulative regional noise and vibration impacts identified in that EIR include those typically associated with improvements along transportation corridors (e.g., railroads, highways, and transit). The most prevalent noise sources identified in the 2016 RTP/SCS would be associated with roadway vehicle traffic, rail/transit, and aviation activity. Several impacts were identified within 500 feet of major transportation sources of noise, including rail lines used by regional/intercity rail and HSR. Construction and operation of cumulative projects, including other infrastructure improvements outside of the project study area required to implement system-wide efficiencies and changes in regional/intercity operations from implementation of the SCORE Program, would add noise to the current noise environment and would also reduce noise if all improvements are fully implemented. For example, if rail projects such as Link US are built, some trips that people would otherwise make by car or airplane would be offset by using regional/intercity trains. It is anticipated that all transportation sectors would gradually increase in noise as a result of the land use changes and transportation projects identified in the 2016 RTP/SCS Program EIR.

Construction of other projects in the project study area (Table 4-2) could occur concurrently with construction of the proposed project, which could result in cumulatively considerable increases in noise and vibration at noise-sensitive receptors. The greatest potential for a cumulative impact on the local noise environment would be the incremental addition of new regional/intercity rail service, combined with HSR operations. As discussed in Section 3.6, Noise and Vibration, moderate and severe impacts

would occur at William Mead Homes and Mozaic Apartments. Combined with other cumulative projects, cumulative noise impacts are considered significant. The incremental contribution of the proposed project to cumulative impacts is considered cumulatively considerable. Program-level mitigation measures are identified in the 2016 RTP/SCS Program EIR, demonstrating that some form of mitigation is possible and should be considered when moderate impacts occur consistent with FTA and FRA guidance. In the 2016 RTP/SCS Program EIR, noise walls near highways are identified as a potential mitigation measure to reduce transportation-related noise.

Construction impacts may overlap with other projects identified in the 2016 RTP/SCS Program EIR; however, it is unlikely that the additional projects identified in the 2016 RTP/SCS Program EIR would be located in relatively close proximity (e.g., within 0.5 mile) of the proposed project, which is approximately the distance construction would need to be to result in a perceptible increase in noise over that resulting solely from project construction.

Implementation of Mitigation Measures NV-1, NV-2, and NV-3 (described in Section 3.6, Noise and Vibration) would achieve reductions of noise and vibration impacts. Although construction-related noise impacts would be reduced through implementation of Mitigation Measures NV-2 and NV-3, impacts would remain significant and unavoidable. Despite the combination of project construction with other projects, even if the projects follow the application of the proposed mitigation, the noise impacts would be cumulatively considerable, especially if other cumulative projects include nighttime construction.

As part of the proposed project, safety infrastructure improvements are proposed at Main Street because Metro is working with the City of Los Angeles to implement a future quiet zone for trains crossing at the Main Street public at-grade crossing. Potential noise reductions that may occur to sensitive receptors analyzed in this report were estimated with the assumption that a quiet zone were implemented. Based on the results, noise levels are predicted to change only negligibly mainly due to the distance of the Main Street public at-grade crossing to sensitive receptors evaluated and because trains are assumed to keep using horns at the two private at-grade crossings in the throat segment adjacent to William Mead Homes. The horns being used at Main Street would not contribute to substantial noise reductions, although a quiet zone at Main Street would help to reduce some noise levels to sensitive receptors at William Mead Homes. Reduced horn noise at any receptor within William Mead Homes may also result in reduced sleep disturbance. The noise reductions resulting from the City's implementation of a quiet zone would result in a cumulative benefit.

An additional cumulative noise benefit could also be realized from implementation of the City of Los Angeles window replacement program for the William Mead Homes buildings located in close proximity to the rail lines. This retrofit project would include acoustical treatments of the buildings, such as sound attenuating windows. Approval of this program is ongoing. As with the quiet zone, the ultimate outcome of this effort is unknown. To be conservative, adjustments to noise levels (and the associated noise reduction benefits) were not considered as part of the quantitative project-level noise predictions for 2026, 2031, or 2040.

4.4.6 Biological Resources

Special-Status Species

The urban nature of the project study area provides minimal habitat value. The Los Angeles River adjacent to the project study area is concrete-lined and does not provide habitat value for sensitive plants or wildlife. The project study area provides marginally suitable roosting habitat for sensitive bat species, including bridges and planted (ornamental) trees such as palm trees. This habitat could support sensitive bat species or maternity roosting colonies of non-sensitive bat species. The project study area also includes western sycamore trees, which are considered protected trees under the City of Los Angeles Tree Ordinance. In addition, the project study area includes native and non-native trees and other vegetation that provides suitable nesting habitat for birds protected under the MBTA.

Implementation of the proposed project would involve the removal of trees and other vegetation that provide suitable bat roosting and migratory bird habitat as part of construction. Mitigation Measure BIO-1 (described in Section 3.7, Biological Resources) would avoid impacts on bridge-roosting bats through the provision of passive exclusion and use of alternative roosting structures. In addition, Mitigation Measure BIO-1 would avoid impacts on tree-nesting bats through the removal of trees outside of the bat maternity season. Similarly, Mitigation Measure BIO-2 would avoid direct impacts on nesting birds by requiring removal of vegetation outside of the breeding season, as feasible, or a combination of preconstruction surveys, establishment of nest buffers, and the use of exclusion devices for bridge- and crevice-nesting birds.

Similarly, other cumulative projects may result in the removal of suitable bat roosting habitat and migratory bird habitat as part of construction. Implementation of Mitigation Measures BIO-1 and BIO-2 (described in Section 3.7, Biological Resources) would avoid or minimize short-term, temporary construction-related direct and indirect impacts on bat species and MBTA species. Long-term, permanent impacts on bat species and MBTA species are not anticipated because the loss of suitable roosting and nesting habitat within the highly urbanized project study area would be minimal. In addition, the proposed project would include landscaping of trees, including palm trees, that have the potential to provide roosting habitat for bats and nesting habitat for MBTA species. The loss of this habitat, in combination with other cumulative projects, is not anticipated to be substantial relative to available foraging and roosting habitat throughout the range for these species, which encompasses a variety of habitats located throughout California.

Therefore, the proposed project, in combination with other cumulative projects, is not anticipated to result in cumulatively considerable impacts on sensitive bat species, maternity colonies of non-sensitive bat species, or MBTA species.

Wildlife Movement

The proposed project would not result in significant impacts on wildlife movement. Project construction would not obstruct local north-south wildlife movement that may be occurring via the Los Angeles River,

or local east-west movements that may be occurring via the Arroyo Seco. Therefore, the proposed project would not contribute to cumulative impacts related to wildlife movement.

Conflict with Local Policies or Ordinances Protecting Biological Resources

The proposed project may require the removal or disturbance of one or more native tree species (western sycamore or other species observed during reconnaissance surveys) that are considered a Protected Tree under the City of Los Angeles Tree Ordinance. Native trees protected by the City of Los Angeles Tree Ordinance would not be removed without a permit, per Mitigation Measure BIO-3 (described in Section 3.7, Biological Resources). In addition, removal of protected trees would require a mitigation plan approved by the City detailing the replacement of any removed protected trees. Similarly, other cumulative projects would be subject to the requirements of the City of Los Angeles Tree Ordinance prior to removal of a protected tree. Therefore, the incremental contribution of the proposed project to cumulative impacts on protected trees would not be cumulatively considerable.

4.4.7 Hydrology and Water Quality

Groundwater Levels

The proposed project would have no impact on the aquifer volume or lowering of the local groundwater table level. Therefore, the proposed project would not contribute to cumulative impacts on groundwater levels.

Construction-Related Water Quality

Construction activities during implementation of the proposed project would involve extensive grading. Substantial construction-related alteration of on-site drainage patterns could result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project-related construction sites. This contaminated runoff could enter the Los Angeles River. In response to these concerns, Metro's contractor would be required to prepare and implement a SWPPP consistent with the existing statewide NPDES General Construction Permit. Implementation of these regulatory requirements would reduce the potential significant water quality and erosion impacts from construction activities.

Although there are no assurances that other cumulative projects listed would incorporate the same degree or methods of treatment as the project, each related project would be required to comply with its NPDES General Construction Permit and local stormwater ordinances, at a minimum. In this context and with the implementation of Mitigation Measure HWQ-1 (described in Section 3.8, Hydrology and Water Quality), the incremental contribution of construction of the proposed project to cumulative impacts on water quality would not be cumulatively considerable.

Drainage, Water Quality, and Hydromodification

Local hydrology, drainage, and groundwater conditions are often affected by multiple activities within the watershed. Generally, the limits of the City and project study area contain mainly developed areas

including paved roads, existing structures, and other impervious surfaces (e.g., parking lots). Existing stormwater drainage and conveyance infrastructure is in place that connects with larger flood control facilities (e.g., the Los Angeles River) and storm drain infrastructure in US-101. Stormwater drainage and flood control facilities are operated and maintained by a combination of entities including the USACE, Caltrans, and the City.

The proposed project, combined with cumulative projects, could result in increased urban pollutants in dry weather and stormwater runoff from proposed drainage facilities. Similar to the proposed project, each project disturbing more than 1 acre is required to comply with NPDES permitting requirements and include BMPs to avoid impacts on water quality and local hydrology. Smaller projects are required to comply with local City's LID Ordinance adopted to comply with the municipal separate storm sewer systems (MS4) Permit. Each project must consider impaired receiving waters and annual TMDL loads for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of water bodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, the proposed project's contribution to overall water quality improvement in the watershed, in context of the regulatory program, is designed to account for cumulative impacts. In this context, with the implementation of Mitigation Measures HWQ-1, HWQ-6, and HWQ-7 (described in Section 3.8, Hydrology and Water Quality), the incremental contribution of the proposed project to cumulative impacts on water quality would not be cumulatively considerable.

The proposed project includes permanent BMPs that would reduce the pollutant concentrations from runoff from the proposed structures, platforms, and rail tracks. In addition, the proposed cisterns and other post-construction BMPs would capture increased discharge attributed to increased impervious surfaces so as not to exceed the existing local storm drain systems. The main reason for the increase in impervious surfaces is to prevent infiltration of runoff so that legacy hazardous contaminants in the underlying soil are not mobilized. By increasing the impervious surface area as a result of the proposed project, the groundwater basin would be protected from infiltration, thereby preventing further degradation of groundwater resources. As discussed in Section 3.8, Hydrology and Water Quality, with the implementation of the proposed drainage features, combined with Mitigation Measures HWQ-2 through HWQ-5 (described in Section 3.8, Hydrology and Water Quality), potential drainage and water quality impacts throughout operation would be reduced to a level less than significant. Projects contemplated in the 2016 RTP/SCS, including the planned HSR system, would be subject to similar measures and related performance standards. In this context, with the implementation of Mitigation Measure HWQ-2 through HWQ-5, the incremental contribution of the proposed project to cumulative impacts on drainage and water quality impacts would not be cumulatively considerable.

During operation, the proposed project would result in acquisition of parcels with current manufacturing and industrial processes permitted by the IGP. These processes include treating stormwater discharges that include pollutants. Upon implementation of the proposed project, significant impacts would occur if these processes are not continued, because industrial stormwater may not be treated and could

negatively impact the storm drain system. Mitigation Measure HWQ-8 (described in Section 3.8, Hydrology and Water Quality) requires Metro to update the applicable Waste Discharger Identification numbers of the impacted parcels and keep these parcels compliant with the IGP. In this context, with the implementation of Mitigation Measure HWQ-8, the incremental contribution of proposed project operations to cumulative impacts on water quality would not be cumulatively considerable.

In considering other cumulative projects, regional programs and BMPs, such as TMDL programs and the MS4 Permit Program, have been designed in anticipation of future urbanization within the region. These regional control measures contemplate cumulative watershed impacts of proposed development, including the cumulative projects considered. The proposed project would be required to comply with the regulations in effect at the time the grading permits are issued. Compliance with these regional programs and the CGP and IGP constitutes compliance with programs intended to address cumulative water quality impacts. Therefore, impacts would not be cumulatively considerable.

4.4.8 Geology and Soils

Ground Shaking and Liquefaction

Geologic hazards based on the local geologic characteristics of the project study area are typically site-specific and addressed on a project-by-project basis, rather than on a cumulative basis. Although the project study area is not underlain by or immediately adjacent to any mapped known active or potentially active faults, it is underlain by northerly dipping blind thrust faults at depth, as discussed in Section 3.9, Geology and Soils. The proposed project could be subject to seismic ground shaking from an earthquake occurring along one of several major active or potentially active faults in Southern California and related secondary impacts (e.g., liquefaction). Potential project impacts associated with liquefaction are considered significant.

With the implementation of Mitigation Measure GEO-1 (described in Section 3.9, Geology and Soils), potential geology and soils impacts of the proposed project resulting from liquefaction would be minimized. Other cumulative projects would be subject to the same risks of ground shaking along one or more faults in close proximity to the project study area. These projects would be subject to similar mitigation requirements per federal, state, and local requirements. In this context, with the implementation of Mitigation Measure GEO-1, the proposed project's incremental contribution to cumulative impacts related to ground shaking and liquefaction would not be cumulatively considerable.

Soil Erosion

As discussed in Section 4.4.7, Metro's contractor would be required to prepare and implement a SWPPP consistent with the existing statewide NPDES General Construction Permit. Implementation of these regulatory requirements would reduce the potential for substantial erosion impacts resulting from construction activities.

Although there are no assurances that other cumulative projects listed would incorporate the same degree or methods of treatment as the project, each related project would be required to comply with its NPDES General Construction Permit, at a minimum, and applicable long-term BMP requirements. In this context and with the implementation of applicable mitigation, the proposed project's incremental contribution to cumulative impacts related to erosion would not be cumulatively considerable.

Expansive Soils

The soils within the project study area are considered to have a low expansion potential based on the results from the preliminary geotechnical investigation, although as part of Mitigation Measure GEO-1 (described in Section 3.9, Geology and Soils), a supplemental geotechnical investigation would occur during final design to confirm these findings. In addition, the project infrastructure would be constructed in accordance with standard engineering practices to minimize the adverse impacts of expansive soils throughout operation. Other cumulative projects would be required to investigate geologic conditions prior to development and overall presence of expansive soils on site, as well as be required to construct facilities in accordance with standard engineering practices. Therefore, the proposed project's incremental contribution to cumulative impacts related to expansive soils would not be cumulatively considerable.

4.4.9 Hazards and Hazardous Materials

Routine Transport, Use, or Disposal of Hazardous Materials

Health and safety impacts associated with the past or current uses of a project site are generally addressed on a project-by-project basis, rather than on a cumulative basis.

The proposed project and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Significant impacts from the proposed project would be negligible because the storage, use, disposal, and transport of hazardous materials are extensively regulated by federal, state, and local laws, regulations, and policies. In this context, it is reasonably foreseeable that the proposed project and other cumulative projects would implement and comply with these existing hazardous materials laws, regulations, and policies. With the implementation of Mitigation Measure HAZ-1 (described in Section 3.10, Hazards and Hazardous Materials), the proposed project's incremental contribution to cumulative impacts associated with the storage, use disposal, and transport of hazardous materials, contaminated soil, and groundwater would not be cumulatively considerable.

Release of Hazardous Materials into the Environment

Implementation of the proposed project would require construction-related disturbances on properties with known potential for hazardous materials exposure, as discussed in Section 3.10, Hazards and Hazardous Materials.

Any hazardous wastes or materials encountered through ground-disturbing activities would be handled and disposed of in accordance with federal, state, and local regulatory requirements. All future projects in the project study area would be subject to the same federal, state, and local regulations. These regulations require an individual site evaluation and, if hazardous materials are encountered, cleanup by the responsible party prior to construction. Further, with the implementation of Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10, Hazards and Hazardous Materials), the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

The proposed project would also require the demolition of a limited number of existing structures that may contain asbestos and/or lead-based paint. Other projects involving the removal of existing structures would also be subject to this hazard. Any significant impacts would be mitigated on a project-specific basis pending final engineering design. With the implementation of Mitigation Measure HAZ-8 (described in Section 3.9, Hazards and Hazardous Materials), the proposed project's incremental contribution to cumulative impacts associated with the release of hazardous materials would not be cumulatively considerable.

Emergency Evacuation Plan

Construction-related impacts on the local transportation network would be compounded if other cumulative projects are constructed at the same time as the project. Concurrent construction activities would contribute incrementally to the local roadway network and could interfere with emergency response and access if not properly coordinated. These cumulative impacts would be significant. Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) is proposed to address traffic detours, temporary emergency response routes, and includes provisions for coordination with police and fire departments regarding changes in emergency access routes prior to construction. Other cumulative projects are anticipated to be subject to similar provisions during construction. With implementation of Mitigation Measure TR-1, in conjunction with maximizing opportunities for coordinated detours, the proposed project's incremental contribution to cumulative impacts related to emergency response would not be cumulatively considerable.

4.4.10 Utilities/Service Systems and Energy Conservation

Wastewater, Water, Stormwater, and Solid Waste Facilities

As discussed in Section 3.11, Utilities/Service Systems and Energy Conservation, the proposed project would continue to be serviced by existing providers and facilities for wastewater, water, stormwater, and solid waste. The proposed project would not require the construction of new wastewater, water, or stormwater facilities. Prior to construction, other cumulative project applicants would be required to coordinate with utility providers on a project-by-project basis to determine the demand and capacity of facilities. The appropriate service providers are responsible for ensuring adequate provision of public utilities within their jurisdictional boundaries. Therefore, impacts on utilities/service systems would not be cumulatively considerable.

Energy Conservation

Construction of the proposed project would result in temporary increases in demand for energy in the form of fuel used for construction vehicles and other equipment used during site clearing, grading, and construction, as addressed in Section 3.11, Utilities/Service Systems and Energy Conservation. To minimize energy consumption, the construction contractor would implement standard BMPs in accordance with Metro's Green Construction Policy. Starting in 2018, Metro's Green Construction Policy requires the use of bulk renewable diesel fuel on its construction projects. Renewable diesel is a petroleum-free substitute fuel for diesel engines. It is produced from 100 percent renewable and sustainable materials and is more efficient and cleaner burning than conventional petroleum (Metro 2018a). Metro's Green Construction Policy also requires the following BMPs (Metro 2018b):

- Maintain equipment according to manufacturers' specifications
- Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of 5 minutes when not in use
- Use electrical power in lieu of diesel power, where available

Standard BMPs would be implemented by the contractor so that non-renewable energy would not be consumed in a wasteful, inefficient, or unnecessary manner. In this context, impacts related to an increase in the demand for energy would not be cumulatively considerable.

The proposed project would accommodate current and anticipated ridership demands for multimodal transportation options in the region. It would have a direct and indirect beneficial impact on energy resources by providing improved local transit service and regional transit connectivity, which would encourage more individuals to use public transit services, thereby reducing both the number of personal vehicles on the roads requiring gasoline and associated fuel consumption. As discussed in Section 3.5, Air Quality and Global Climate Change, the proposed project would indirectly contribute to reductions in regional VMT. Additionally, the City may propose to increase land use densities and update land use plans and development regulations surrounding LAUS to advance transit-oriented development within high quality transit zones, as planned for in the 2016 RTP/SCS. By supporting and helping to improve public transit, the proposed project is expected to have an incremental beneficial impact when compared to existing conditions with regards to energy resources and related consumption.

As stated in the Metro's 2015 Energy and Resource Report, Metro is committed to the incorporation of energy conserving building features that qualify for LEED® certification. LEED® certification would also be pursued for the above-grade passenger concourse with new expanded passageway. Given the planning period available, energy providers have sufficient information to include the proposed project in their demand forecasts. In the context of other cumulative projects being considered, all development projects would be required to comply with the energy efficiency standards as identified in CCR Title 24. Based on these factors, the proposed project, in conjunction with other probable future projects, would facilitate improved transit service and reduced VMT offered by the combined projects, resulting in a beneficial impact.

4.4.11 Cultural Resources

Historical Resources

As provided in Section 3.12, Cultural Resources, implementation of the proposed project may cause a substantial adverse change in the significance of the following historical resources:

- LAUS
- Vignes Street Undercrossing
- William Mead Homes
- Friedman Bag Company—Textile Division Building
- North Main Street Bridge (Bridge #53C 1010)

LAUS and Vignes Street Undercrossing – The rail yard would be elevated by approximately 15 feet to facilitate the extension of run-through tracks over US-101. In conjunction with implementing the proposed project, multiple character-defining features of LAUS would be demolished or severely altered, including the passenger tunnel, railings, platforms, butterfly canopies, south retaining wall, Terminal Tower, Car Supply Building and retaining walls, Cesar Chavez Undercrossing, and the Vignes Street Undercrossing. Beyond the proposed project, numerous projects were completed in the past (e.g., the Metro Redline Subway project) that have made modifications to some of the same key character defining features of LAUS described above.

In 1987, the El Monte Busway project included shortening the rail yard and reconstruction of the south retaining wall in-kind, thereby altering the south side of the LAUS property. In 1991, the cut-and-cover construction of the Metro Red Line caused substantial alterations to the rail yard and passenger passageway, but it was reconstructed in-kind through consultation with SHPO. In 1995, construction of the Gateway Center office tower altered the eastern portion of the site plan and introduced a modern office building into the setting. The 2014, LAUS Historic Structures Report, prepared by Architectural Resources Group on behalf of Metro, identified three additional past projects on the LAUS site which altered the original site plan and diminished its integrity of setting. In 1996-1998, the Metropolitan Water District building was constructed immediately south of LAUS and rises eleven stories. In 2004, the First 5 Los Angeles office building was constructed southwest of LAUS on the corner of Alameda Street and Arcadia Street and rises three stories. In 2006, the Mozaic Apartment complex was constructed immediately north of LAUS and rises five stories.

More currently, Metro just recently approved the Esplanade and Forecourt Improvements project, which includes alterations to the site immediately west of LAUS, replacement of a surface parking lot with a civic plaza with a small structure to serve transit riders, and improvements to egress along Alameda Street. Notwithstanding these collective improvements, these past activities have not changed the NRHP status of LAUS.

When considered together, the past, current, and proposed cumulative projects would result in a cumulatively considerable impact on the historical features of LAUS. The settings to the south, southwest, and north have already been altered. The current and proposed cumulative projects at LAUS would alter the settings to the west and east and would further alter the setting to the south such that the entire site plan immediately surrounding LAUS would have been altered, and its integrity of setting substantially diminished. The current and proposed projects also impact the integrity of design through the loss of surface parking in front of the LAUS building, and the construction of run-through tracks to the rear and extending to the south of LAUS. Beyond the existing alterations to LAUS and the direct impacts resulting from the proposed project, indirect visual impacts on character defining features of LAUS, including demolition and replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings, would also occur.

The elevated portion of the new above-grade passenger concourse would be visible behind the historic LAUS building as viewed from Alameda Street, Father Serra Park, and the Los Angeles Plaza Historic District, as well as viewed from historic courtyards that are contributing elements to LAUS as a historical resource. The preliminary design of the above-grade passenger concourse features a 90-foot maximum height and may include modern design elements over the rail yard, which is incompatible with the historic fabric and other character defining features of LAUS. Although the proposed project incorporates a new expanded passageway in the same location as the present historic pedestrian passageway that is at-grade and offers a similar pattern of east to west circulation from the historic concourse through to the new expanded passageway, this new expanded passageway would consist of non-historic dimensions, design, and materials and would have new vertical and expanded horizontal circulation elements. Unlike the existing condition at LAUS, the elevated portion of the above-grade passenger concourse design would illuminate at night (at a yet to be determined specific Kelvin and Lux). These indirect impacts are considered significant.

Mitigation Measures HIST-1a through HIST-1d (described in Section 3.12, Cultural Resources) are proposed to mitigate these direct and indirect impacts; however, project-related impacts would remain significant and unavoidable and the incremental contribution of the proposed project to cumulative impacts on LAUS and the associated Vignes Street Undercrossing would be cumulatively considerable. Development associated with present and future projects such as the Esplanade and Forecourt Improvements project, Connect US, and other new mixed use projects may also have significant impacts on LAUS. Therefore, when considering the impacts of the past alterations to the LAUS's 1939 site plan and setting in conjunction with the impacts of the proposed project in combination with past, present, and probable projects, cumulative impacts on LAUS and the associated Vignes Street Undercrossing are considered significant.

William Mead Homes – The proposed project would result in a retaining wall/sound wall within the railroad ROW (adjacent to the William Mead Homes property), with some temporary ground disturbing construction and staging activities conducted on the William Mead Homes parcel, adjacent to the existing railroad ROW. Although the construction of a retaining wall/sound wall would introduce new visual elements, these features would be restricted to the existing ROW and situated at the rear of the

property such that they would not be visible from the property frontage. Nonetheless, this is considered a significant impact. Mitigation Measure AES-1 (described in Section 3.4, Aesthetics) and Mitigation Measure HIST-2 (described in Section 3.12, Cultural Resources) are proposed to mitigate this impact to a level less than significant.

Other cumulative projects with a direct impact on William Mead Homes include the City of Los Angeles window replacement program. However, this project is being implemented in consultation with the SHPO in regards to the type of windows that can be used to replace the existing historic windows, and since this consultation mitigates the significant impacts, no residual impact would result. Because all of the project-specific impacts would be mitigated, impacts would not be cumulatively considerable.

Friedman Bag Company—Textile Division Building – The Friedman Bag Company—Textile Division Building would be demolished by the proposed project. Mitigation Measure HIST-3 (described in Section 3.12, Cultural Resources) is proposed to mitigate this impact; however, impacts would remain significant and unavoidable after implementation of mitigation because the building would be demolished. There are no other known projects (present or future) that would impact these buildings; therefore, impacts would not be cumulatively considerable.

North Main Street Bridge (Bridge #53C 1010) – The North Main Street Bridge is proposed to have safety modifications made to the bridge that are considered a significant impact. Mitigation Measure HIST-4 (described in Section 3.12, Cultural Resources) is proposed to mitigate these impacts to a level less than significant. A recent unknown project included seismic retrofits of the bridge but did so in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The retrofitting involved uniform concrete jacketing around structural elements of the bridge to improve seismic safety, as well as the restoration of original bridge elements (railing, lamp posts, etc.) that were removed in the 1970s. The significant structural elements of the bridge are still extant beneath the concrete jacketing, and non-original elements including railing and lamp posts that detracted from the bridge's significance have been removed and restored with new features that are more in keeping with the bridge's original design. Because all of the project-specific impacts would be mitigated and the bridge would retain sufficient integrity to convey its significance as an early example of three-hinge bridge engineering, impacts would not be cumulatively considerable.

Archaeological Resources

Implementation of the proposed project has the potential to affect archaeological resources within the area of direct impact as part of construction, including site CA-LAN-1575/H and previously unidentified archaeological resources, as detailed below.

CA-LAN-1575/H – Past completed projects have affected portions of CA-LAN-1575/H, including the construction associated with the MWD Headquarters building, the Metro Red Line Subway, and the Union Station Village Apartments and Catellus Corporation Head Start Building projects. The boundary of CA-LAN-1575/H is currently identified within the parcel containing LAUS, but likely extends beyond its mapped boundary. The Patsaouras Plaza Busway Station project is currently being constructed and

includes ground disturbance in the area where Site CA-LAN-1575/H has been recently discovered. This construction work is underway, utilizing a programmatic agreement that mitigates impacts on this archaeological resource for the Patsaouras Plaza Busway Station Project. Future projects that may encounter the archaeological site include Metro's Esplanade and Forecourt Improvements project, which includes the replacement of a surface parking lot with a civic plaza immediately west of LAUS and a small structure to serve transit riders, and improvements to egress along Alameda Street. Given the large size of the resource (over 1.2 million square feet), these past and present activities have not changed the NRHP status of CA-LAN-1575/H. Implementation of Mitigation Measure HIST-5 and HIST-6 (described in Section 3.12, Cultural Resources) would reduce construction-related direct impacts on CA-LAN-1575/H to a level less than significant. Therefore, in combination with other cumulative projects, the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

Previously Unidentified Archaeological Resources – Although previously undiscovered cultural resources may underlie the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) would reduce potential impacts. It is unknown whether the related project sites contain archaeological resources, or whether the related projects would implement appropriate mitigation to reduce impacts on any resources that might be present. Furthermore, even after mitigation is implemented by the related projects, it may not be possible to avoid the historic resource, and a substantial adverse change in the significance of the archaeological resource (such as damaging or destroying the qualities that make it significant) could result. Therefore, this cumulative impact is considered significant.

Paleontological Resources

As discussed in Section 3.12, Cultural Resources, excavations for foundations and support piers to support the new above-grade passenger concourse and other proposed bridge structures (e.g., run-through tracks structure, Cesar Chavez Avenue and Vignes Street Bridges, etc.) are anticipated to extend up to 100 feet below the surface and have the potential to impact paleontologically sensitive deposits. This is considered a significant impact. Implementation of Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12, Cultural Resources) would reduce impacts to a level less than significant. Probable future projects with potentially significant impacts on paleontological resources would be required to comply with state and local regulations and ordinances protecting paleontological resources through implementation of similar project-specific mitigation measures during construction. In this context, with the implementation of Mitigation Measures PAL-1 through PAL-3, the proposed project's incremental contribution to cumulative impacts on paleontological resources would not be cumulatively considerable.

Human Remains

Ground-disturbing construction activities associated with the proposed project have the potential to impact human remains. Mitigation Measure HR-1 (described in Section 3.12, Cultural Resources) would reduce this impact to a level less than significant. Probable future projects with potentially significant

impacts on human remains would be required to comply with state and local regulations and ordinances protecting human remains through implementation of similar project-specific mitigation measures during construction. In this context, with the implementation of Mitigation Measure HR-1, the proposed project's incremental contribution to cumulative impacts on human remains would not be cumulatively considerable.

Tribal Cultural Resources

As discussed in Section 3.12, Cultural Resources, ground-disturbing construction activities have the potential to unearth areas with the potential to contain Tribal Cultural Resource CA-LAN-1575/H as it relates to the descendants of groups that inhabited the area during the Native American period. Implementation of Mitigation Measures HIST-5, HIST-6, and TCR-1 would reduce impacts to a level less than significant. Probable future projects with potentially significant impacts on tribal cultural resources would be required to implement similar project-specific mitigation measures during construction. Furthermore, probable future projects would be required to comply with AB 52. In this context, with the implementation of Mitigation Measures HIST-5, HIST-6, and TCR-1 (described in Section 3.12, Cultural Resources), the proposed project's incremental contribution to cumulative impacts on tribal cultural resources would not be cumulatively considerable.

4.4.12 Public Services

Fire Protection and Law Enforcement

Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times. Construction-related impacts on the local transportation network would be compounded if other cumulative projects are constructed at the same time as the project. Concurrent construction activities would contribute incrementally to the local roadway network and could result in multiple roadway closures at the same time if not properly coordinated. Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) would minimize these temporary disruptions. In this context, with the implementation of Mitigation Measures TR-1, the proposed project's incremental contribution to cumulative impacts would not be cumulatively considerable.

5.0 Alternatives

5.1 Introduction

The identification and analysis of alternatives is a fundamental concept under CEQA. CEQA requires consideration of alternative development scenarios and an analysis of the potential impacts associated with those alternatives. Through comparison of these alternatives to the proposed project, the advantages of each can be weighed and analyzed. Section 15126.6(a) of the CEQA Guidelines requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant impacts of the project, and evaluate the comparative merits of the alternatives."

Additionally, Sections 15126.6(e) and (f) of the CEQA Guidelines state:

- The specific alternative of "no project" shall also be evaluated along with its impact. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.
- The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant impacts of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making.

Pursuant to the CEQA Guidelines stated above, a range of alternatives to the proposed project are evaluated in this EIR. The discussion in the section provides:

- A description of the alternative(s)
- An analysis of whether the alternatives meet the objectives of the proposed project
- A comparative analysis of the alternatives and the proposed project. The focus of this analysis is to determine if alternatives are capable of avoiding or reducing the significant environmental impacts of the proposed project. Per Section 15126.6(d) of the CEQA Guidelines, significant impacts of an alternative shall be discussed, but in less detail than those of the proposed project).

5.2 Criteria for Alternative Analysis

In developing the alternatives to be addressed in this EIR, the potential alternatives were evaluated in terms of their ability to meet the basic project objectives, while reducing or avoiding the environmental impacts of the proposed project identified in Section 3.0, Environmental Analysis, Impacts, and Mitigation, of the EIR. As discussed in Section 2.0, Project Description, the project's objectives are as follows:

- Reduce train movement constraints resulting from ''stub-end'' operation by providing run-through service consistent with the *2018 California State Rail Plan* and SCORE Program
- Provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities
- Design track and platform infrastructure at LAUS necessary to accommodate the planned HSR system consistent with California Proposition 1A (High-Speed Rail Act), passed in 2008
- Maintain rail/transit service and minimize disruption to commuters during construction, to the maximum extent feasible
- Avoid and minimize impacts on sensitive environmental resources to the maximum extent feasible, including but not limited to historical resources
- Contribute to a regional reduction of GHG emissions and VMT

5.3 Alternatives Eliminated from Detailed Consideration

In addition to specifying that the EIR evaluate "a range of reasonable alternatives" to the project, Section 15126.6(c) of the CEQA Guidelines requires that an EIR identify any alternatives that were considered but were rejected as infeasible.

5.3.1 Alternative Site

Section 15126.6(f)(2) of the CEQA Guidelines addresses alternative locations for a project. The key question and first step in the analysis is whether any of the significant impacts of the proposed project would be avoided or substantially lessened by putting the proposed project in another location. Only locations that would avoid or substantially lessen any of the significant impacts of the project need to be considered for inclusion in the EIR. Further, CEQA Guidelines Section 15126.6(f)(1) states that among the factors that may be taken into account when addressing the feasibility of alternative locations are whether the project proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).

An alternative site location was rejected because multiple planning documents identify the proposed improvements at LAUS.

The project is identified in the 2017 Federal Transportation Improvement Program. The 2016 RTP/SCS identifies improvements at LAUS as a critical first step in the implementation of regional transportation

solutions. From a regional perspective, the proposed project would expand existing transportation options, foster multimodal connectivity throughout the region, and accommodate the planned HSR system. LAUS is identified as a high-quality transit area and transit priority area within the 2016 RTP/SCS, and Link US is specifically identified as the number one future transit improvement for the region.

The *2018 California State Rail Plan* identified run-through service at LAUS as a 2027 regional goal for the Los Angeles Urban Mobility Corridor. Specifically, it states "Provide run-through service at LAUS as part of the Link Union Station program, allowing for the restructuring of intercity and regional services passing through LAUS, covering local and express stations throughout the region on at least a half-hourly basis (local stops) and hourly basis (express stops)."

Furthermore, in April 2018, California State Transportation Agency awarded an $875 million grant under the Transit and Intercity Rail Capital Program to SCRRA for implementation of the SCORE Program. The grant includes $398 million to implement the first phase of run-through service at LAUS for regional/intercity rail trains via early action/interim improvements (also referred to as the Interim Condition or Phase A of the Link US project).

Based on the discussion above, an alternative location would not meet the following project objectives:

- Reduce train movement constraints resulting from ''stub-end'' operation by providing run-through service consistent with the 2018 *California State Rail Plan* and SCORE Program
- Provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities
- Design track and platform infrastructure at LAUS necessary to accommodate the planned HSR system consistent with California Proposition 1A (High-Speed Rail Act), passed in 2008

5.4 Evaluation of Alternatives

5.4.1 No Project/No Build Alternative

The CEQA Guidelines require analysis of the no project alternative (PRC Section 15126). According to Section 15126.6(e), "the specific alternative of 'no project' shall also be evaluated along with its impacts. The 'no project' analysis shall discuss the existing conditions at the time the NOP is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

For the purposes of this EIR, the no project alternative is evaluated in this section as the no project/no build alternative and assumes that the project would not be implemented. LAUS would not be transformed from a stub-end tracks station into a run-through tracks station and the 28-foot wide pedestrian passageway would continue to serve as the primary east-west connection for passengers at LAUS. Due to the constraints of the current stub-end configuration, train movements through LAUS are assumed to be similar to existing

conditions. Operational capacity at LAUS would not be enhanced to meet the demands of the broader rail system, thereby further constraining Metro's ability to accommodate forecasted travel demands at LAUS.

Land Use and Planning

There would be no impact on existing or planned land uses because baseline conditions would remain the same. Land use development would continue to occur in the project study area pursuant to the City's General Plan and zoning regulations. Compared to the proposed project, a significant impact would be avoided because infrastructure that could preclude non-motorized connections from LAUS to the Los Angeles River would not be in place.

Transportation and Traffic

No major changes to the roadway network would occur with the exception of background traffic associated with projects or improvements proposed in the 2016 RTP/SCS and others evaluated in the *Link US Traffic Impact Study*. There would be no construction activities associated with this alternative or short-term increases in construction-related vehicle trips. Compared to the proposed project, significant impacts associated with construction- and operational-related traffic delays at intersections in the traffic study area would be avoided because construction activities would not occur and the existing intersections south of LAUS would be unaffected.

Aesthetics

Changes to existing aesthetic conditions in any of the Visual Assessment Units would not occur, aside from changes resulting from land development within the project study area. This alternative does not include infrastructure elements that would present a dominant feature substantially larger than any of the current surroundings within the William Mead Homes community, or that would present a new source of substantial light or glare in the area. Compared to the proposed project, this alternative would avoid significant impacts related to aesthetics.

Air Quality and Global Climate Change

The existing stub-end rail configuration at LAUS would remain, and there would be no increase in operational capacity at LAUS to meet the demands of the broader regional and intercity rail system. A continuation of existing conditions would result in generation of similar pollutant emission levels and exposure to the same sensitive receptors based on current levels of train movements. No increase in emissions of criteria air pollutants would occur because train movements are anticipated to remain similar to existing conditions. No conflict with the AQMP would occur, and no new GHG emissions would be generated. This alternative would not expose sensitive receptors to substantial pollutant concentrations during construction. Compared to the proposed project, this alternative would avoid significant impacts related to air quality and global climate change.

As described in Section 3.5, Air Quality and Global Climate Change, the proposed project is a key component to achieving the 2016 RTP/SCS GHG reduction goals for the SCAG region. This alternative would contribute to GHG emission reductions for Los Angeles County in 2040 or for the SCAG region as

a whole. In this context, the reductions in GHGs in 2040, and beneficial impacts as facilitated by the project, would not be realized. The no project/no build alternative would not realize the beneficial impacts of reducing GHG emissions by indirectly reducing the number of vehicles on the road and indirectly altering regional on-road motor vehicle travel.

Noise and Vibration

No construction-related impacts on noise and vibration sensitive land uses would occur. No increase in operational-related noise or vibration levels would result, because train movements at LAUS are assumed to be at or near capacity. Moderate and severe noise impacts on sensitive receptors (William Mead Homes and Mozaic Apartments) would not occur; therefore, this alternative would not require the construction of a sound wall at William Mead Homes. Compared to the proposed project, significant impacts related to noise both would be avoided because construction-related noise would not occur and train movements are anticipated to remain similar to the current condition.

Biological Resources

Existing conditions in the biological study area would remain. Compared to the proposed project, this alternative would avoid significant impacts related to biological resources because potential impacts on MBTA-covered species, bat maternity colonies, and protected trees would not occur.

Hydrology and Water Quality

Groundwater would not be affected during construction. No new stormwater drainage improvements, or water quality measures would be implemented. Therefore, existing drainage patterns and runoff quantities would remain the same and no impacts would occur. Compared to the proposed project, this alternative would avoid significant impacts related to hydrology and water quality because construction-related impacts on water quality would not occur, new impervious surfaces would not be introduced, and no changes to existing permitting documentation would be required.

Geology and Soils

Changes to geologic conditions in the project study area would not occur as a result of grading or construction of new facilities; therefore liquefaction hazards, soil erosion, lateral spreading, or hazardous conditions resulting from expansive soils would not occur. Compared to the proposed project, this alternative would avoid significant impacts related to geology and soils.

Hazards and Hazardous Materials

No construction-related ground disturbance or demolition of existing structures would occur. Compared to the proposed project, this alternative would avoid impacts on identified RECs, because no excavation activities would occur. No ACMs or LBP would be released into the environment because no existing structures would be demolished. Compared to the proposed project, this alternative would avoid significant impacts related to hazards and hazardous materials.

Utilities/Service Systems and Energy Conservation

No development would occur; therefore, there would not be an increased demand on utilities and service systems, an unnecessary consumption of energy resources, or a conflict with initiatives for renewable energy or energy efficiency. Compared to the proposed project, this alternative would avoid impacts on utilities/service systems.

Cultural Resources

No construction-related ground disturbance or demolition of existing structures would occur; therefore, cultural resources within the project footprint would not be disturbed. Compared to the proposed project, this alternative would avoid impacts on the following historical resources: LAUS, Vignes Street Undercrossing, Friedman Bag Company – Textile Division Building, North Main Street Bridge, and Archaeological Site CA-LAN-1575/H. This alternative would also avoid the indirect visual impact associated with the elevated portion of the above-grade passenger concourse and its incompatibility with the historic fabric and other character defining features of LAUS. In addition, this alternative would avoid potential impacts on archaeological resources, paleontological resources, human remains, and tribal cultural resources.

Public Services

No development would occur; therefore, there would not be an increased demand for public services. Compared to the proposed project, this alternative would avoid impacts on public services related to emergency response times.

Conclusion - No Project/No Build Alternative

All of the impacts associated with the proposed project would be avoided. However, this alternative would not meet any of the project objectives.

5.4.2 Build Alternative

Introduction

Section 15126.6(a) of the CEQA Guidelines requires that an EIR describe a range of alternatives to the project which would feasibly attain most of the project objectives, but would avoid or substantially lessen any of the significant impacts of the project. The build alternative is evaluated as a project alternative because it would meet all of the project objectives and would reduce noise impacts identified for the proposed project.

As previously mentioned in Section 5.1, CEQA does not require the alternatives to be evaluated at the same level of detail as the proposed project. However, based on the comments received during the NOP scoping period, public outreach, public meetings, and from stakeholders, a detailed analysis of the build alternative is included in this EIR.

Alternative Description

The build alternative is a design alternative to the proposed project. A detailed description of the proposed project is included in Section 2.0, Project Description. The primary differences between the proposed project and the build alternative are related to the lead tracks north of LAUS and the new passenger concourse. Compared to the proposed project, the build alternative includes the following:

- Dedicated Lead Tracks North of LAUS – The build alternative includes reconstruction of the throat, with two new lead tracks that would be located outside of the existing railroad ROW, facilitating a dedicated track alignment, with a total of seven lead tracks. Reconfiguration of Bolero Lane and Leroy Street would also be required.
- At-Grade Passenger Concourse – The build alternative includes an at-grade passenger concourse below the rail yard.

All other infrastructure elements are similar to the proposed project. The components of the build alternative are described north to south below.

- Throat and Elevated Rail Yard – The build alternative accommodates future HSR trains on dedicated lead tracks in the throat segment. The build alternative includes the addition of two new lead tracks for a total of seven lead tracks in the throat segment (with future HSR trains and some express/intercity services using the two western dedicated lead tracks and most regional/intercity trains using the five eastern lead tracks). The rail yard would be elevated approximately 15 feet. New passenger platforms with a grand canopy covering the elevated rail yard would be constructed, with an underlying assumption that the platform infrastructure and associated VCEs (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed under the build alternative. North of CP Chavez, the build alternative also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- At-Grade Passenger Concourse – The build alternative includes a new at-grade passenger concourse that would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The at-grade passenger concourse would also create an opportunity for an outdoor, community-oriented space and enhanced ADA accessibility. The at-grade passenger concourse would be constructed below the elevated rail yard. Amtrak ticketing and baggage check-in services would occur at a centralized location where new carousels would be constructed at the concourse level. The at-grade passenger concourse also includes new plazas east and west of the elevated rail yard (East and West Plazas), and a grand canopy that would extend up to 70 feet above the elevated rail yard. New VCEs would also be constructed throughout the concourse to enhance passenger movements throughout LAUS while meeting ADA and NFPA platform egress code requirements.

- Run-Through Tracks – The build alternative includes up to 10 new run-through tracks (including a new loop track) in the run-through segment. All infrastructure south of LAUS is the same as described above for the proposed project.

The build alternative would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

The project footprint and the infrastructure improvements associated with the build alternative are presented on Figure 5-1 through Figure 5-5.

Figure 5-1. Build Alternative Project Footprint (Throat Segment) (Map 1 of 5)

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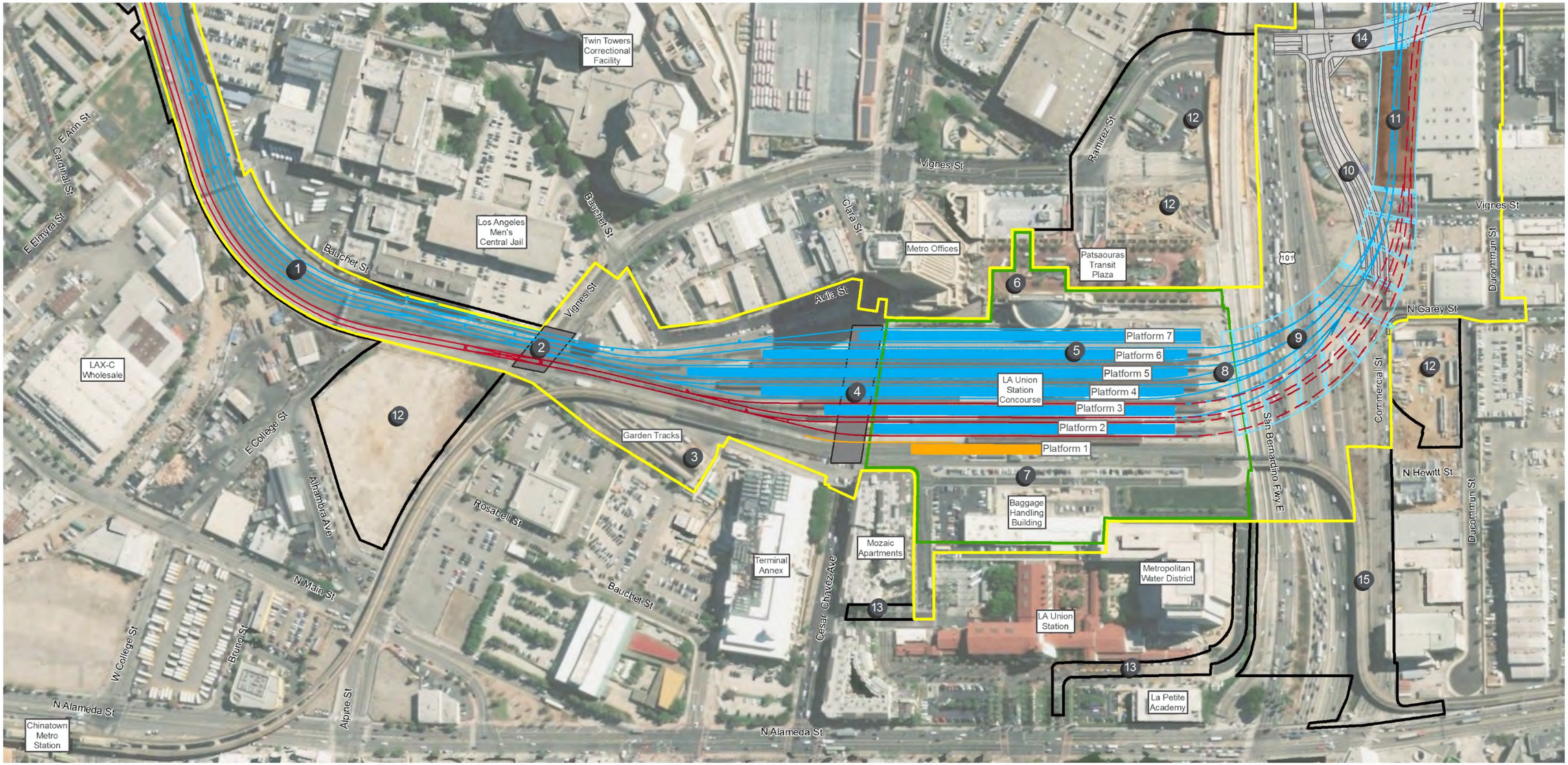
Figure 5-2. Build Alternative Project Footprint (Throat, Concourse, and Run-Through Segments) (Map 2 of 5)



LEGEND

- Permanent Impacts
- Temporary Impacts
- Regional/Intercity Rail Track
- Dedicated High-Speed Rail Track (Regional/Intercity Rail use in Full Build-Out Condition)
- Future High-Speed Rail Track (Full Build-Out with HSR Condition)
- Gold Line Track
- Gold Line Platform
- Regional/Intercity Rail Platform
- Viaduct
- Road Improvement
- Bridge Replacement
- At-Grade Passenger Concourse

1. Throat Track Reconstruction (2 New Lead Tracks - Dedicated Alignment)
2. Vignes Street Bridge Replacement
3. Remove Garden Tracks
4. Cesar Chavez Avenue Bridge Replacement
5. Passanger Concourse and Rail Yard Improvements
6. East Plaza
7. West Plaza
8. Run-Through Tracks (up to 10 Total)
9. Regional/Intercity Rail and High-Speed Rail US-101 Combined Viaduct Deck
10. Commercial Street Realignment
11. Run-Through Track Embankment
12. Construction Staging/ Assembly Area
13. Construction Access
14. Center Street Intersection Lowering
15. Roadway Reconfiguration (US-101/Commercial Street)

MAP INDEX

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Figure 5-3. Build Alternative Project Footprint (Run-Through Segment) (Map 3 of 5)

LEGEND

- Permanent Impacts
- Regional/Intercity Rail Track
- Future High-Speed Rail Track (Full Build-Out Condition with HSR)
- Viaduct Structure
- Road Improvement

1. Loop Track
2. Maintenance Access Road
3. Regional/Intercity Rail Run-Through Structures
4. HSR Run-Through Structure
5. Division 20 Access Road
6. Modifications to BNSF West Bank Yard
7. HSR Main Line connection under First Street Roadway Bridge

MAP INDEX

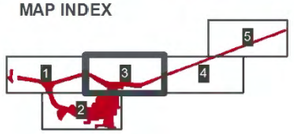

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Figure 5-4. Build Alternative Project Footprint (Run-Through Segment) (Map 4 of 5)

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Figure 5-5. Build Alternative Project Footprint (Run-Through Segment) (Map 5 of 5)

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Track Improvements

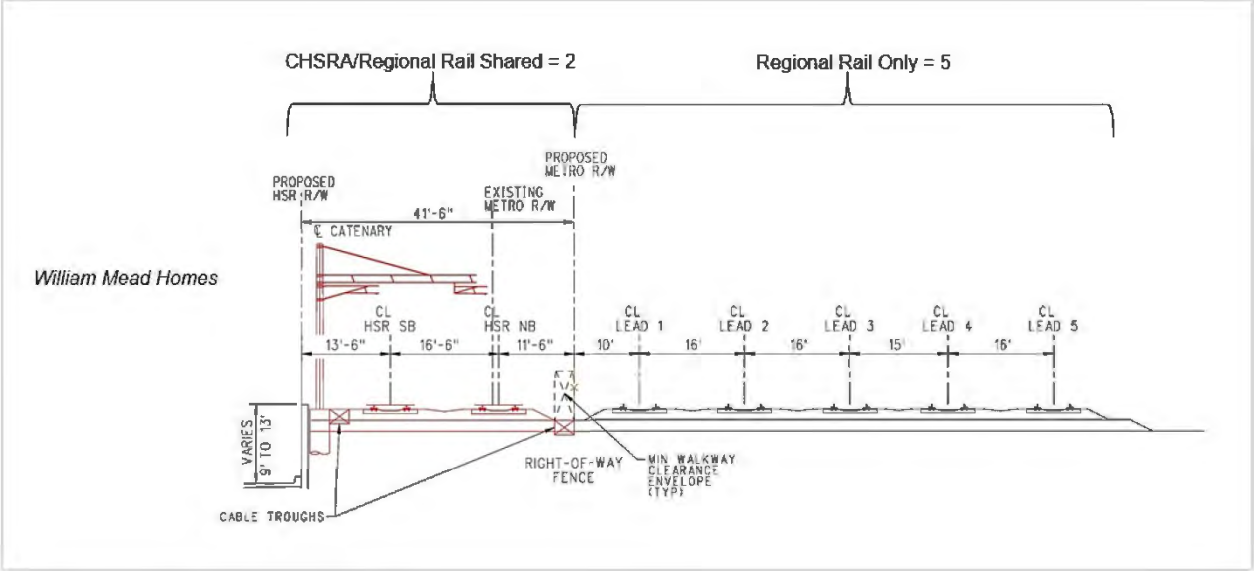
Throat Segment

The build alternative would include reconstruction of the throat with a total of seven lead tracks, with the two westernmost tracks separated from the rest of the five tracks by a fence. The two westernmost tracks would be dedicated for future HSR trains and would extend outside of the existing railroad ROW. Similar to the proposed project, the two westernmost tracks north of the rail yard would be constructed with a minimum 650-foot radius with turnouts compatible for future implementation of the planned HSR system on a dedicated track alignment. Retaining wall(s) would also be required and would extend outside the existing railroad ROW to contain the newly-constructed dedicated tracks.

- In the interim condition, only special track work would occur in the throat segment to facilitate implementation of run-through service with up to two run-through tracks.
- In the full build-out condition, the throat would be reconstructed with seven new lead tracks. The two western compatible lead tracks would be utilized by regional/intercity rail trains. Retaining wall(s) would also be required and would extend outside the existing railroad ROW to support the newly-constructed dedicated tracks.
- In the full build-out with HSR condition, regional/intercity rail trains would operate on the five eastern lead tracks in the throat (to access Platforms 4 through 7), and HSR trains would operate on the two western electrified tracks within a dedicated track alignment (to access Platforms 2 and 3) (Figure 5-6). In the full build-out with HSR condition, if after the initiation of HSR service it is desired for regional/intercity rail trains to utilize HSR tracks a connection could be constructed between the two alignments.

Similar to the proposed project, the throat would be raised by a maximum of 15 feet at an approximate 0.7 percent maximum grade, and the Garden Tracks would be removed. Figure 5-6 depicts a cross-section of the full build-out with HSR condition with the two western dedicated tracks in the throat segment.

Figure 5-6. Cross-Section of Dedicated Lead Tracks for Regional/Intercity Rail and the Planned High-Speed Rail System – Segment 1: Throat Segment at William Mead Homes



Concourse Segment (Elevated Rail Yard and Platform Improvements)

Elevated Rail Yard and Platforms

Similar to the proposed project, the build alternative would include a total of 14 tracks on an elevated rail yard. The platform improvements in the interim and full build-out conditions described for the proposed project, including the interim ramp, and the two track and platform configuration design options, are also applicable to the build alternative.

For the build alternative, a structural system of girders will support the Gold Line platform and rail (replacing the fill of today) to create the wider, more open at-grade passenger concourse below. The installation of girders requires the Gold Line Platform 1 and Tracks 1 and 2 to be replaced in its entirety. In addition, the proposed concrete girders depth requires that the platform elevation is raised to achieve a more desirable concourse ceiling height. The Gold Line Platform 1 would also be lengthened.

Run-Through Segment

The run-through track improvements associated with the loop track and regional/intercity rail and HSR infrastructure south of LAUS described for the proposed project would be applicable to the build alternative.

The build alternative includes construction of up to six regional/intercity rail run-through tracks (Tracks 7 through 12) that would accommodate a new loop track and extension of regional/intercity rail service to the main line along the west bank of the Los Angeles River. The build alternative also accommodates future construction of up to four HSR run-through tracks (Tracks 3 through 6) south of LAUS that would connect to the main line along the west bank of the Los Angeles River under the First Street Bridge.

Structural Improvements

All structural improvements (with exception of the concourse area) discussed for the proposed project would be similar to the build alternative. With dedicated lead tracks north of LAUS, the retaining wall to support dedicated lead tracks would encroach outside of the existing railroad ROW under the build alternative.

Rail Signal Improvements

The build alternative requires similar railroad signal, communication, and PTC systems as the proposed project.

Utility Improvements

The build alternative requires the similar utility improvements as the proposed project.

Drainage and Water Quality Improvements

The build alternative requires similar drainage and water quality improvements as the proposed project.

Circulation and Streetscape Improvements

All of the circulation and streetscape improvements discussed for the proposed project, including potential street closures, the realignment of Commercial Street, and the realignment and lowering of the existing Commercial Street/Center Street intersection, would also be required for the build alternative. A major difference with the build alternative is the reconfiguration of Bolero Lane as a result of dedicated tracks encroaching outside of the railroad ROW.

To accommodate future HSR tracks within a dedicated track alignment, as well as a retaining wall adjacent to William Mead Homes, Bolero Lane must be modified, which may also result in associated modifications to neighboring City streets, including Leroy Street and Bloom Street. Bolero Lane has a residential street classification with 24 on-street parallel parking spaces (including one handicap space); and provides access to a residential parking lot with 31 additional spaces (including two handicap spaces) for William Mead Homes.

The following factors were assessed to determine minimum width required to restore the functionality of Bolero Lane:

- The need to maintain access for emergency vehicles along the street if a vehicle is stopped in either direction of travel – 20 feet is typically required to accommodate emergency vehicles around a stopped vehicle
- The need to restore one lane of travel in either direction (10-foot minimum width)
- The need to restore on-street parking for residents (8-foot-wide spaces on either side)
- The need to accommodate sidewalks for pedestrians behind the curbs

Two design options were considered to reconfigure Bolero Lane in a manner that would meet these objectives, and to also accommodate potential replacement parking for the impacted parking spaces that currently exist along Bolero Lane and within the residential parking lot. Each of the concepts being considered are variations of the City's Local Street Standard, which is consistent with the street classification, and would likely require an application for variance with the City of Los Angeles.

The two design options under consideration to modify Bolero Lane are described in Table 5-1 and shown on Figure 5-7 and Figure 5-8.

Table 5-1. Bolero Lane Design Option Characteristics

Design Option	Ultimate Width		Lost Setback Width (from Building to Curb)	On-Street Parking Accommodated	Total Parking Spaces		
	Roadway (curb to curb)	Sidewalk			Removed	Replaced	Net (+/-)
A	28 feet	6 feet (North Side Only)	Varies 8.1 feet - 10.2 feet	Yes, North Side Only	24	14	- 10 spaces
B	36 feet	6 feet	Varies 15.6 feet - 19.9 feet	Yes, Both Sides	25	36	+11 spaces

Figure 5-7. Bolero Lane Design Option A: 28-foot-wide Roadway Width

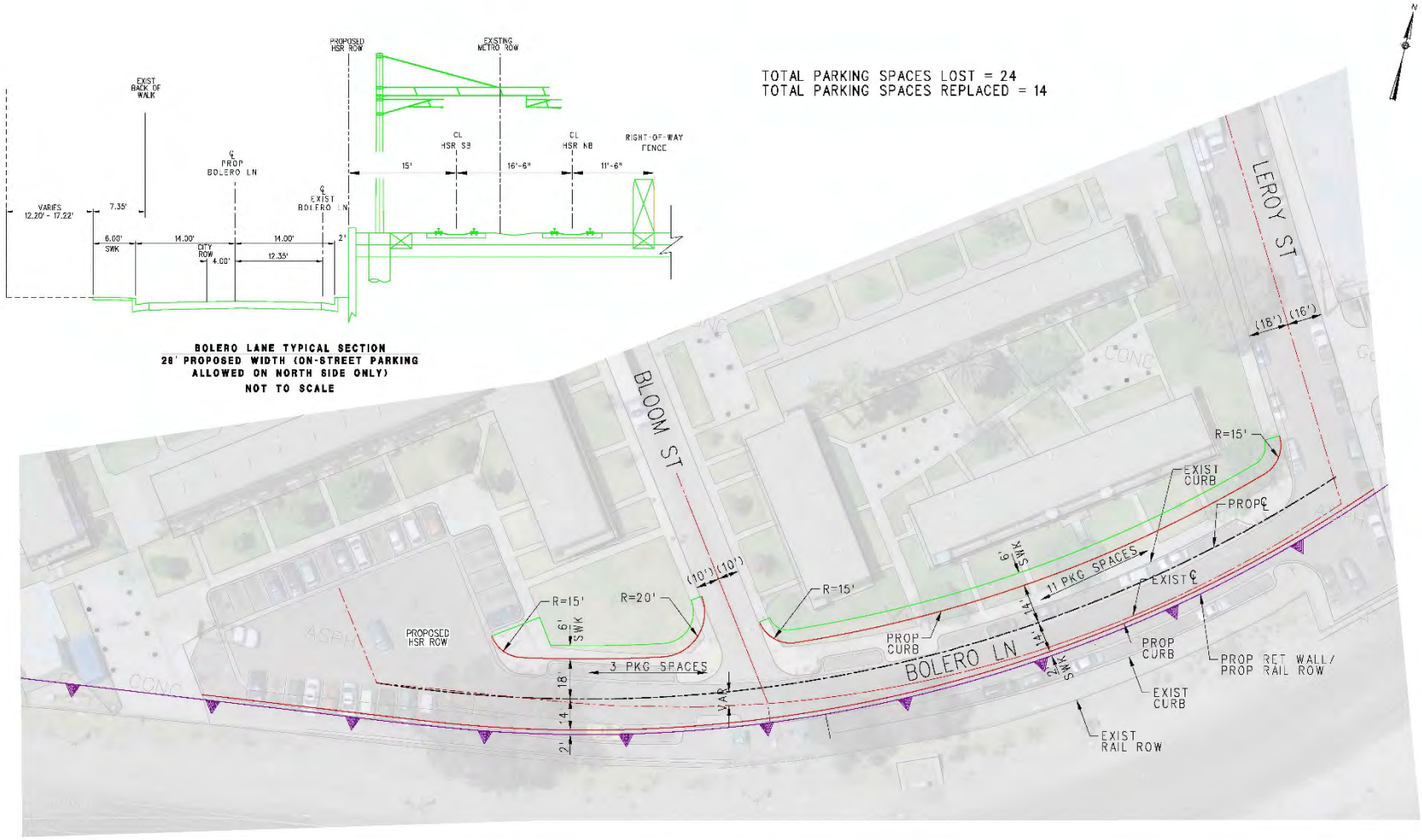


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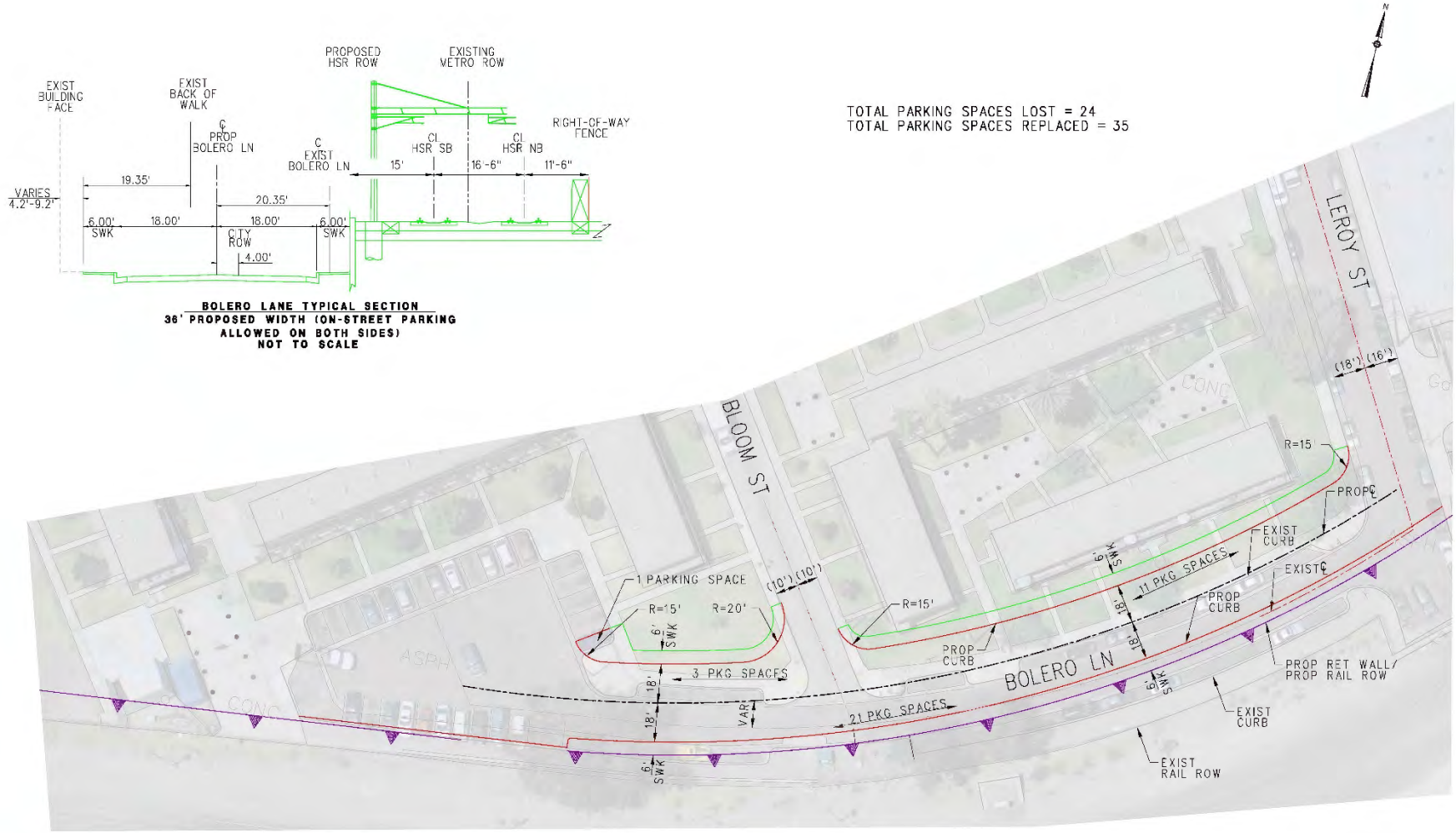
Figure 5-8. Bolero Lane Design Option B: 36-foot-wide Roadway Width



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Impact Analysis

Land Use and Planning

THRESHOLD 3.2-A	Physically divide an established community

Direct Impacts – Construction

Similar to the proposed project, the build alternative is located in an urbanized environment with a heavy presence of existing transportation infrastructure, and commercial and industrial land uses. As described in the Community Impact Report, residential communities located in the project study area include William Mead Homes (Segment 1), Mozaic Apartments (Segment 2), and One Santa Fe Apartments (Segment 3). The build alternative would be constructed mostly within the existing railroad ROW, and none of these residential communities, or any other established community, would be physically divided. Therefore, similar to the proposed project, no impact would occur.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would be located in an urbanized environment with a heavy presence of existing transportation infrastructure, including the existing railroad ROW in Segment 1, the rail yard and LAUS facilities in Segment 2, and the US-101, BNSF West Bank Yard, and other rail-related infrastructure in Segment 3. In Segment 2, all proposed infrastructure would occur within the general limits of LAUS on agency-owned property. The two areas where infrastructure is proposed outside of existing transportation ROWs include Bolero Lane, near William Mead Homes, and Commercial Street, east of Garey Street.

- *William Mead Homes Area* - Bolero Lane would be modified that would also require modifications to neighboring City streets including Leroy Street and Bloom Street near the rear (easternmost extent) of William Mead Homes. Multiple geometric modifications to Bolero Lane were considered in a manner that would meet fire access requirements, maintain pedestrian connectivity along adjacent sidewalks, and accommodate potential replacement parking for residents. This established community would not be divided because long-term vehicular and pedestrian/bicycle access would be maintained within the community. The lead tracks proposed along the eastern extent of the complex may result in modifications to existing facilities at the complex; however, upon implementation of the build alternative, no portion of this complex or surrounding community would be divided.

- *Commercial Street Area* – South of US-101 in Segment 3, run-through track infrastructure would be constructed in the interim condition outside of existing transportation ROWs where vacant properties and commercial and manufacturing/industrial land uses are currently present. Run-through track infrastructure south of LAUS would require realignment of Commercial Street closer to US-101, where vacant property and staging areas currently exist. Realignment of

Commercial Street is proposed to avoid large columns within the center of Commercial Street, and enhance opportunities for future redevelopment on parcels south of LAUS with adequate vehicular access and connectivity consistent with applicable community plans. Design elements integrated into the realignment of Commercial Street would optimize public safety and fulfill complete streets initiatives for the affected portion of Commercial Street in Segment 3. Due to the existence of vacant properties adjacent to US-101, and because the proposed reconfiguration of Commercial Street is proposed in a manner that would maintain access and connectivity opportunities for future community development, the build alternative would not physically divide established communities.

Similar to the proposed project, the build alternative would not divide established communities. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, after construction of run-through track infrastructure south of LAUS is complete, future redevelopment south of LAUS in Segment 3 would not be precluded. Unused space and staging areas could be converted to future development lots (with access thereto) in the interim and full build-out conditions. Therefore, similar to the proposed project, no indirect impacts would occur under the build alternative.

THRESHOLD 3.2-B	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

Direct Impacts – Construction

Metro is authorized by the State of California to develop its property under its enabling legislation (AB 152) and Public Utilities Code 30631a. Similar to the proposed project, construction of the build alternative would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over project facilities and/or site conditions. The build alternative would be constructed in accordance with Metro's Green Construction Policy and is consistent with the 2016 RTP/SCS that encourages sustainable design of public facilities, integrated expansion of new land uses with enhanced transportation options, and enhanced multimodal connectivity throughout the region. Similar to the proposed project, impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative is generally consistent with the plans and policies that encourage sustainable design of public facilities, expansion of existing transportation options, and increased rail service in Southern California. In addition to supporting Metrolink's implementation of the SCORE Program, the build alternative would implement the goals and objectives of multiple planning documents that guide future growth around LAUS and rail operations in Southern California, including the following:

- California Transportation Plan 2040 (Caltrans 2016)
- 2016 RTP/SCS (SCAG 2016)
- 2018 California State Rail Plan (Caltrans 2018)
- 2018 Business Plan (CHSRA 2018)
- Alameda District Specific Plan (City of Los Angeles 1996)

As described in the 2016 RTP/SCS, the Link US project would improve rail service and safety for Metrolink and the LOSSAN rail corridor, and it would also provide interconnectivity to the planned HSR system, making it an attractive alternative to congested highways. The 2016 RTP/SCS identifies improvements at LAUS as a critical first step in the implementation of regional transportation solutions. From a regional perspective, the project would expand existing transportation options, foster multimodal connectivity throughout the region, and accommodate the planned HSR system. LAUS is identified as a high-quality transit area and transit priority area within the 2016 RTP/SCS, and the project is specifically identified as the number one future transit improvement for the region.

At the local level, the build alternative would achieve Purpose B of the ADSP by providing continued and expanded development of the site as a major transit hub for the region and a mixed-use development providing retail, tourism, and related uses. Likewise, the build alternative would be consistent with Goal 10 of the CCNCP by developing a public transit system that improves mobility with convenient alternatives to automobile travel. The build alternative may require the City of Los Angeles to implement certain discretionary actions and entitlements in accordance with adopted plans and policies to reflect the proposed modifications to the circulation network south of LAUS appropriately in the City of Los Angeles Mobility Plan 2035.

Due to the similarities to the proposed project, project-related infrastructure for the build alternative south of LAUS may conflict with the same plans and policies relative to active transportation and connections from LAUS to the Los Angeles River (discussed in the Community Impact Assessment [Appendix D of this EIR]).

Similar to the proposed project, the build alternative does not include a non-motorized route from LAUS to the Los Angeles River, and proposed infrastructure would conflict with the vision of a neighborhood gateway portal to the Los Angeles River, as identified in the Los Angeles River Revitalization Master Plan. For this same reason, the build alternative would conflict with the RIO Overlay District guidelines, and two of the four recommendations and associated actions of the LAUS Sustainable Neighborhood Assessment, as summarized below:

- Recommendation 2 (Neighborhood Connectivity) – The build alternative does not include pedestrian accommodations, cycling facilities, or linkages for pedestrians and cyclists in or around LAUS.
- Recommendation 3 (River Connections) – Although parcels south of LAUS would be acquired to facilitate construction of the run-through track infrastructure south of LAUS, the build alternative does not provide a pedestrian linkage between the east side of LAUS to the Los Angeles River.

Furthermore, the build alternative would conflict with the *City of Los Angeles Mobility Plan 2035*, Policy 2.12 that includes recommendations to:

- Include walkway and bikeway facilities when installing a new bridge or exclusive transit ROW
- Provide safe connections between areas that are not directly accessible because of barriers such as rail lines and freeways

Based on these considerations, the build alternative conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River. The build alternative would result in impacts similar to the proposed project. In this regard, the build alternative would also result in a significant impact due to the operational traffic delays anticipated at two intersections south of LAUS. LADOT Traffic Impact Study Guidelines (LADOT 2016) require mitigation programs for impacts that are expected to be significant under CEQA to primarily aim to minimize the demand for trips by single-occupant vehicles by encouraging, promoting, and supporting the use of other sustainable modes of travel like public transit, walking, and bicycling. Consistent with LADOT Guidelines, Mitigation Measure LU-1 (described in the Section 3.2, Land Use and Planning) would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the project study area. Upon implementation of Mitigation Measure LU-1, impacts would be reduced to a level less than significant.

Indirect Impacts

Once constructed, the build alternative could encourage planned residential and commercial infill development by providing an economic driver for such development. Indirect impacts on surrounding land uses (induced growth) could also be beneficial by encouraging sustainable neighborhood development principles and other initiatives that would advance more efficient land use patterns and increased real estate values consistent with regional transportation and urban planning goals for the City of Los Angeles and the region as a whole. As with the proposed project, no indirect impact would occur.

Transportation

THRESHOLD 3.3-A	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

Direct Impacts – Construction

For the build alternative, construction activities are estimated to generate 1,535 daily trips (in passenger car equivalent), which is 892 daily trips more than the proposed project. Construction of the at-grade passenger concourse would generate a greater amount of vehicular trips during construction. Similar to the proposed project, implementation of the build alternative would result in significant delays at the following three intersections during construction:

- Intersection #2: Garey Street and Commercial Street (AM peak hour)
- Intersection #10: Alameda Street and Los Angeles Street EB (PM peak hour)
- Intersection #15: Vignes Street and Main Street (PM peak hour)

Implementation of the build alternative would result in significant delays at an additional two intersections during construction:

- Intersection # 1: Alameda Street and Commercial Street (PM peak hour);
- Intersection #27: Mission Road and Cesar Chavez Avenue (AM peak hour)

Compared to the proposed project, implementation of the build alternative would result in significant delays at two more intersections in the 2031 plus project construction condition. Overall, implementation of this alternative would result in a greater impact related to transportation and traffic compared to the proposed project. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) would reduce this impact to a level less than significant.

Similar to the proposed project, construction activities associated with the build alternative would generate additional construction traffic on US-101 and would result in temporary closure of portions of US-101 during the night (10:00 PM to 6:00 AM) in one direction at a time during construction of the bridge superstructure. These night closures are expected to last up to 20-consecutive days. The southbound ramps at Commercial Street may either be partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off ramps. As with the proposed project, the build alternative would not increase the traffic demand by more than 2 percent of the capacity (*Link US Traffic Impact Study* [Appendix E of this EIR, Table 8-7]); therefore, impacts are considered less than significant. However, as discussed below under Threshold 3.3-D, due to the required closures and potential for other hazardous

situations associated with the freeway closures along the US-101, Mitigation Measure TR-1 is proposed to maintain capacity along the US-101 during construction to the maximum extent practicable. Implementation of Mitigation Measure TR-1 would reduce impacts to a level less than significant. The build alternative would result in impacts similar to the proposed project.

Direct Impacts – Operations

Study Intersections –2031 with Project

Similar to the proposed project, in 2031, implementation of the build alternative would result in significant traffic delays at two intersections that would exceed LADOT guidelines:

- Intersection #2: Garey Street and Commercial Street (LOS E – AM peak hour, LOS E – PM peak hour)
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour)

These impacts related to traffic delays are similar to the proposed project, and would be considered significant. As with the proposed project, Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to further reduce the demand for trips by single-occupant vehicles, while maximizing multimodal connectivity and access for transit riders via the planning, design, and construction of new multimodal active transportation infrastructure in the traffic study area. In addition, Mitigation Measure TR-2 would reduce impacts associated with project-related increased delays at Intersection #4: Center Street and Commercial Street to a level less than significant. However, there are no feasible mitigation measures to minimize the impacts at Intersection #2: Garey Street and Commercial Street, and the increased project-related operational traffic delays would continue to exceed LADOT guidelines in 2031. As with the proposed project, Mitigation Measure LU-1 is proposed to reduce the impact; however, traffic delays at Intersection #2: Garey Street and Commercial Street would remain significant and unavoidable under the build alternative.

Study Intersections – 2040 with Project

Similar to the proposed project, in 2040, implementation of the build alternative would result in significant traffic delays at two intersections that would exceed LADOT guidelines:

- Intersection #2: Garey Street and Commercial Street (LOS D – AM and PM peak hour)
- Intersection #4: Center Street and Commercial Street (LOS F – AM and PM peak hour)

These impacts related to traffic delays would be considered significant. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure TR-2 would reduce impacts associated with project-related increased delays at Intersection #4: Center Street and Commercial Street to a level less than significant. However, there are no feasible mitigation measures to minimize the impacts at Intersection #2: Garey Street and Commercial Street, and the increased project-related operational traffic delays would continue to exceed LADOT guidelines in 2040. As with the

proposed project, Mitigation Measure LU-1 is proposed to reduce the impact; however, traffic delays at Intersection #2: Garey Street and Commercial Street would remain significant and unavoidable under the build alternative.

US-101 Main Line –2031 with Project

Similar to the proposed project, based on future operating conditions on the US-101 main line in 2031, traffic generated by the build alternative would not have an impact on US-101 operating conditions during the peak hours in 2031, and no impact would occur.

US-101 Main Line –2040 with Project

Similar to the proposed project, based on future operating conditions on the US-101 main line in 2040, traffic generated by the build alternative would not have an impact on US-101 operating conditions during the peak hours in 2040, and no impact would occur.

Indirect Impacts

Similar to the proposed project, the build alternative would support statewide and regional mandates for a more efficient and robust transit system in Southern California, thereby supporting multiple plans, ordinances, and policies with measures for enhanced rail operational capacity at LAUS. No impact would occur.

THRESHOLD 3.3-D	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Direct Impacts – Construction

Similar to the proposed project, construction activities for the build alternative would result in temporary construction-related roadway hazards in the traffic study area. Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations throughout the traffic study area. The US-101 main line and on- and off-ramps at Commercial Street would be also be subject to temporary lane width reductions. Additionally, short-radius curves and/or short sight distances may occur during construction. The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) would reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would not create sharp curves or dangerous intersections in the traffic study area. The design and construction of project-related roadway and bridge improvements, including the realignment of Commercial Street, run-through track infrastructure over the US-101, and new roadways east of Center Street are being designed and coordinated with local agencies, including the City's Bureau of Engineering and Department of Transportation, Caltrans, Metrolink, and CHSRA, as applicable. All project features, including new roadway intersections and pedestrian

connections, would be designed and constructed to comply with applicable agency standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would not fundamentally change the existing uses at LAUS or the roadway system in the traffic study area, and no long-term, indirect transportation-related impacts within the surrounding area would result. Therefore, no indirect impacts would occur.

THRESHOLD 3.3-E	Result in inadequate emergency access

Direct Impacts – Construction

Similar to the proposed project, the build alternative would be located within Area H of the Los Angeles Central Evacuation Map, of which Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway (County of Los Angeles Department of Public Works 2008a).

Similar to the proposed project, modifications to the Vignes Street Bridge and the Cesar Chavez Avenue Bridge would result in temporary closure of one lane in each direction for both roadways, although a minimum of one lane would be maintained throughout the duration of construction. A full closure would occur along Commercial Street between the US-101 ramp at Garey Street and Center Street to construct the run-through track infrastructure south of US-101. Closures would require traffic detouring. Given that traffic would be diverted to local roadways, the LOS of these adjacent intersections would be affected. As previously indicated above, significant delays significant delays anticipated at five intersections during construction would affect traffic along Commercial, Alameda, and Vignes Streets. Compared to the proposed project, implementation of the build alternative would result in significant delays at an additional two intersections.

Construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could interfere with emergency response and access. Although construction would require some temporary roadway closures, not all of the roadway closures would occur at the same time, and other roadways would be available for evacuation. Notwithstanding these circumstances, this is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) would reduce impacts to a level less than significant.

Direct Impacts – Operations

As previously discussed, in the 2031 and 2040 with project conditions, minimal project-related increase delays are expected within the traffic study area. Planned internal roadway reconfiguration and associated modifications to fire lanes and access roads would not significantly affect emergency access, primarily

because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained from Patsaouras Transit Plaza, which would provide emergency and fire lane access to the eastern side of LAUS. Planned internal roadway reconfigurations and associated modifications would be coordinated and approved by the Fire Marshal to ensure the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the identified evacuation routes as identified by the City. This is considered a less than significant impact.

New vertical circulation elements in the new passenger concourse (stairways, escalators, and elevators) would improve passenger egress and ADA accessibility throughout LAUS. In addition, the new passenger concourse is designed to meet all applicable NFPA codes and requirements for passenger egress and emergency evacuations. The build alternative would result in similar impacts as the proposed project. Based on these considerations, impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, no indirect impacts related to emergency routes and limited access to the surrounding area would occur under the build alternative. Therefore, no indirect impacts would occur.

THRESHOLD 3.3-F	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Direct Impacts – Construction

Public Transit

The build alternative would result in impacts similar to the proposed project. At this preliminary stage of engineering design, detailed construction phasing plans that correspond to means and methods to maintain on-time performance for rail operators at LAUS are not available; although it is anticipated construction of the lead tracks, the elevated rail yard, and associated platform improvements would cause potential schedule delays and increased dwell times at LAUS, and potentially other station locations, because not all lead tracks, rail yard tracks, and platforms would be in service at one time. Decreased performance for rail operators at LAUS and temporary disruptions to commuters daily travel patterns may occur. Passengers may also be affected by construction of the new passenger concourse due to detours and temporary accessibility disruptions to Gold Line, Red Line, and Purple Line platforms. This is considered a significant impact. As with the proposed project, Mitigation Measure TR-3 (described in Section 3.3, Transportation and Traffic) would reduce this impact to a level less than significant.

LADOT's Dash Route D, which uses Center Street, would also be affected by construction of the build alternative. During construction of the run-through track structures south of LAUS, a full closure of Commercial Street between US-101 ramp/Garey Street and Center Street would be required. As a result, the build alternative has the potential to affect the bus schedule for this route through a combination of

detours, temporary road closures, and changes in scheduling. The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) would reduce impacts on bus service operators during construction to a level less than significant.

Bicycle and Pedestrian Facilities

Similar to the proposed project, access to and from the existing Amtrak and Metrolink boarding platforms would be modified to facilitate construction of the build alternative. Appropriate safety provisions would be required to be in place to minimize disruptions to pedestrian ingress and egress through LAUS, including sequencing construction within the rail yard (and passenger concourse) and maintaining safe and accessible access to platforms for the Gold Line and regional/intercity trains. Pedestrian and bicycle access to and from LAUS would also be temporarily affected, and bicyclists could be subject to hazardous conditions near work zones during the construction of bridge improvements (e.g., Cesar Chavez Avenue and Vignes Street) and modifications to local streets (including potential street closures and vacations). The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 would reduce impacts on bicyclists and pedestrians during construction to a level less than significant.

Direct Impacts – Operations

Public Transit

Similar to the proposed project, the build alternative is consistent with the plans and policies relative to expansion of existing transportation options and increased rail service in Southern California:

- SCORE Program
- California Transportation Plan 2040 (Caltrans 2016)
- 2016 RTP/SCS (SCAG 2016)
- 2018 California State Rail Plan (Caltrans 2018)
- 2018 Business Plan (CHSRA 2018)

As described in the 2016 RTP/SCS, Link US would improve rail service and safety for Metrolink and the LOSSAN rail corridor, and it would also provide interconnectivity to the planned HSR system, making it an attractive alternative to congested highways. The 2016 RTP/SCS identifies improvements at LAUS as a critical first step in the implementation of regional transportation solutions. From a regional perspective, the build alternative would expand existing transportation options, foster multi-modal connectivity throughout the region, and accommodate the planned HSR system. LAUS is identified as a high-quality transit area and transit priority area within the 2016 RTP/SCS, and the project is specifically identified as the number one future transit improvement for the region. As with the proposed project, impacts are considered beneficial under the build alternative.

Bicycle and Pedestrian Facilities

Center Street – Similar to the proposed project, roadway improvements on Center Street from Ducommun Street to US-101 would be constructed for the build alternative consistent with the Connect US Action Plan and would include the same elements as the proposed project:

- 6-foot-wide cycle tracks with 3-foot buffers in both directions
- 15-foot sidewalks with street trees and landscaping to enhance pedestrian accessibility

Commercial Street – Commercial Street would be realigned to the north, away from the run-through track embankment south of LAUS. Columns supporting the US-101 viaduct would be located within the median and sidewalks of the realigned portion of Commercial Street at the location of the crossing. The realigned portion of Commercial Street would accommodate 5-foot-wide Class II bicycle lanes and 13-foot-wide sidewalks and intersect with Center Street just south of US-101.

Vignes Street – As part of the reconstruction of the Vignes Street Bridge, the existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's Mobility Plan 2035. The Vignes Street Bridge structure would be constructed with sufficient width to accommodate the following, per the City's Mobility Plan 2035:

- ROW width: 100 feet
- Roadway width: 70 feet

Cesar Chavez Avenue – The Cesar Chavez Avenue Bridge would be replaced as part of the throat reconstruction in Phase A. The existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's Mobility Plan 2035 and the City's vision for future comprehensive treatments. The Cesar Chavez Avenue bridge structure would be constructed with sufficient width to accommodate the following per the City's Mobility Plan 2035 and DTLA Community Plan updates currently in process:

- ROW width: 100 feet
- Roadway width: 70 feet

Although Metro is committed to not precluding future active transportation infrastructure to be implemented by the City of Los Angeles, and achieving compatibility with other planned or completed projects, including the Connect US Action Plan and the Los Angeles River Path Project, the build alternative would conflict with the City's Mobility Plan 2035 Policy 2.12. The build alternative would result in impacts similar to the proposed project. Based on these considerations, this is considered a significant impact. As with the proposed project, Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) would improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking

the in the project study area. Upon implementation of Mitigation Measure LU-1, impacts would be reduced to a level less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would accommodate a substantial increase in rail operational capacity for the region, reducing train idling (dwell) time and improving on-time performance for trains using LAUS. The build alternative would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of GHG emissions and VMT, as demonstrated by the operational analysis provided in the 2016 RTP/SCS (Program EIR Table 3.3.4-4) (SCAG 2016).

As discussed above, the build alternative also includes design elements consistent with Metro's *Connect US Plan*, which is intended to encourage people to walk and bicycle between LAUS, First Street/Central Street Station, and the surrounding neighborhoods. Therefore, no indirect impacts would occur.

Aesthetics

THRESHOLD 3.4-C	Substantially degrade the existing visual character or quality of the site or its surroundings

Direct Impacts – Construction

Similar to the proposed project, during construction of the build alternative, vehicle and equipment use would be visible from surrounding land uses, including William Mead Homes, the Mozaic Apartments, and Father Serra Park (minimal views). Vehicles and equipment would be contained within the project footprint; however, some construction areas would be directly adjacent to residential buildings. Under the build alternative, construction activities would extend outside of the railroad ROW closer to some of the apartment buildings at William Mead Homes than the proposed project. Construction activities would also extend into the road during replacement of the Vignes Street and Cesar Chavez Avenue Bridges. The build alternative would result in impacts greater than the proposed project. However, due to the temporary nature of construction activities, impacts would be less than significant.

Direct and Indirect Impacts – Operations

Visual Assessment Unit #1 (William Mead Homes)

Similar to the proposed project, although the visual quality of Visual Assessment Unit #1 is low, the build alternative would introduce new, noticeable infrastructure elements and attributes to the visual landscape that would contribute to a substantial degradation to existing visual character. These attributes include:

- Form (visual mass and shape)
- Dominance (position, size, or contrast)
- Scale (apparent size as it relates to the surroundings)

Views from Key View #1a and Key View #1b would consist of a retaining wall supporting new lead tracks that would run alongside William Mead Homes. A sound wall is also required to reduce operational noise levels below applicable thresholds. The retaining wall and sound wall would present new linear infrastructure elements that would be a dominant feature substantially larger than any of the current surroundings within the residential community. Compared to the proposed project, the retaining wall and sound wall for the build alternative would be located closer to the William Mead Homes buildings to facilitate a dedicated track alignment through the throat segment. Encroachment outside of the existing railroad ROW would require reconfiguration of Bolero Lane, parking modifications, removal of an existing tree, and other civil improvements, including relocation of existing overhead power lines. The physical encroachment outside of the railroad ROW, combined with the scale of the retaining wall, would result in a moderate change to visual character and quality. Viewer response would be high; therefore, impacts would be moderately high. Construction of a sound wall would further increase the scale of visual change, resulting in a moderately high change to visual quality. Viewer response would be high; therefore, visual impacts would be high. Impacts of the build alternative would be greater than the proposed project due to the position of the wall on the property. This is considered a significant impact. Mitigation Measure AES-1 (described in Section 3.4, Aesthetics) is proposed to reduce impacts to a level less than significant.

Figure 5-9 through Figure 5-12 depict Key Views #1a and #1b in the existing and post-project conditions upon implementation of the build alternative with a new retaining wall and a new sound wall adjacent to the William Mead Homes complex. The visual simulations for Key Views #1a and #1b were prepared to illustrate the potential visual impacts resulting from a new retaining wall and sound wall at these locations. The retaining wall and sound wall depicted are conceptual, and do not include any aesthetic treatments because these details are anticipated to be finalized during final design.

Figure 5-9. Key View #1a – Existing Condition (Retaining Wall)

Figure 5-10. Key View #1a – Post Project Condition (Retaining Wall and Sound Wall)

Figure 5-11. Key View #1b – Existing Condition (Retaining Wall)

Figure 5-12. Key View #1b –Post-Project Condition (Retaining Wall and Sound Wall)

Visual Assessment Unit #2 (Vignes Street Corridor)

Similar to the proposed project, views from Key Views #2a and #2b would consist of a new railroad bridge façade on the crossing over Vignes Street, and retaining walls to support new lead tracks in the throat segment. The new bridge would increase the scale of vertical elements in the visual landscape; however, within much of the corridor, the change would not substantially affect existing views in the full build-out condition due to the presence of existing infrastructure. Commuters on Vignes Street would have more proximal views as they approach the bridge.

The bridge would be placed in the same location as the existing bridge. The change in the height of the bridge over Vignes Street would result in a low change to visual character. Viewer response would be low for business owners/employees and visitors; therefore, impacts would be low for these viewer groups. Viewer response would be moderate for commuters; therefore, impacts would be moderately low for this viewer group. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #3 (Cesar Chavez Avenue Corridor/Mozaic Apartments)

Similar to the proposed project, views from Key Views #3a and #3b in the full build-out condition for the build alternative would consist of a new railroad bridge façade on the crossing over Cesar Chavez Avenue, retaining walls to support the new lead tracks and elevated rail yard, and platform canopies. The new bridge would support tracks that would be elevated 10 to 15 feet higher than the existing top of rail at this location. Some of the canopies would be visible from viewers along Cesar Chavez Avenue and residents of the Mozaic Apartments.

The new bridge would be replaced in the same location as the existing bridge, although the new canopies would introduce a more modern element into the railroad ROW. Similar to the proposed project, the new bridge and retaining walls to support elevated tracks for the build alternative would increase the scale of vertical and horizontal infrastructure elements in the visual landscape; however, the change would not substantially affect existing views. Commuters on Cesar Chavez Avenue would have more proximal views as they approach the bridge.

Similar to the proposed project, the change in the height and span of the bridge over Cesar Chavez Avenue, along with the introduction of new retaining walls, would result in a low change to visual character. Viewer response would be low for business owners/employees and visitors; therefore, impacts would be low for these viewer groups. Viewer response would be moderate for commuters; therefore, impacts would be moderately low for this viewer group. Impacts of the build alternative would be similar to the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #4 (Alameda Street Corridor/Father Serra Park)

Compared to the proposed project, a reduced magnitude of impact from Key Views #4a and #4b would result from implementation of the at-grade passenger concourse with a grand canopy. No direct impact would occur because no changes to the visual quality of LAUS would occur due to the preservation of the historic main building (e.g., tile roof, stucco wall cladding, arched main entrance, decorated beams, and

tile floors) and other features, such as the ticketing halls, arcades, clock tower, and patios. For this reason, visual simulations for Key View #4a and #4b are not depicted for the build alternative.

Visual Assessment Unit #5 (Commercial Street/US-101 Corridor)

Views from Key Views #5a, #5b, and #5c would consist of new run-through structures south of LAUS, including the common viaduct/deck that would be constructed over US-101 in the interim condition. Unlike the proposed project, views of the at-grade passenger concourse elements would not be visible from south of LAUS, with exception of the grand canopy over the elevated rail yard.

Similar to the proposed project, the run-through track structures would be highly visible south of LAUS following construction of this infrastructure in the interim condition. The viaduct over US-101 would be constructed of materials similar to those used in the Alameda Street overhead crossing and the Gold Line viaduct, but it would be a more prominent structure than the existing Gold Line viaduct over US-101. The build alternative would result in a substantial addition of new transportation infrastructure elements to the existing visual environment south of LAUS, but the proposed improvements would be in context with the existing transportation infrastructure in this assessment unit, as it is primarily a transportation corridor with multiple highway and railroad-oriented uses. The scale of the highway corridor and surrounding development is linear and large; therefore, the addition of the run-through track viaduct structure and embankment would not significantly impact the low visual character of this visual assessment unit. Impacts of the build alternative in Visual Assessment Unit #5 would be similar to the proposed project.

Similar to the proposed project, the changes in views and scale from the run-through track structures would be moderately-high, although, in context with the surrounding transportation infrastructure and industrial land uses, the build alternative would result in a low change to visual character and quality (resource change). As there are no residential land uses or other sensitive land uses at this location, viewer response would vary from moderately-high for business owners/employees experiencing new, large structures, while the visual response of visitors and commuters on US-101 (northbound and southbound travelers) would be low as there would be minimal disruption to their visual expectations.

Travelers along northbound and southbound US-101 would be subject to the greatest duration of views of the US-101 viaduct structure, primarily because they would be travelling toward and under the viaduct, and in some cases slowly during heavy traffic. Views are anticipated to be no different than any other overhead crossings within Caltrans ROW. Although travelers along US-101 may be subject to a visual change with introduction of new run-through track infrastructure, the aesthetics of the proposed abutments and bents to support the US-101 viaduct would be designed consistent with other overhead crossings within Caltrans ROW, and this portion of US-101 is not a protected scenic highway.

For the proposed project, US-101 travelers would have limited views of the elevated portion of the new passenger concourse (northbound travelers especially), because the portion of US-101 south of LAUS is depressed, views of the new passenger concourse would be perpendicular to the direction travelers would be facing, and the existing retaining wall at the south end of LAUS is the primary visible feature in this area. Upon implementation of the proposed project, the rail yard would be elevated up to 15-feet higher than the

existing condition, the southern retaining wall would be expanded, and the above-grade passenger concourse would be constructed in the center of the rail yard, located on average 550 feet – and no closer than 360 feet – north of the US-101 ROW, further reducing the visibility of the concourse to travelers along US-101. Therefore, impacts would be moderate for business persons and low for visitors and commuters. Based on these considerations, this impact is considered less than significant. For the build alternative, views of the grand canopy may be visible, but at a reduced scale compared to the above-grade passenger concourse, due to the height. Impacts of the build alternative would be less than the proposed project.

Visual Assessment Unit #6

Within Visual Assessment Unit #6, the build alternative would include the construction of a new at-grade passenger concourse. Similar to the proposed project, as part of the new passenger concourse, new vertical circulation elements and standard amenities, including benches, variable message signs, new lighting, closed-circuit television security cameras, ticket vending machines, passenger waiting areas, and trash receptacles, would be distributed throughout the concourse. Similar to existing conditions, the rail yard would be within an exterior environment, although it would be elevated approximately 15 feet.

Under the build alternative, the new at-grade passenger concourse would replace the existing pedestrian passageway, ramps, and railings leading to the platforms and would introduce new modern concourse amenities with larger open aisles for enhanced ingress/egress throughout. The existing pedestrian passageway would be demolished. The scale and modern architectural style of the at-grade passenger concourse would result in changes to the character of the visual assessment unit; however, similar to the proposed project, the design of the passenger concourse would be compatible with the surrounding visual landscape in Downtown Los Angeles, would include sustainable design features consistent with the vision for LAUS, and would improve upon the existing aesthetics in the existing rail yard, ramp areas, and pedestrian passageway.

Similar to the proposed project, because the design of the concourse would be compatible with the existing setting, and would be expected to improve the existing aesthetics, the build alternative would result in a moderately-high and beneficial change to visual character and quality (resource change). Viewer response would be moderately-high for business owners/employees and visitors; therefore, impacts would be moderately-high for these viewer groups. Viewer response would be moderate for commuters, so impacts would be moderately-high for this viewer group. The impacts on business owners/employees, visitors, and commuters are anticipated to be beneficial. Impacts of the build alternative in Visual Assessment Unit #6 would be similar to the proposed project. Impacts are considered less than significant.

Views of New Passenger Concourse within Visual Assessment Unit #6

Architectural representations of the new at-grade passenger concourse depicting the interior and exterior views from within Visual Assessment Unit #6 were prepared. Figure 5-13 depicts the viewpoint locations that were selected to depict the concourse.

Figure 5-14 through Figure 5-19 depict views of and within the West Plaza, East Plaza, ingress/egress areas, waiting areas, vertical circulation elements, and platforms areas (Views A through F). The renderings are provided to illustrate the extent of architectural expansion and renovation proposed for LAUS.

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Figure 5-13. Viewpoint Locations of the New At-Grade Passenger Concourse

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Figure 5-14. View A – At-Grade Passenger Concourse
(Exterior View of West Plaza Looking North)

Figure 5-15. View B – At-Grade Passenger Concourse
(Interior View of Vertical Circulation Elements Looking North)

Figure 5-16. View C – At-Grade Passenger Concourse
(Interior View of Core Retail Space and Waiting Areas Looking East)

Figure 5-17. View D – At-Grade Passenger Concourse
(Exterior View of Platforms and Historic LAUS Looking West)

Figure 5-18. View E – At-Grade Passenger Concourse
(Interior View of East Plaza Looking East)

Figure 5-19. View F – At-Grade Passenger Concourse
(Exterior View of East Plaza Looking West)

THRESHOLD 3.4-D	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Direct Impacts – Construction

Similar to the proposed project, during construction of the build alternative, activities could occur during nighttime hours where temporary lighting is used at discrete locations for certain construction activities. The project study area is currently an urban area with multiple sources and types of lighting typically associated with a large, metropolitan city. The use of construction lighting during nighttime hours would not change the character of the area; however, depending on the placement of the temporary construction lighting, residences that are located in proximity to temporarily lighted areas may be affected. As a result, residents could be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction. The build alternative would have impacts similar to the proposed project. This impact would be significant. As with the proposed project, Mitigation Measure AES-2 (described in Section 3.4, Aesthetics) would reduce construction-related light and glare impacts to a level less than significant.

Direct Impacts – Operations

Visual Assessment Unit #1

Similar to the proposed project, the build alternative would result in an increased number of trains and signals in the throat segment, which would result in an increase in lighting as trains move through the area; however, some of this lighting may be blocked by the sound wall required as part of Mitigation Measure NV-1 (described in Section 3.6, Noise and Vibration). Any new light poles that may be required for safety purposes are also anticipated to be blocked by the sound wall.

Visual Assessment Unit #1 is within a developed urban area, and there are a limited amount of light-sensitive land uses (residences in Segments 1 and 2 of the project study area). The additional lighting within an existing railroad ROW in an area heavily utilized by transportation uses would be minor, and impacts related to lighting would not be expected to substantially affect the surrounding area. The build alternative would have impacts similar to the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #2

Similar to the proposed project, views within Visual Assessment Unit #2 would be limited primarily to the new bridge that would support new lead tracks over Vignes Street in the full build-out condition of the build alternative. The bridge would be elevated over Vignes Street; however, there would be no additional light or glare from the key views in the throat segment (Key Views #2a and #2b). The build alternative would have impacts similar to the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #3

Similar to the proposed project, views within Visual Assessment Unit #3 would primarily consist of the new bridge that would support new lead tracks over Cesar Chavez Avenue in the full build-out condition. The bridge would be elevated, and lights would be incorporated into the design for safety purposes.

Similar to the proposed project, the build alternative would result in an increased number of trains through LAUS, which would increase the light from locomotives and trains as they move through the area. On each of the seven elevated platforms, new lighting would be incorporated into the design for safety purposes, which may result in added light for some of the units in the Mozaic Apartments, if not properly designed and installed. The new platform canopies also have the potential to result in additional daytime glare. Currently, there is a large amount of illumination in this visual assessment unit from the existing station, and the amount of lighting added by the build alternative would not represent a noticeable or significant increase over existing levels. Compared to the proposed project, operations-related light and glare impacts for Visual Assessment Unit #3 would be reduced under the build alternative, because the at-grade passenger concourse would be constructed below the rail yard. Impacts are considered less than significant.

Visual Assessment Unit #4

Similar to the proposed project, views of proposed infrastructure within Visual Assessment Unit #4 would be very limited in the full build-out condition and would generate a low level of nighttime changes due to illumination. The new at-grade passenger concourse would be illuminated similar to a modern office building rather than a highly illuminated event venue. The light levels would not be significant for users along Alameda Street or those observing from Father Serra Park site across Alameda Street to the west. Due to the reduced scale of the at-grade passenger concourse, the build alternative would have fewer visual impacts than the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #5

Similar to the proposed project, the build alternative would include the construction of run-through track structures over US-101, along Commercial Street, and additional viaduct structures east of Center Street. The run-through track structure could introduce potential shadows on US-101 and Commercial Street given the time of year and time of day (interim and full build-out conditions); however, there are no residential land uses or other sensitive land uses that would be impacted by shadows from the run-through track structures at this location. Lighting would be installed within the soffit of the US-101 viaduct for safety purposes and would be designed in accordance with American National Standards Institute/Illuminating Engineering Society of North America Recommended Practice for Tunnel Lighting (Illuminating Engineering Society 2011). The additional tracks would result in an increased number of trains, which would increase lighting as lighted trains move through the area. There is currently a large amount of lighting in this visual assessment unit from transportation, commercial, and industrial uses, and the amount of lighting added by the run-through track infrastructure would not be substantially noticeable. The build alternative would have impacts similar to the proposed project and is not expected to result in additional daytime glare in this visual assessment unit.

Because Visual Assessment Unit #5 is within a developed urban area, and because additional lighting would be minor, impacts related to lighting would not be expected to substantially affect the surrounding area. The build alternative would have impacts similar to the proposed project. Impacts are considered less than significant.

Visual Assessment Unit #6

Views within Visual Assessment Unit #6 are limited primarily to the passenger concourse, rail yard tracks, and, to a lesser degree, the run-through structures. Similar to the proposed project, the build alternative would include the reconstruction and raising of the rail yard. The passenger concourse would include new lighting that would be on multiple levels throughout. The lighting from the passenger concourse would likely be visible from a distance, with this impact greater for the proposed project than the build alternative; however, there is a large amount of existing lighting in this visual assessment unit from transportation, commercial, and industrial uses, and the amount of lighting added by the tracks would not be substantially noticeable.

The increased number of trains would result in an increase in lighting as illuminated trains move through the area. Similar to the proposed project, additional platform lighting would also be required for the build alternative. The additional platform features, including platform canopies, could also result in additional daytime glare. The existing station currently has a large amount of lighting spilling out into this visual assessment unit, and the amount of lighting added by the project would not be substantially different. The build alternative would have impacts similar to the proposed project.

Although Visual Assessment Unit #6 is within a developed urban area, impacts related to lighting would not be expected to substantially affect the surrounding area, but, because the tracks and platforms would be elevated higher than under existing conditions, residents nearest to the rail yard would be potentially exposed to noticeably higher levels of light (perception due to the elevation change). The build alternative would have impacts similar to the proposed project. These impacts would be considered significant. Mitigation Measure AES-3 (described in Section 3.4, Aesthetics) would reduce operations-related light and glare-related impacts to a level less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would not result in any indirect impacts from lighting or glare; therefore, there would be no impact.

Air Quality and Global Climate Change

THRESHOLD 3.5-A	Conflict with or obstruct implementation of the applicable air quality plan

Direct Impacts – Construction

Similar to the proposed project, construction activities associated with the build alternative would be temporary in nature. With implementation of best available control measures identified in the SCAQMD Rule 403 for fugitive dust emissions from earth-moving and grading activities, construction activities in all construction phases would not conflict with or obstruct implementation of the regional AQMP. Therefore, no impact would occur.

Direct Impacts – Operations

Air Quality Management Plan

As identified in the analysis below for Threshold 3.5-B and Threshold 3.5-C, by providing increased station capacity for regional/intercity rail and accommodating the planned HSR system, similar to the proposed project, the build alternative would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. As discussed below, the build alternative would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of GHG and vehicle miles traveled. Therefore, the increased emissions from rail operations would be offset by reductions in VMT in 2026, 2031, and 2040. For this reason, it is reasonable to conclude that the build alternative would not exceed SCAQMD's thresholds and would more than likely contribute to net reductions. In addition, upon implementation of Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change), the net increase in daily emissions would be reduced to below the SCAQMD thresholds. Therefore, as with the proposed project, the build alternative is consistent with the objectives of the AQMPs and would not affect implementation of the AQMPs.

Regional Transportation Plan/Sustainable Communities Strategy (2016) Consistency

Link US is included in the 2016 RTP/SCS as a financially constrained project. The proposed project is consistent with the applicable goals established as part of the 2016 RTP/SCS. The build alternative would result in impacts similar to the proposed project. A less than significant impact would occur.

Indirect Impacts

Similar to the proposed project, the build alternative would not result in indirect impacts that would conflict with or obstruct implementation of the applicable AQMP.

THRESHOLDS 3.5-B AND 3.5-C	B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors)

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, material delivery trips, and heavy-duty haul truck trips generated from construction activities during each construction phase. In addition, earthwork activities would result in fugitive dust emissions and paving operations would release ROGs from off-gassing. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

Equipment Exhaust and Related Construction Activities. The construction equipment hours, haul truck trips, and employee commute trips required to build the build alternative were estimated April 2018. The construction emissions were calculated using the equipment list and U.S. EPA and SCAQMD emission rates. Under the build alternative, project-related construction activities are estimated to generate 1,535 daily trips (in passenger car equivalent), which is an increase of 892 daily trips compared to the proposed project. Therefore, compared to the proposed project, total exhaust emissions generated during the entire construction period are higher under the build alternative.

The total exhaust emissions generated during the entire construction period are shown in Table 5-2 for the build alternative. As shown in Table 5-2, the daily construction emissions would exceed the SCAQMD's NO_X, PM_{10}, and $PM_{2.5}$ thresholds. As described in Section 3.5, Air Quality and Global Climate Change, the proposed project would also exceed the SCAQMD's NO_X, PM_{10}, and $PM_{2.5}$ thresholds. Therefore, this impact is similar to the proposed project.

The annual construction emissions generated during the average construction year are listed in Table 5-3 for the build alternative. As stated above, compared to the proposed project, construction-related daily trips are higher under the build alternative. Therefore, compared to the proposed project, annual construction emissions generated during the average construction year are higher under the build alternative.

Table 5-2. Construction Emissions – Build Alternative with At-Grade Passenger Concourse

Emission Source	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Off-Road Equipment (pounds)	313,419	48,753	318,352	21,206	16,012	95,487,445
On-Road Equipment (pounds)	20,577	1,671	77,800	8,339	3,376	33,557,056
Fugitive Dust (pounds)	—	—	—	450,000	94,500	—
Total(pounds)	333,996	50,424	396,151	479,545	113,888	129,044,501
Average Day (pounds/day)	**222.7**	**33.6**	**264.1**	**319.7**	**75.9**	**86,029.7**
SCAQMD Thresholds	**550**	**75**	**100**	**150**	**55**	**—**
Exceedance	**No**	**No**	**Yes**	**Yes**	**Yes**	**—**

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District

Table 5-3. Annual Construction Emissions – Build Alternative with At-Grade Passenger Concourse

Emission Source	CO (tons)	ROG (tons)	NO_x (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_2e (tons)
Off-Road Equipment	156.7	24.4	159.2	10.6	8.0	47,743.7
On-Road Equipment	10.3	0.8	38.9	4.2	1.7	16,778.5
Fugitive Dust	—	—	—	225.0	47.3	—
Total	167.0	25.2	198.1	239.8	56.9	64,522.3
Average Year	**27.8**	**4.2**	**33.0**	**40.0**	**9.5**	**10,753.7**

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas

As with the proposed project, Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) are proposed to reduce construction emission-related impacts. Table 5-4 identifies the mitigated construction emission levels for the peak day for the build alternative. Table 5-5 identifies the annual mitigated construction emissions levels for the build alternative. Similar to the proposed project, construction emissions resulting from the build alternative would exceed the localized SCAQMD PM_{10} significance thresholds; therefore, impacts would remain significant and unavoidable. This impact is similar to the proposed project.

Table 5-4. Daily Construction Emissions After Mitigation – Build Alternative with At-Grade Concourse

Source	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Off-Road Equipment (pounds)	70,192	19,008	49,296	6,763	3,370	58,849,564
On-Road Equipment (pounds)	20,577	1,671	77,800	8,339	3,376	33,557,056
Fugitive Dust (pounds)	—	—	—	225,000	47,250	—
Total (pounds)	90,769	20,679	127,096	240,102	53,996	92,406,620
Average Day (pounds/day)	60.5	13.8	84.7	160.1	36.0	61,604.4
SCAQMD Thresholds	550	75	100	150	55	—
Exceedance	No	No	No	Yes	No	—

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=oxides of nitrogen; $PM_{2.5}$=particles of 2.5 micrometers and smaller; PM_{10}=particles of 10 micrometers and smaller; ROG=reactive organic gas; SCAQMD=South Coast Air Quality Management District

Table 5-5. Annual Construction Emissions After Mitigation – Build Alternative with At-Grade Concourse

Source	CO (tons)	ROG (tons)	NO_x (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_2e (tons)
Off-Road Equipment	35.1	9.5	24.6	3.4	1.7	29,424.8
On-Road Equipment	10.3	0.8	38.9	4.2	1.7	16,778.5
Fugitive Dust	—	—	—	112.5	23.6	—
Total	45.4	10.3	63.5	7.6	3.4	46,203.3
Average Year	7.6	1.7	10.6	1.3	0.6	7,700.5

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_x=oxides of nitrogen; $PM_{2.5}$=particles of 2.5 micrometers and smaller; PM_{10}=particles of 10 micrometers and smaller; ROG=reactive organic gas

LST Analysis. Table 5-6 shows the construction-related emissions of CO, NO_x, PM_{10}, and $PM_{2.5}$ compared to the LSTs for Central Los Angeles area at a distance of 25 meter (m) for the build alternative. As required by the SCAQMD's LST Methodology, only the on-site construction emissions are included in Table 5-6. As identified in Table 3.5-11 of Section 3.5, Air Quality and Global Climate Change, the proposed project would exceed the LSTs for PM_{10} and $PM_{2.5}$. Compared to the proposed project, calculated emission rates for the build alternative would exceed the LSTs for NO_x, PM_{10}, and $PM_{2.5}$ (Table 5-6).

Based on the results of the construction air quality analysis, impacts would be significant. Mitigation Measures AQ-1 and AQ-2 would reduce the exhaust and fugitive dust emissions (CO, NO_x, ROG, PM_{10}, and $PM_{2.5}$) generated on-site during construction.

- Mitigation Measure AQ-1 (described in Section 3.5, Air Quality and Global Climate Change) requires compliance with the SCAQMD's Rule 403 (fugitive dust control measures) and would reduce on-site fugitive dust emissions by 50 percent.
- Mitigation Measure AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) requires all on-site construction equipment to meet or exceed U.S. EPA's Tier 4 Final emission standards and for all off-road construction equipment to be fueled using 100 percent renewable diesel. This measure would reduce the on-site exhaust emissions by up to 95 percent when compared with the average construction fleet for the SCAB.

Table 5-6. Summary of On-Site Construction Emissions, Localized Significance – Build Alternative with At-Grade Passenger Concourse

Project Segment	Emissions			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Total (pounds)	314,447.4	322,241.9	471,622.5	110,681.2
Daily (pounds)	209.6	214.8	314.4	73.8
SCAQMD Thresholds	**1,861**	**161**	**16**	**8**
Exceeds Daily SCAQMD Threshold?	**No**	**Yes**	**Yes**	**Yes**

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NO_X=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; ROG=reactive organic gas

Table 5-7 identifies the on-site construction emissions after implementing Mitigation Measures AQ-1 and AQ-2 for the build alternative. As shown, after implementation of mitigation, the calculated emissions rates for the on-site construction activities associated with the build alternative would continue to exceed the LSTs for PM_{10} and $PM_{2.5}$.

Similar to the proposed project, after implementation of proposed mitigation, construction-related emissions resulting from the build alternative would continue to exceed the localized SCAQMD significance thresholds; therefore, impacts would remain significant and unavoidable. As discussed in the *Link US Air Quality/Climate Change and Health Impact Assessment* (Appendix G of this EIR), particulate matter emissions can contribute to localized health impacts. Specific impacts include, but are not limited to, irritated eyes and respiratory tracts, decreased lung capacity, and increased cancer and mortality. While it is common practice to analyze the correlation between an individual facility's TAC emissions and expected localized human health impacts, a similar analysis is not feasible for criteria pollutants. Instead, potential human health impacts associated with criteria air pollutants are evaluated on a regional level based on the NAAQS established by the U.S. EPA. Available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual project's air emissions and specific human health impacts.

Attempting to identify a change in background pollutant concentrations that can be attributed to a single project would be a theoretical exercise. A single project's emissions constitute only a miniscule portion of the immense volume of air contained in a regional air basin. Additionally, background concentrations of regional pollutants are not temporally or geographically uniform throughout an air basin, and are constantly fluctuating based on meteorology and other environmental factors. An analysis attempting to take "tons per year" regional mass emissions data and translate that into precise pollutant concentrations, and project-specific health impacts, would not be practical or meaningful.

For the same reason, even if a model were developed to accurately ascertain local increases in concentrations of criteria pollutants, it would remain impossible to correlate that increase in concentration to a specific health impact. Such models are designed to determine regional, population-wide health

impacts, and are not accurate when applied at the local level. Please refer to Threshold 3.5-D for an evaluation of the build alternative's health risks associated with DPM emissions prepared pursuant to Office of Environmental Health Hazard Assessment guidelines.

Table 5-7. Summary of On-Site Construction Emissions After Mitigation, Localized Significance – Build Alternative with At-Grade Concourse

	Emissions			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Total (pounds)	71,220.9	53,186.1	232,179.9	50,789.0
Daily (pounds)	47.5	35.5	154.8	33.9
SCAQMD Thresholds	1,861	161	16	8
Exceeds Daily SCAQMD Threshold?	No	No	Yes	Yes

Source: Appendix G of this EIR

Notes:
CO=carbon monoxide; NO_x=oxides of nitrogen; $PM_{2.5}$=particulate matter less than 2.5 microns; PM_{10}=particulate matter less than 10 microns; SCAQMD=South Coast Air Quality Management District

Direct Impacts – Operations

The build alternative would have similar air quality impacts during operations as the proposed project. Potential long-term operational air quality impacts would result from increased train activity, mobile source emissions associated with vehicular trips in the project study area, and stationary source emissions from on-site energy consumption. Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) is proposed that would require the use of emerging technologies, including renewable diesel to reduce criteria pollutant emissions and diesel pollutant concentrations below a level that would not exceed SCAQMD thresholds. Implementation of Mitigation Measure AQ-3 would reduce the 2031 emissions by 51 percent and the 2040 emissions by 56 percent. As with the proposed project, upon implementation of Mitigation Measure AQ-3, the significant operational impacts associated with the build alternative would be reduced to a level less than significant.

Indirect Impacts

Similar to the proposed project, as stated previously, by providing increased station capacity, the build alternative would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel, thereby reducing the VMT in the area. This means that the project's increase in emissions would be offset by reductions in VMT in 2040 (SCAG 2016). For this reason, it is reasonable to conclude that the build alternative would not exceed SCAQMD's thresholds, but would more than likely contribute to net reductions in 2040. Based on these results, the build alternative would experience an air quality benefit in 2031 that would incrementally increase as more trains (equipped with Tier 4 emission controls) come into operation in response to increased ridership. The build alternative would result in impacts similar to the proposed project. As with the proposed project, impacts are considered beneficial under the build alternative.

THRESHOLD 3.5-D	Expose sensitive receptors to substantial pollutant concentrations

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would result in emissions of DPM from heavy-duty construction equipment and trucks operating in the project study area (e.g., water trucks and haul trucks).

For the purposes of conducting a cancer risk analysis, a 6-year exposure scenario, corresponding to the approximate construction period for the entire build alternative, was evaluated. The construction period is the same as the proposed project.

The DPM (PM_{10}) emissions for all emission sources during the construction period were compiled and added together to represent worst-case emission source for DPM. Due to the long-term nature of health risks, the modeling used the average day emissions instead of the peak day emissions. The equipment and vehicles included in this total are:

Build Alternative with At-Grade Concourse

- Off-road vehicles and equipment: 8.85 pounds/day PM_{10}
- Haul Trucks (Assume last mile on site): 0.13 pound/day PM_{10}
- Total DPM (PM_{10}): 8.98 pounds/day PM_{10}

These values for the build alternative are 3.07 lbs/day PM_{10} higher for off-road vehicles and equipment and 0.03 lb/day PM_{10} higher for haul trucks than the proposed project, with total DPM 3.1 pounds/day PM_{10} higher for the build alternative than the proposed project.

The DPM emissions from diesel-powered construction equipment and on-site diesel-powered trucks that would be used during construction are provided in the *Link US Air Quality Assessment Report and Health Risk Assessment* (Appendix G of this EIR). Total emissions of construction-related exhaust PM_{10}, as a surrogate for DPM, during the overall construction period were calculated and then converted to grams per second for use in the AERMOD model. Table 5-8 identifies the modeled annual average DPM concentration, and the associated cancer risks, at the closest land uses to the build alternative. As shown, the peak cancer risks during construction exceed the SCAQMD's threshold of 10 in 1 million. This impact is considered significant. The build alternative would generally result in higher cancer risks than the proposed project. However, as with the proposed project, Mitigation Measure AQ-2, which requires all off-road equipment to meet or exceed EPA's Tier 4 final emissions standards, would reduce this impact to a level less than significant.

Table 5-8. Modeled Cancer Risks – Build Alternative with At-Grade Passenger Concourse (per million)

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks
William Mead Homes	Residential	0.068	25.2
William Mead Homes	Residential	0.061	22.6
Mozaic Apartments	Residential	0.353	129.8
Mission Road Residences	Residential	0.024	9.0
Mission Road Residences	Residential	0.020	7.4
One Santa Fe Apartments	Residential	0.003	1.0
Utah Street Elementary School	School	0.014	0.2
Mendez High School	School	0.016	0.2
Ann Street Elementary School	School	0.093	1.4
Twin Towers Correctional Facility	Commercial Worker	0.247	2.7
Los Angeles County Men's Central Jail	Commercial Worker	0.156	1.7
Metro Offices	Commercial Worker	0.750	8.2
Terminal Annex	Commercial Worker	0.260	2.8

Source: Appendix G of this EIR

Notes:
µg/m³= micrograms per cubic meter; Metro=Los Angeles County Metropolitan Transportation Authority

Table 5-9 identifies the after mitigation modeled annual average DPM concentration, and the associated cancer risks, at the closest land uses to the footprint for the build alternative. The complete results are included in *Link US Air Quality Assessment Report and Health Risk Assessment* (Appendix G of this EIR). As shown, the peak cancer risks would continue to exceed the SCAQMD's threshold of 10 in 1 million at the Mozaic Apartments. The build alternative would generally result in higher after mitigation modeled peak cancer risks than the proposed project. This impact would be considered significant.

Table 5-9. Modeled Cancer Risks – Build Alternative with At-Grade Passenger Concourse - Mitigated (per million)

Receptor	Land Use Type	Modeled Annual Concentrations (µg/m³)	Cancer Risks
William Mead Homes	Residential	0.007	2.6
William Mead Homes	Residential	0.006	2.4
Mozaic Apartments	Residential	0.037	13.6
Mission Road Residences	Residential	0.003	0.9
Mission Road Residences	Residential	0.002	0.8
One Santa Fe Apartments	Residential	0.000	0.1
Utah Street Elementary School	School	0.001	0.0
Mendez High School	School	0.002	0.0
Ann Street Elementary School	School	0.010	0.2
Twin Towers Correctional Facility	Commercial Worker	0.026	0.3
Los Angeles Men's County Central Jail	Commercial Worker	0.016	0.2
Metro Offices	Commercial Worker	0.079	0.9
Terminal Annex	Commercial Worker	0.027	0.3

Source: Appendix G of this EIR

Notes:
µg/m³= micrograms per cubic meter; Metro=Los Angeles County Metropolitan Transportation Authority

Table 5-10 identifies the maximum chronic hazard index for the maximally exposed individual under the unmitigated and mitigated conditions. Compared to the proposed project, the unmitigated chronic hazard index would be 0.047 higher and the mitigated chronic hazard index would be 0.01 higher for the build alternative. A chronic hazard index is calculated by dividing the annual average concentration of a toxic pollutant by the chronic reference exposure level for that pollutant. For DPM the chronic reference exposure level is 5.0. As shown, the chronic hazard index at this location is lower than the SCAQMD significance threshold of less than 1.0.

Table 5-10. Chronic Hazard Index

Receptor	Chronic Hazard Index	
	Unmitigated	Mitigated
Maximally Exposed Individual – Build Alternative with At-Grade Passenger Concourse	0.071	0.007

Source: Appendix G of this EIR

As detailed in Section 3.5, Air Quality and Global Climate Change, the anticipated cancer risk associated with construction of the proposed project would be below the SCAQMD's 10 in a million threshold, and impacts would be reduced to a level less than significant with implementation of mitigation (Mitigation Measures AQ-1 and AQ-2). Compared to the proposed project, the cancer risk at the Mozaic Apartments would remain above the threshold at 13.6 in 1 million after implementation of mitigation. Under the build alternative, impacts would remain significant and unavoidable. The build alternative would result in greater impacts than the proposed project due to the increased amount of truck trips associated with a greater level of excavation expected from the build alternative.

Naturally Occurring Asbestos. As previously indicated, the project study area is not located in a region of Los Angeles County that has been identified as containing serpentine or ultramafic rock. Therefore, there is a negligible potential that construction workers and nearby sensitive receptors would be exposed to naturally occurring asbestos during project construction. The build alternative would result in impacts similar to the proposed project. Therefore, no impact would occur.

Direct Impacts – Operations

Similar to the proposed project, implementation of the build alternative would alter the flow of rail operations within the project study area. In addition, the build alternative would facilitate an increase in rail operations in the future by increasing the current train capacity. Due to the flexibility provided by the new run-through tracks, the future daily operations on a track-by-track basis are unknown. Therefore, for the purpose of the DPM risk analysis, the project study area was modeled as point sources for idling within the station and as line sources for the rail operations within the project study area.

Section 7.2 of the *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR) lists the peak cancer risks at 13 locations within the project study area for the Existing, 2026 no project, 2026 with project, 2031 no project, 2031 with project, 2040 no project, and 2040 with project condition, respectively. Peak cancer risks for the proposed project would be similar for the build alternative.

Section 7.2 of the *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR), shows the maximum chronic hazard index for the maximally exposed individual for the existing, 2026, 2031, and 2040 conditions. These values would be similar for the build alternative. The chronic hazard index is lower than the SCAQMD significance threshold of less than 1.0.

In summary, when compared to the no project conditions, the sensitive land uses within the project study area would be exposed to an increased cancer risk of more than 10 in 1 million. Similar to the proposed project, when compared to the existing (2016) conditions, the build alternative would result in lower health risks at the majority of the land uses in the project area. As with the proposed project, upon implementation of Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change), the significant operational impacts associated with the build alternative would be reduced to a level less than significant.

Indirect Impacts

As with the proposed project, the build alternative would generate an air quality benefit in 2031 that would incrementally increase as more trains (equipped with Tier 4 emission controls) come into operation in response to increased ridership. The build alternative would result in impacts similar to the proposed project. Impacts are considered beneficial.

THRESHOLD 3.5-E	Create objectionable odors affecting a substantial number of people

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative could result in emission of odors from construction equipment and vehicles (e.g., diesel exhaust). It is anticipated that these odors would be short-term, limited in extent at any given time, and distributed throughout the project study area during the duration of construction, and, therefore, would not affect a substantial number of individuals. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Similar to the proposed project, the build alternative does not include any uses identified by the SCAQMD as being associated with odors; therefore, it is anticipated that the build alternative would not produce objectionable odors. During operation, emissions from train idling (i.e., diesel exhaust and VOCs) would result in objectionable odors. However, in the opening year, the improved efficiency and reduced idling would reduce the potential for odor generation. In 2040, the reduced idling, improved efficiency, and improved engine technologies would minimize any increase in odor generation. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, no impact would occur associated with the build alternative related to objectionable odors.

THRESHOLD 3.5-F	Generate greenhouse gas emissions, either directly or indirectly, that may have an adverse effect on the environment

Direct Impacts – Construction and Operations

Similar to the proposed project, construction GHG emissions for the build alternative include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during all construction phases.

Table 5-3 ists the annual GHG emissions that would be generated during construction of the build alternative. Up to 64,520 tons of CO_2e would be generated during the 6-year construction period for the build alternative with an at-grade concourse; this is equivalent to 58,520 MT of CO_2e. Amortized over a 30-year period, the approximate life of the project, the yearly contribution to GHG from the construction of the build alternative with an at-grade concourse would be 1,951 MT of CO_2e per year. Compared to the proposed project, the build alternative would generate up to 22,950 more tons of CO_2e during the 6-year construction period and would result in an annual contribution to GHG from construction of 694 more MT of CO_2e per year.

Activities associated with operation of the build alternative that could directly or indirectly contribute to the generation of GHG emissions are the same as the proposed project and would include: gas, electricity, and water use; solid waste disposal; motor vehicle use; and train emissions. The *Link US Air Quality/Climate Change and Health Risk Assessment* (Appendix G of this EIR), provides a description of how these activities would contribute to the generation of GHG emissions. Similar to the proposed project, the projected GHG emissions for the build alternative would be the summation of the individual sources identified above.

As identified in Table 5-11, the total annual GHG emissions from construction and operation of the build alternative would be approximately 11,925 MT of CO_2e per year, which exceeds the SCAQMD's 3,000 MT CO_2e interim threshold for commercial, residential, and mixed use projects. Compared to the proposed project and as stated above, the build alternative would result in an annual contribution to GHG from construction of 694 more MT of CO_2e per year.

Table 5-11. Greenhouse Gas Emissions – Build Alternative with At-Grade Passenger Concourse (2040)

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction Emissions Amortized over 30 Years	0.0	1,949.0	1,949.0	0.1	0.0	1,950.7
Operational Emissions						
Area Sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy Sources	0.0	4,272.0	4,272.0	0.11	0.023	4,281.7
Mobile Sources	0.0	843.2	843.2	0.03	0.0	844.0
Waste Sources	127.2	0.0	127.2	7.51	0.0	315.0
Water Usage	15.1	485.5	500.6	1.56	0.039	551.3
Total Operational Emissions	142.3	5,600.6	5,742.9	9.22	0.06	5,992.0
Rail Emissions						
No Project	0.0	6,168.2	6,168.2	0.0	0.0	6,168.2
Build Alternative	0.0	10,149.0	10,149.0	0.0	0.0	10,149.0
Net Increase	0.0	3,980.8	3,980.8	0.0	0.0	3,980.8
Total Operational Emissions	142.3	9,581.4	9,723.7	9.2	0.1	9,972.8
Total Emissions with Construction	142.3	11,530.4	11,672.7	9.3	0.1	11,923.5

Source: Appendix G of this EIR

Notes:
CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; N_2O=nitrous oxide

As discussed above, similar to the proposed project, this analysis for the build alternative evaluates the localized idling emissions associated with the regional/intercity rail operations within LAUS. Therefore, this analysis does not evaluate the system-wide change in rail emissions or the associated change in regional VMT.

In 2015, Metro emitted 457,400 MT of CO_2e from its operations. By removing private vehicles from the road, the agency also prevents GHG emissions from entering the atmosphere. During the same period, Metro saved approximately 464,493 MT of CO_2e from being emitted by displacing vehicle driving. As a result, Metro's net GHG emissions in 2015 were a net reduction of 7,093 MT of CO_2e. The addition of 5,992 MT of CO_2e from the operation of LAUS would increase Metro's operation emissions to approximately 463,400 MT. Therefore, Metro would continue to offset over 100 percent of its operating GHG emissions through regional VMT reductions.

Metrolink is currently developing the SCORE Program, which will upgrade the regional rail system to meet the current and future needs of the traveling public. By adding tracks and grade separations and upgrading signal systems across the entire Metrolink system, trains will operate more frequently and reliably, making regional travel by train easier and creating an even more appealing alternative to driving. Link US is the centerpiece of the SCORE Program, providing critical capacity increases that are required to realize over 26 percent of the significant reductions in Basin-wide VMT and GHG emissions that will result from the SCORE Program. Between 2026 and 2078, Link US's estimated contribution to the VMT and GHG reductions are 898 million miles and 13.5 million MT of CO_2e, respectively. The long term VMT and GHG reductions would offset the build alternative's annual GHG emissions of 11,925 MT of CO_2e.

Further, and from a regional perspective, by providing increased station capacity for regional/intercity rail, Metro rail and bus, and accommodation of the planned HSR system, similar to the proposed project, the build alternative would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. Therefore, similar to the proposed project, the build alternative is a key component to achieving the 2016 RTP/SCS GHG reduction goals for the SCAG region, as listed in the 2016 RTP/SCS, would achieve GHG emission reductions of up to 35 percent for Los Angeles County in 2040 and up to 24 percent for the SCAG region as a whole. In this context, the reductions in GHGs in 2040, as facilitated by the build alternative, would be considered a beneficial impact. The build alternative would result in impacts similar to the proposed project.

Although not required for the build alternative's climate change impacts, Mitigation Measures AQ-2 and AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) would reduce construction and operational GHG emissions. Table 5-12 identifies the mitigated GHG emissions for the build alternative. Similar to the proposed project, with the addition of the SCORE Program benefits, the GHG emissions for the build alternative would be reduced to less than zero.

Table 5-12. Cumulative Greenhouse Gas Emissions – Build Alternative with At-Grade Passenger Concourse (2040) - Mitigated

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction Emissions Amortized over 30 Years	0.0	1,395.1	1,395.1	0.1	0.0	1,396.9
Operational Emissions						
Area Sources	0.0	0.0	0.0	0.0	0.0	0.0
Energy Sources	0.0	4,272.0	4,272.0	0.11	0.023	4,281.7
Mobile Sources	0.0	843.2	843.2	0.03	0.0	844.0
Waste Sources	127.2	0.0	127.2	7.51	0.0	315.0
Water Usage	15.1	485.5	500.6	1.56	0.039	551.3

Table 5-12. Cumulative Greenhouse Gas Emissions – Build Alternative with At-Grade Passenger Concourse (2040) - Mitigated

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Total Operational Emissions	142.3	5,600.6	5,742.9	9.22	0.06	5,992.0
Rail Emissions						
No Project	0.0	6,168.2	6,168.2	0.0	0.0	6,168.2
Build Alternative	0.0	6,082.9	6,082.9	0.0	0.0	6,082.9
Net Increase	0.0	-85.3	-85.3	0.0	0.0	-85.3
Total Operational Emissions	142.3	5,515.3	5,657.6	9.2	0.1	5,906.7
Total Emissions with Construction	142.3	6,910.4	7,052.7	9.3	0.1	7,303.6

Source: Appendix G of this EIR

Notes:
CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; N_2O=nitrous oxide

Indirect Impacts

Similar to the proposed project, implementation of the build alternative would aid in the reduction of GHG emissions through regional VMT reductions. Therefore, no impact would occur.

THRESHOLD 3.5-G	Conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases

Direct Impacts – Construction and Operations

SB 375 calls on SCAG and other MPO's to integrate land use, housing, and transportation planning efforts to achieve the SB 375 regional GHG reduction targets, consistent with the transportation goals of AB 32. The adopted 2016 RTP/SCS multimodal strategy aims to reduce per capita VMT over the next 25 years, with regional passenger rail serving as a means to achieve VMT reductions. Similar to the proposed project, the build alternative would assist Metro and the State of California in meeting the greenhouse gas emission reduction targets as mandated under AB 32 and SB 375. Implementation of the build alternative would allow Metro to accommodate regional growth through increased and more frequent access to alternative modes of transit for local communities.

SCAQMD has adopted numeric mass emissions thresholds as a method to close the gap between emissions reductions from land-use driven sectors that would occur at the state level (including Pavley, low carbon fuel standard, and Renewable Portfolio Standard, among others) and the emission reductions necessary from land use development projects that have a lower carbon intensity within the region,

consistent with the goals of AB 32. Future year project-related emissions would be below SCAQMD numeric thresholds that were adopted to help achieve the reduction goals of AB 32. Thus, similar to the proposed project, the build alternative would not conflict with AB 32. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, implementation of the build alternative would aid in the reduction of GHG emissions through regional VMT reductions. No impact would occur.

Noise and Vibration

THRESHOLDS 3.6-A AND 3.6-C	A. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project C. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

Direct Impacts – Operations

2026 Condition

In the 2026 condition, as with the proposed project, regional/intercity rail service would operate at increased levels of service, as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR).

Noise levels would be the same as the proposed project. As shown in Table 8-1 of the *Link US Noise and Vibration Study* (Appendix H of this EIR), noise levels would range from 45 to 67 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep) and 57 to 67 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes). In 2026, moderate impacts would occur at 24 multifamily residences (all at William Mead Homes). Similar to the proposed project, no moderate or severe impacts would occur at the Mozaic Apartments, Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, Metro Senior Housing, One Santa Fe Apartments, or the daycare and park/athletic field near William Mead Homes.

As with the proposed project, impacts are considered less than significant. The FRA and FTA manuals include provisions for consideration of mitigation for moderate impacts. Similar to the proposed project, although implementation of Mitigation Measure NV-1 (described in Section 3.6, Noise and Vibration) is not required for the build alternative in the 2026 condition because impacts are considered less than significant. Metro may construct the sound wall in accordance with Mitigation Measure NV-1 earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train improvements that may occur as early as 2026.

Figure 5-20 depicts the noise contours associated with the moderate impact areas at William Mead Homes for the proposed project in the 2026 condition; the noise contours would be the same for the build alternative.

2031 Condition

In the 2031 condition, as with the proposed project, regional/intercity rail service would operate at increased levels as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR).

Noise levels are predicted to range from 47 to 75 dBA L_{dn} at Category 2 land uses and 63 to 73 dBA L_{eq} at Category 3 land uses. The build alternative would result in a greater number of moderate impacts than the proposed project (3 additional sensitive receptors at Mozaic Apartments East Building). As shown in Table 5-13, the build alternative would result in moderate impacts on 76 multifamily residences (40 William Mead Homes units and 36 Mozaic Apartment units). The same number of severe impacts would occur as the proposed project; including 40 multifamily residences (all William Mead Homes units) and the park/athletic field near William Mead Homes.

- For William Mead Homes, severe operational noise impacts in the 2031 condition would be significant. Similar to the proposed project, Mitigation Measure NV-1 would reduce operational noise impacts for the build alternative to a level less than significant.
- For Mozaic Apartments, although exterior noise levels at the Mozaic Apartments would result in moderate noise impact at 36 units, mitigation measures are not proposed for consideration for the same reasons as the proposed project described in Section 8.1.2 of the *Link US Noise and Vibration Study* (Appendix H of this EIR). Impacts are considered less than significant.
- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons as the proposed project described in in Section 8.1.2 of the *Link US Noise and Vibration Study* (Appendix H of this EIR). Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, similar to the proposed project, no moderate or severe impacts would occur for the build alternative. Impacts are considered less than significant.

Figure 5-21 depicts the noise contours associated with the moderate and severe noise impact areas at William Mead Homes for the build alternative in the 2031 condition.

Figure 5-20. Noise Impact Areas at William Mead Homes – Proposed Project and Build Alternative (2026 Condition)

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Table 5-13. Operational Noise Levels (2031 Condition)

Noise Sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure (dBA)	Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	59-75	40	40
	3	2	66	63-73	1	0
Metro Senior Housing	2	123	60	59	0	0
Los Angeles County Men's Central Jail	2	4,000a	73	62	0	0
Twin Towers Correctional Facility	2	9,500a	73	58	0	0
Mozaic Apartments East Building	2	176	67	53-66	0	36
Mozaic Apartments West Building	2	96	67	50-56	0	0
One Santa Fe Apartments/Studios	2	438	71	47-63	0	0
Project Total	2	14,748a	60–73	47-75	40	76
	3	2	66	63-73	1	0

Source: Appendix H of this EIR

Notes:

a Approximately 4,000 inmates are housed at the Los Angeles County Men's Central Jail and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore only interior noise levels are of concern. The prisons are built out of concrete and have thick windows to keep prisoners inside; therefore, exterior sound levels would be 20 dBA lower than those calculated at the exterior of each facility

dBA=A-weighted decibel; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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Figure 5-21. Noise Impact Areas at William Mead Homes – Build Alternative (2031 Condition)

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2040 Condition

In the 2040 condition, similar to the proposed project, additional regional/intercity rail train movements through LAUS are anticipated to occur, and the planned HSR system would be in operation as described in the *Link US Rail Planning Technical Memorandum* (Appendix B of this EIR).

Noise levels would be nearly the same predicted range at Category 2 land uses (48 to 75 dBA L_{dn}) and at Category 3 land uses (56 to 73 dBA L_{eq}) as the proposed project. As shown in Table 5-14, in the 2040 condition, the build alternative would result in moderate impacts on 66 multifamily residential units (24 William Mead Homes units and 42 Mozaic Apartment units). The build alternative would result in moderate impacts at 17 more noise-sensitive receptors (8 additional receptors at William Mead Homes and 9 additional receptors at Mozaic Apartments) than the proposed project. No severe impacts would occur at any multifamily residential units (compared to 24 receptors at William Mead Homes and 6 receptors at Mozaic Apartments for the proposed project).

At William Mead Homes, no severe impacts would occur as a result of implementing the build alternative because electrified HSR trains (that produce less noise than regional/intercity trains) would operate on the dedicated track alignment that is located closer to residential units than the proposed project. Although trains would operate closer to residential units at William Mead Homes, the HSR trains produce less noise, and for this reason, only moderate impacts would occur. At the rail yard near the Mozaic Apartments, the build alternative alignment is the same as the proposed project, and would include electrified HSR trains on tracks 3 through 6. For this reason, sound levels for the build alternative are only slightly lower at the Mozaic Apartment units nearest to LAUS (e.g., 67 dBA Ldn for the build alternative vs. 68 dBA Ldn for the proposed project) and as a result no severe impacts would occur. Concentrating higher numbers of regional/intercity rail trains on tracks further away (e.g., Tracks 7 through 12) in combination with electrified HSR trains does result in greater moderate impacts at the Mozaic Apartments for the build alternative compared to the proposed project. So while there are a greater total number of impacts at the Mozaic Apartments than the proposed project, sound level would be less impactful for the reasons stated above, and no severe impacts at the Mozaic Apartments for the build alternative would occur.

A severe impact would still occur at the park/athletic field near William Mead Homes, similar to the proposed project.

- For William Mead Homes, severe operational noise impacts on the park/athletic field at William Mead Homes would still occur in the 2040 condition under the build alternative. These impacts are considered significant. Similar to the proposed project, Mitigation Measure NV-1 (described in Section 3.6, Noise and Vibration) is proposed to reduce operational noise impacts for the build alternative to a level less than significant.
- For Mozaic Apartments, interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower for the same reasons as described for the proposed project. Impacts are considered less than significant.

- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described for the proposed project. Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, similar to the proposed project, no moderate or severe impacts were identified. Impacts are considered less than significant.

Figure 5-22 depicts the noise contours associated with moderate and severe noise impact areas at William Mead Homes for the build alternative in the 2040 condition.

Table 5-14. Operational Noise Levels (2040 Condition)

Noise Sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure (dBA)	Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	53-75	0	24
	3	2	66	56-73	1	0
Metro Senior Housing	2	123	60	54	0	0
Los Angeles County Men's Central Jail	2	4,000a	73	62	0	0
Twin Towers Correctional Facility	2	9,500a	73	59	0	0
Mozaic Apartments East Building	2	176	67	53-67	0	42
Mozaic Apartments West Building	2	96	67	50-56	0	0
One Santa Fe Apartments/Studios	2	438	71	48-64	0	0
Project Total	2	14,748a	60–73	48-75	0	66
	3	2	66	56-73	1	0

Notes:
dBA=A-weighted decibel

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Figure 5-22. Noise Impact Areas at William Mead Homes – Build Alternative (2040 Condition)

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Indirect Impacts

Similar to the proposed project, implementation of the build alternative could encourage residential and commercial infill development around LAUS that could indirectly result in the placement of new noise sources near noise-sensitive land uses; however, it is unknown if and when such land use development would occur. Additionally, new development would be required to comply with City of Los Angeles Municipal Code, Section 91.1207.14.2. In this context, as with the proposed project, impacts are considered less than significant.

THRESHOLD 3.6-B	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would result in temporary vibration from use of heavy equipment and machinery. Building demolition would also be required in limited circumstances along Commercial Street. The vibration levels from construction activities associated with the build alternative would be the same as the proposed project because the same types of construction equipment and methods are anticipated. Construction-based groundborne vibration and groundborne noise levels are summarized in Table 8-7 of the *Link US Noise and Vibration Study* (Appendix H of this EIR), and these levels would be the same for the build alternative.

Within approximately 50 feet of a pile driving activity, there is potential for vibration-related structural damage. The vibratory roller is not predicted to damage structures because the vibratory roller would not be used within 25 feet of a sensitive structure, a distance that eliminates concern of structural damage. Similar to the proposed project, from an annoyance perspective, impact pile driving associated with the build alternative would be characterized as a frequent source of vibration, as there would more than 70 pile strikes (i.e., events) per day. Mozaic Apartments are the nearest sensitive land uses and are within 300 feet from pile driving activities (if this construction technique is utilized). Additionally, use of the vibratory roller may occur near some sensitive land uses continuously over the course of several days and would be considered a frequent vibration source during construction. The vibratory roller would be used in closer proximity to sensitive areas, such as William Mead Homes (Category 2 land use). Per the FTA manual, the frequent impact threshold for Category 2 land uses is 72 VdB (FTA 2018).

Vibration from construction of the build alternative could be considered an annoyance, but would not cause damage to residential land uses situated within approximately 300 feet of an impact pile driver and 140 feet of the vibratory roller; however, pile driving activities would be restricted from occurring within 50 feet of a sensitive land use and therefore impacts from a damage perspective would occur. Nevertheless, because construction would occur within 300 feet of an impact driver and 140 feet of the vibratory roller from sensitive land uses, a severe impact would occur related to William Mead Homes and Mozaic Apartments, from an annoyance perspective. This is considered a significant impact. As with the proposed project, Mitigation Measure NV-2 (described in Section 3.6, Noise and Vibration) is proposed to reduce actual

construction-related vibration impacts, while Mitigation Measure NV-3 (described in Section 3.6, Noise and Vibration) is proposed to reduce the annoyances caused by construction-related vibration impacts under the build alternative. Upon implementation of proposed mitigation, impacts would be reduced to a level less than significant.

Direct Impacts – Operations

As with the proposed project, vibration sensitive land uses and structures near the build alternative would be limited to those Category 2 uses within 200 feet of the project alignment (i.e., the screening distance per FTA guidance). Category 2 uses within 200 feet of the alignment include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex.

2026 Condition

Similar to the proposed project, in the 2026 condition, although additional train movements would occur, there would be no changes to track speeds or the track alignment near William Mead Homes and, consequently, there would be no changes to vibration levels associated with the build alternative. In Segments 2 and 3 of the project study area, the track alignment would change slightly to accommodate Platform 4 modifications, a temporary run-through track ramp, and new run-through tracks crossing US-101. As a result, vibration levels would change slightly at the front row building of the Mozaic Apartment complex with regional/intercity rail trains operating at 10 miles per hour on Tracks 3 and 4.

2031 Condition

Under the build alternative, near William Mead Homes, regional/intercity rail trains would operate as close as 50 feet (as compared to 100 feet for the proposed project) from buildings at speeds of 20 miles per hour.

2040 Condition

Under the build alternative, near William Mead Homes, the planned HSR system would operate as close as 50 feet from the these buildings (compared to regional/intercity trains and HSR trains operating on shared tracks 100 feet from these buildings for the proposed project), and regional/intercity trains would operate as close as 115 feet away from the residential units at the Mozaic Apartment complex (compared to Gold Line trains as close as 40 feet, HSR trains as close as 75 feet, and regional/intercity rail trains as close as 185 feet for the proposed project).

Indirect Impacts

Similar to the proposed project, operation of the build alternative is unlikely to result in indirect impacts related to groundborne vibration that would result in vibration-related annoyance or physical damage to adjacent structures. Although land use changes (and intensification) are expected with or without the project, these changes would need to be approved by local jurisdictions and would be subject to environmental review. This would include any new development proposed around LAUS and along

Commercial Street that might otherwise be sensitive to operational sources of vibration. Impacts of the build alternative would be similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.6-D	A substantial temporary or periodic increase in ambient noise levels existing without the project

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would take place in phases over the course of approximately 6 years. Construction activities associated with the build alternative would result in temporary periods of relatively high noise levels. The noise levels from construction activities would be similar for the build alternative. Table 8-5 of the *Link US Noise and Vibration Study* (Appendix H of this EIR) provides estimates of peak day noise levels for each construction phase and project segment.

During construction, impacts would occur at Category 2 land uses at distances of up to approximately 250 feet under daytime (7:00 AM to 10:00 PM) impact criteria (i.e., 80 dBA L_{eq}) and approximately 300 feet under nighttime (10:00 PM to 7:00 AM) impact criteria (i.e., 70 dBA L_{eq}). It is anticipated that some construction work would take place during nighttime hours to utilize the efficiencies of working during off-peak times of the day and meet Metro's desired construction completion timeframe. These impacts would be similar under the build alternative.

Category 2 land uses (i.e., residential) exist within the respective daytime and nighttime impact distances (250 feet and 300 feet) and include William Mead Homes and Mozaic Apartments; therefore, the construction noise impact is considered a significant impact. As with the proposed project, Mitigation Measure NV-2 (described in Section 3.6, Noise and Vibration) is proposed to reduce construction-related noise impacts. Mitigation Measure NV-3 (described in Section 3.6, Noise and Vibration) also includes provisions to reduce the annoyances caused by construction-related noise impacts (in addition to vibration impacts). As with the proposed project, although construction-related noise impacts would be reduced through implementation of Mitigation Measures NV-2 and NV-3, impacts under the build alternative would remain significant and unavoidable.

Direct Impacts – Operations

An evaluation of potential increases in ambient noise levels associated with the build alternative is addressed under Threshold 3.6-A and 3.6-C above.

Indirect Impacts

Indirect impacts related to construction induced noise levels is addressed under Threshold 3.6-B, above.

Biological Resources

THRESHOLD 3.7-A	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS

Direct Impacts – Construction

Special-Status Bats

Similar to the proposed project, if construction occurs during the bat maternity season (May 1 through August 31), there is a potential for direct impacts (e.g., maternity site abandonment) and indirect impacts (e.g., noise, vibration, dust, night lighting, and human encroachment) to occur on western mastiff bats as a result of construction activities in the vicinity of bridges and on western yellow bats as a result of removal of naturally occurring or planted (ornamental) trees, including palm trees. These impacts would be considered significant. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure BIO-1 (described in Section 3.7, Biological Resources) is proposed to reduce impacts to a level less than significant.

Migratory Birds

Several migratory bird species were observed in the BSA, and suitable habitat that would support breeding migratory birds is present in the BSA. Similar to the proposed project, construction of the track and bridge improvements at Vignes Street and Cesar Chavez Avenue, safety improvements at the Main Street Bridge crossing of the Los Angeles River, and other construction activities may interfere with MBTA-covered species during the nesting season. Impacts on MBTA-covered species during the nesting season would be considered significant. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure BIO-2 (described in Section 3.7, Biological Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Special-Status Bats

Similar to the proposed project, operations of the build alternative would involve increased train traffic and periodic maintenance of Metro's ROW. Based on the limited availability of suitable habitat for special-status bat species in the project area, the corresponding impacts of operations on each species (i.e., increased risk of being struck by a train) are not anticipated to substantially reduce the regional population size of these species. The build alternative would result in an impact similar to the proposed project. .Impacts are considered less than significant.

Migratory Birds

Similar to the proposed project, due to the urban nature of the project site, any birds utilizing the site for breeding during operations of the build alternative are expected to be urban-adapted. Therefore, the

corresponding impacts of operations on these species (e.g., increased risk of being struck by a train) are not anticipated to substantially reduce their regional population sizes. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Special-Status Bats

Similar to the proposed project, operation of the build alternative would involve increased train traffic and periodic maintenance in the railroad ROW. Based on the limited availability of suitable habitat for special-status bat species to occur in the project area, the corresponding impacts of operations on each species (i.e., increased risk of a maternity roost being disturbed by maintenance activities or vibration, noise and dust resulting from increased train traffic) are not anticipated to substantially reduce the regional population size of these species. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Migratory Birds

Similar to the proposed project, temporary, indirect impacts that may affect MBTA-covered species during operations include increased noise, vibration, dust, night lighting, and human encroachment. However, due to the urban nature of the project site, any birds utilizing the site for breeding during project operations are expected to be urban-adapted. The corresponding impacts of operations on these species (e.g., increased risk of being struck by a train) are not anticipated to substantially reduce their regional population sizes. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.7-D	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would not obstruct local north-south wildlife movement that may be occurring via the Los Angeles River, or local east-west movements that may be occurring via the Arroyo Seco. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, operations of the build alternative would involve increased train traffic and periodic maintenance of Metro's ROW. However, operations would not obstruct local north-south wildlife movement that may be occurring via the Los Angeles River, or local east-west movements that may be occurring via the Arroyo Seco. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, construction and operations of the build alternative would occur over 0.8 mile away from Arroyo Seco; therefore, it is not expected to impact any potential wildlife movement occurring there. Noise and light from construction and operations could inhibit what limited wildlife movement occurs in the Los Angeles River. Given the unvegetated, concrete-lined nature of the river and the urban nature of the surroundings, any wildlife using the river is expected to be urban-adapted. The corresponding indirect impacts on these species from construction and operations are not anticipated to substantially reduce their regional population sizes or interfere substantially with their movement. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.7-E	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Direct Impacts – Construction

Similar to the proposed project, construction may require the removal or disturbance of one or more native tree species (western sycamore or other species observed during reconnaissance surveys) that are considered a protected tree under the City of Los Angeles Tree Ordinance. Removal of protected trees would conflict with local ordinances and policies protecting biological resources. This is considered a significant impact. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure BIO-3 (described in Section 3.7, Biological Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, operations would not require the removal of additional trees. However, future maintenance activities would be required throughout the duration of operations, and limited pruning or vegetation clearing would be required to keep the railroad corridor free of debris. Vegetation maintenance activities would be limited to the railroad ROW and would not extend into adjacent sensitive habitats. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, construction could result in indirect impacts affecting the root systems of adjacent native trees. Trenching, grading, soil compaction, and the placement of fill or impervious surfaces within the driplines of protected trees could lead to root damage ultimately resulting in death of the tree. This impact would be considered significant. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure BIO-3 (described in Section 3.7, Biological Resources) is proposed to reduce impacts to a level less than significant.

Hydrology and Water Quality

THRESHOLD 3.8-A	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

Direct Impacts – Construction

Similar to the proposed project, it is assumed that groundwater dewatering would be required during construction. These groundwater dewatering activities would be considered temporary and would only result in extraction of water from the upper aquifer, which is not currently used for potable uses. Hence, production rates or well levels would not be affected. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, operation of the build alternative would not require groundwater extraction for consumptive use and, therefore, would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would be constructed in accordance with standard engineering practices. Therefore, no indirect effect related to groundwater would occur.

THRESHOLD 3.8-B	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site

Direct Impacts – Construction

Similar to the proposed project, construction would require substantial amounts of grading and excavation in order to reconfigure existing drainage patterns and ensure that connections to existing drainage infrastructure are maintained and/or improved. Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, if not properly managed. This would be considered a significant impact. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure HWQ-1 (described in Section 3.8, Hydrology and Water Quality) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would result in alterations to the existing drainage patterns in the project study area that could result in localized flooding if not properly managed. This impact would be considered significant. Post construction BMPs would be required to attenuate flows prior to entering the drainage conveyance system. Because Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from the US-101, and other portions of the project study area, each agency is anticipated to implement different post-construction BMPs based on applicable regulations and each agency would retain partial responsibility for long-term maintenance of BMPs. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

Similar to the proposed project, no indirect impacts related to alterations in drainage patterns would occur because all project-related infrastructure would be constructed in accordance with standard engineering practices. Therefore, no impact would occur.

THRESHOLD 3.8-C	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

Direct Impacts – Construction

Similar to the proposed project, excavated soil would be exposed during construction and there would be increased potential for soil erosion. Excavated soils could be contaminated and the contractor would be required to follow protocol consistent with the *Link US Phase I Environmental Site Assessment* (HDR 2016a) or forthcoming Phase II Environmental Site Assessment for disposition of the soils. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Similar to the proposed project, construction of the safety improvements at the Main Street at-grade public crossing may require some minor grading, excavation, and other site preparation activities. If not properly managed, sediments, petroleum products, and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater into the Los Angeles River. This is considered a significant impact. The build alternative would result in an impact similar to the proposed project. As with the proposed project, Mitigation Measure HWQ-1 (described in Section 3.8, Hydrology and Water Quality) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would not result in an increase in impervious surface within Caltrans ROW and the runoff associated with the US-101 overhead viaduct would not exceed the

capacity of the tributary Caltrans system below (WKE 2016). However, as with the proposed project, the build alternative would increase impervious surfaces outside of Caltrans ROW by 3.5 acres, which is expected to result in an overall increase in storm runoff, thereby increasing the volume of flow and exceed the capacity of some on-site drainage systems. This is considered a significant impact. The build alternative would result in an impact similar to the proposed project. The build alternative would include capture and use BMPs, bioretention BMPs, and structural BMPs that would provide permanent stormwater treatment. In addition, the build alternative would incorporate the same post-construction BMPs into the design as the proposed project. Because Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from the US-101, and other portions of the project study area, each agency is anticipated to implement different post-construction BMPs based on applicable regulations and each agency would retain partial responsibility for long-term maintenance of BMPs. As with the proposed project, Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

Similar to the proposed project, components would be constructed in accordance with standard engineering practices. Therefore, no indirect effect related to exceeding the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff is anticipated. No impact would occur.

THRESHOLD 3.8-D	Expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

Direct Impacts – Construction

Similar to the proposed project, the study area for the build alternative is not located within a 100-year or 500-year floodplain; therefore, construction activities would not be subject to impacts associated with flooding. Although the build alternative would improve and modify drainage within the project study area to maintain existing drainage flow patterns and to accommodate for increased flow volumes, it would not increase or negatively impact the project study area's vulnerability to levee and dam failure. Therefore, the build alternative would not increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would not impact any floodplain areas or require the need to update the flood maps, given that it would occur outside of the flood zones. The proposed grand canopy, platforms, and other project facilities would be designed and constructed in accordance with standard engineering practices to ensure that the build alternative would not expose people or structures to a risk of loss, injury, or death involving flooding. The build alternative would result in an impact similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, components would be constructed in accordance with standard engineering practices. Therefore, no indirect impacts would occur.

THRESHOLD 3.8-E and 3.8-G	E. Violate any water quality standards or waste discharge requirements G. Otherwise substantially degrade water quality

Direct Impacts – Construction

Similar to the proposed project, construction of the various build alternative project components, including the safety improvements at the Main Street at-grade public crossing, could result in a significant impact on water quality and exceed water discharge requirements if runoff is not properly managed. In addition, although the project study area is relatively flat and the potential for soil erosion is considered to be low, stormwater runoff could result in short-term erosion within areas of exposed or stockpiled soils. Furthermore, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase runoff and erosion potential. If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation.

Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials, may also expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River. Similarly, tainted soil may be subject to erosion from storm events. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water.

Groundwater may also be encountered during construction, which may be contaminated. If not addressed properly, the extracted groundwater could substantially degrade surface water. This is considered a significant impact.

The build alternative would result in impacts on water quality similar to the proposed project. As with the proposed project, Mitigation Measures HWQ-1, HWQ-6, and HWQ-7 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, minor amounts of oil and grease would originate from train cars during operation of the build alternative, which could discharge oil, grease, and other chemical pollutants into existing drainage systems. This is considered a significant impact. Post construction BMPs are required to treat the runoff prior to discharge to the local storm drain system through capture and use, bioretention, and structural BMPs. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative could result in on- and off-site discharges that could indirectly affect downstream surface waters by increasing scour and/or sedimentation. This is considered a significant impact if not properly managed. During operations, the build alternative would result in acquisition of parcels with current manufacturing and industrial processes permitted by the IGP. These processes include treating stormwater discharges that include pollutants. Significant impacts would occur if these processes are not continued, because industrial stormwater may not be treated and could negatively impact the storm drain system. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure HWQ-8 (described in Section 3.8, Hydrology and Water Quality) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.8-F	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would occur over a multiyear period with multiple phases of construction. Over the course of construction, activities would extend over multiple rainy seasons; however, the construction schedule is anticipated to be phased to minimize the amount of work during the rainy season. During construction, it may be necessary for the contractor to re-route drainage around one or more construction areas, which, in turn, may concentrate runoff and/or direct it off-site, thereby resulting in substantial erosion on adjacent properties if not properly managed. This is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure HWQ-1 (described in Section 3.8, Hydrology and Water Quality) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would result in an increase of impervious surfaces in the project study area by 3.5 acres (non-Caltrans ROW). This could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that transports pollutants to receiving waters and may lead to downstream erosion and increases in suspended particles and sediment, resulting in increased turbidity. This is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measures HWQ-2, HWQ-3, HWQ-4, and HWQ-5 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant.

Indirect Impacts

Similar to the proposed project, components would be constructed in accordance with standard engineering practices. Therefore, no indirect effect related to erosion and sedimentation would occur.

Geology and Soils

THRESHOLD 3.9-A	Expose people or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving: ii. Strong seismic ground shaking iii. Seismic-related ground failure, including liquefaction

Direct Impacts – Construction

Similar to the proposed project, during construction, the project site would be subject to the same level of ground motion in the event of an earthquake. However, standard safety protocols in accordance with OSHA requirements would be implemented during construction to prevent risk of loss, injury, or death if seismic activity is encountered during construction. For this reason, construction of the build alternative would not exacerbate existing hazards related to seismic ground shaking. Therefore, impacts are considered less than significant.

Direct Impacts – Operations

Once operational, the probability that the project-related infrastructure would be subject to strong seismic shaking is considered high due to the proximity of known active faults in the region. Similar to the proposed project, the project-related infrastructure for the build alternative would be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods; therefore, project implementation would not exacerbate existing hazards posed by seismic shaking because an improved structural response to an earthquake is anticipated to occur when compared to existing conditions. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

In general, liquefaction is expected at the project site due to the soil conditions and depth of groundwater. Based on the preliminary liquefaction analysis performed for the project, liquefaction is expected between depths of about 20 and 30 feet bgs in Segment 1:Throat Segment and Segment 2: Concourse Segment of the project study area. Based on these considerations, this is considered a significant impact. The build alternative would result in impacts similar to the proposed project. Mitigation Measure GEO-1 (described in Section 3.9, Geology and Soils) is proposed to reduce liquefaction-related hazards to a level less than significant.

THRESHOLD 3.9-B	Result in substantial soil erosion or the loss of topsoil

Direct Impacts – Construction

Similar to the proposed project, the majority of the project study area for the build alternative consists of disturbed areas with existing rail tracks, developed properties, and the rail yard. The LAUS campus is located on disturbed area and fill. The potential for impacts related to soil erosion and the loss of topsoil is extremely low due to the urban developed nature of the project study area. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, during operation of the build alternative there would not be a substantial amount of exposed surfaces which could be subjected to accelerated soil erosion. The throat segment and run-through segment would still include exposed surfaces; however, the placement of ballast and other soil protection materials would provide stabilization to prevent erosion. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

No indirect impacts that would generate additional erosion or loss of topsoil are anticipated due to the disturbed nature of the project study area. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.9-C	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

Direct Impacts – Construction

Similar to the proposed project, the potential for subsidence due to groundwater pumping and/or extraction of oil in the surrounding area near LAUS associated with construction of the build alternative is considered low. In addition, the project site is not located within an area prone to landslides. Based on the consolidation test results, along with the moisture and density and soil types identified during the preliminary geotechnical investigation, hydrocollapse is not anticipated to have a substantial impact on project improvements. However, due to the presence of compressible layers within the upper 30 feet in Segment 2: Concourse Segment of the project study area, settlement, both long-term and immediate, is anticipated to occur for those improvements proposed to be founded on shallow foundations. In addition, liquefaction is expected due to the soil conditions and depth of groundwater. This is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure GEO-1 (described in Section 3.9, Geology and Soils) is proposed to reduce liquefaction-related hazards to a level less than significant.

Direct Impacts – Operations

As indicated above, settlement and liquefaction is anticipated to occur within the upper 30 feet of the soils in the project study area. In addition, the project infrastructure for the build alternative would be designed and constructed in accordance with standard engineering practices. After construction is complete, the likelihood that the build alternative would be affected either by subsidence due to the settlement of compressible layers and/or by liquefaction induced settlement is low. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, based upon the preliminary geotechnical evaluation, the potential for lateral spreading at the site for the build alternative is considered low. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.9-D	Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risk to life or property

Direct Impacts – Construction

Similar to the proposed project, expansion potential is considered to be low for the build alternative based on the material encountered within the top 5 feet and plasticity index test results during the preliminary geotechnical investigation. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, after construction is complete and the build alternative is operational, the likelihood that the build alternative would be affected by expansive soils is low. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, no indirect impacts related to expansive soils would occur for the build alternative.

Hazards and Hazardous Materials

THRESHOLD 3.10-A	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Direct Impacts – Construction

Transport, Use, and Disposal of Hazardous Materials

Similar to the proposed project, the use of hazardous materials and substances would be required during construction and hazardous wastes would be generated during operation of construction equipment. The use of these materials, including their routine transport and disposal, carries the potential for an accidental release into the local environment, which could pose a hazard to construction employees, the public, and the environment depending on the magnitude of the spill and relative hazard of the material released. Although typical construction management practices limit and often eliminate the risk of such accidental releases, the extent and duration of project construction presents a possible risk to the environment through the routine transport of hazardous materials.

Transport, Use, and Disposal of Contaminated Soil and Groundwater

Similar to the proposed project, contaminated soil and groundwater are expected to be encountered during soil excavations and dewatering activities, which would require specialized handling, treatment, and eventual off-site transport. The build alternative would require substantially more excavation compared to the proposed project. Therefore, the build alternative would result in a greater potential for encountering contaminated soils and/or groundwater during soil excavations.

Potential hazards generated by the routine transport, use, and disposal of hazardous materials, contaminated soils, and/or contaminated groundwater during construction is considered a significant impact, if not adequately managed. The build alternative would result in greater impacts than the proposed project due to the greater amount of excavation. However, as with the proposed project, Mitigation Measure HAZ-1 (described in Section 3.10, Hazards and Hazardous Materials) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would involve an increase in the number of trains arriving and departing LAUS, although operational activities and practices involving routine transport, use, and storage of potentially hazardous materials would remain similar to existing conditions. Future operations at LAUS would involve routine transport of hazardous materials and wastes, such as gasoline, brake fluids, and coolants, although heavy maintenance activities would continue off-site at existing maintenance facilities, such as Metrolink's CMF or Taylor Facility, located north of LAUS and the Amtrak maintenance facility located south of LAUS. These facilities already in operation would continue to provide for safe storage, containment, and disposal of chemicals and hazardous materials during operations,

including waste materials. The build alternative would result in impacts similar to the proposed project. Based on the existing local regulatory framework, impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, implementation of the build alternative would facilitate an increase in the number of train movements beginning as early as 2026 and the initiation of HSR service as early as 2033. Considering LAUS is limited to passenger operations, the potential for increased freight movements and increased hazardous materials transport is beyond Metro's authority and subject to private railway carriers. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.10-B	Create a hazard to the public or the environment through reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment

Direct Impacts – Construction

Recognized Environmental Condition Sites

Similar to the proposed project, the close proximity of the build alternative to existing RECs could result in potential exposure to contaminated soils and/or groundwater or migration of contaminants (e.g., by groundwater). The build alternative includes two new lead tracks and a new retaining wall through the throat segment that would extend outside of the existing railroad ROW, encroaching into a portion of the William Mead Homes property. Compared to the proposed project, the build alternative would have a greater potential to encounter contaminated soil and/or groundwater associated with the William Mead Homes site (Map Code 31). Therefore, the build alternative would result in greater impacts than the proposed project. This is considered a significant impact.

Soil Vapor Migration

Construction of subterranean structures for the build alternative could encounter soils contaminated with petroleum and petroleum products, which could release vapor encroachment conditions during excavations or tunneling. The build alternative would require substantially more excavation compared to the proposed project. Therefore, the build alternative would result in greater potential for encountering soils contaminated with petroleum and petroleum products during soil excavations. This is considered a significant impact.

Asbestos and Lead

Similar to the proposed project, demolition of structures containing ACMs and LBPs could cause their release into the environment. The build alternative would result in impacts similar to the proposed project because the same amount of buildings would be demolished. The accidental release of ACMs or lead into the environment is considered a significant impact.

As described above, an accidental release of hazardous materials could pose a hazard both to construction employees, the public, and the environment depending on the magnitude and relative hazard of the material released. Although typical construction management practices limit the potential for such accidental releases, these practices do not eliminate their risk. The build alternative would result in greater impacts than the proposed project. However, as with the proposed project, Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10, Hazards and Hazardous Materials) are proposed to reduce impacts related to the release of hazardous materials to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, future operations at LAUS would involve the use of hazardous materials and wastes, such as gasoline, brake fluids, and coolants that could be subject to accidental releases. The handling of such materials would be subject to federal (40 CFR 239-282), state (22 CCR 4.5), and local health and safety requirements (those specified by Metro, railroad operators, or property owners on a case-by-case basis). In general, they require that these materials not be released to the environment or disposed of as general refuse. Collection in proper containers and disposal at approved facilities are required.

Metro would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. These permits would require preparation of a HMBP, per California's Health and Safety Code, that would include provisions for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials. The build alternative would result in impacts similar to the proposed project. Given that the operations would be similar to existing conditions and the HMBP would be subject to approval by the applicable regulatory agency, impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, implementation of the build alternative would facilitate an increase in the number of regional/intercity train movements as early as 2026 and would accommodate future HSR service. Considering LAUS is limited to passenger operations, the potential for additional freight movements and increased hazardous materials release is beyond the scope of Metro's authority. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.10-C	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

Direct Impacts – Construction

Similar to the proposed project, during construction of the build alternative there would be use of commercially available hazardous materials, such as gasoline, brake fluids, coolants, and paints, within 0.25 mile of Ann Street Elementary School and Felicitas and Gonzalo Mendez Senior High School. Standard

equipment maintenance and good housekeeping practices during construction would minimize the risk of any release; however, if any release of these substances did occur, releases are anticipated to be localized and unlikely to pose a risk to these two educational institutions. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

In addition, demolition of existing structures and the existing railroad track infrastructure would require the operation of multiple construction vehicles within the build alternative footprint over the duration of construction. Based on the, the DPM emissions associated with the short-term construction activities would not result in an increased cancer risk or exceed the SCAQMD's 10 in a million threshold at any school within 0.25 mile of the build alternative footprint. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

An indicator of the project's regional operational impact is the net influence on emissions in the project study area and the region, relative to the emissions for the same year under the no project scenario. Similar to the proposed project, rail emissions were estimated for the project based on daily train movements, fuel consumption, travel distance, idling time, and DPM emission factor. Each of these factors is discussed in detail in the *Link US Air Quality and Global Climate Change Technical Report* (Appendix G of this EIR), including the 2040 peak cancer risks within the project study area. The cancer risks at the residential land uses were calculated using a 30-year exposure while the school and office uses were calculated using 9- and 25-year exposures, respectively. The project-related increase in cancer risk would exceed the SCAQMD's threshold of 10 in 1 million. This is considered a significant impact. The build alternative would result in similar impacts as the proposed project. However, as with the proposed project, Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) is proposed to reduce impacts related to health risks to a level less than significant.

Indirect Impacts

Similar to the proposed project, construction of the build alternative would involve the transport and disposal of soil or other media contaminated with hazardous materials. This could be an indirect impact through the accidental release of these hazardous materials to nearby schools. The accidental release of ACMs or lead into the environment would also represent a risk. The build alternative would require substantially more excavation compared to the proposed project and would, therefore result in greater impacts than the proposed project. Although compliance with existing laws and regulations regarding transport and disposal of hazardous materials would minimize potential risks, this is considered a significant impact. However, as with the proposed project, Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10, Hazards and Hazardous Materials) would reduce impacts to a level less than significant.

THRESHOLD 3.10-D	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would create an adverse hazard to the public or the environment

Direct Impacts – Construction

Recognized Environmental Condition Sites

Similar to the proposed project, 35 REC sites (14 RECs, 16 HRECs, and 5 CRECs) have been identified with a Moderate to High risk ranking because they have the potential to affect the environment as a result of excavation activities on acquired parcels where project-related construction activities would occur. Some of the parcels identified in Table 3.10-2 would either be acquired or used for temporary construction activities and staging where no ground disturbance would occur. The close proximity of these existing RECs to project-related construction activities would carry the potential for encountering contaminated soil and/or groundwater. Construction activities could also cause the migration of contaminants through changes in groundwater flow. This is considered a significant impact. The build alternative includes two new lead tracks and a new retaining wall through the throat segment that would extend outside of the existing railroad ROW, encroaching into a portion of the William Mead Homes property. Compared to the proposed project, the build alternative would result in a greater potential to encounter contaminated soil and/or groundwater associated with the William Mead Homes site (Map Code 31). Therefore, the build alternative would result in greater impacts than the proposed project. As with the proposed project, Mitigation Measure HAZ-2 (described in Section 3.10, Hazards and Hazardous Materials) is proposed to reduce impacts to a level less than significant.

Land Use Covenants

Similar to the proposed project, the build alternative (e.g., railroad ROW) would not conflict with land use restrictions of the seven sites identified in the *Link US Phase I Environmental Site Assessment* (Appendix M of this EIR); however, these sites have deed restrictions that include soil management requirements. The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measures HAZ-2 and HAZ-3 (described in Section 3.10, Hazards and Hazardous Materials) are proposed to reduce impacts to a level less than significant.

Based on the uncertainties regarding the level of clean-up or remediation on the land use restricted sites, the potential to encounter undocumented sources of contamination exists and a significant impact could occur. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measures HAZ-2 through HAZ-6 (described in Section 3.10, Hazards and Hazardous Materials) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, after construction is complete and the build alternative is operational, the identified REC sites would not be disturbed and, therefore, would not require remediation or coordination

with the governing agency. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, prior to construction, any REC sites located within or adjacent to the project study area identified as a Moderate or High risk would be further analyzed in a Phase II ESA (Mitigation Measure HAZ-2). However, the REC sites adjacent to or in the vicinity of the build alternative could be indirectly affected during construction. In the event hazardous materials migrate into the project study area while construction is occurring, there would be an indirect impact resulting from construction. The build alternative would result in impacts similar to the proposed project. Although compliance with federal, state, and local regulations would reduce these indirect impacts, this is considered a significant impact. As with the proposed project, Mitigation Measure HAZ-6 (described in Section 3.10, Hazards and Hazardous Materials) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.10-E	Impair implementation of an adopted emergency response plan or emergency evacuation plan

Direct Impacts – Construction

The build alternative would impact the same roadways and designated disaster routes as the proposed project. Construction activities in the areas of these streets, especially US-101, could interfere with emergency response and access. As discussed in the *Link US Traffic Impact Assessment* (Appendix E of this EIR), construction activities would generate additional construction traffic on US-101 and result in temporary closure of portions of US-101. US-101 would be closed temporarily during the night (10:00 PM to 6:00 AM) in one direction at a time during construction of the bridge superstructure. These night closures are expected to last up to 20-consecutive days. The southbound ramps at Commercial Street would also be partially or fully restricted for extended periods during construction of the US-101 viaduct over the existing on- and off ramps. The build alternative would result in impacts similar to the proposed project. Any disruption to an evacuation route is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, after construction is complete and the build alternative is operational, no changes would be made to the identified evacuation routes and minimal project-related increased delays are expected at intersections within the traffic study area. Internal roadway reconfiguration and associated modifications to fire lanes and access roads would not significantly affect emergency access, primarily because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained from Patsaouras Plaza, which would provide emergency and fire lane access to the eastern side of the station. All modifications made would be coordinated and approved by the Fire Marshal to verify the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the evacuation routes as identified by the City.

The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would operate in accordance with applicable agency requirements for passenger rail operations. Impacts are considered less than significant.

Utilities/Service Systems

THRESHOLDS 3.11-A AND 3.11-E	A. Exceed wastewater treatment requirements of the applicable RWQCB E. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Direct Impacts – Construction

Similar to the proposed project, construction activities associated with the build alternative would not result in new substantial discharges of wastewater to the City's sanitary sewer collection system. However, if groundwater dewatering is required, discharge to the City's sanitary sewer collection system may be the only option for disposal. As provided in the *Link US Water Quality Assessment Report* (Appendix J of this EIR), shallow groundwater in the project study area is likely impacted by one or more sources of contaminations associated with legacy land uses and associated pollutants. As a result, pre-treatment of any dewatering effluent may be required prior to discharging into the City's sanitary sewer collection system.

Similar to the proposed project, compliance of with the Dewatering Permit would minimize the potential for any discharges that could otherwise exceed the City's existing wastewater treatment requirements. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, the at-grade passenger concourse would include new transit-serving retail amenities and office/commercial space. This level of development is anticipated within local planning documents and included in the maximum permitted floor area within the ADSP (for LAUS). Likewise, the wastewater generated by the build alternative in the full build-out condition would be of domestic quality and, if required, would be subject to pre-treatment requirements (e.g., fats, oils, and grease) per the City's Industrial Waste Control Ordinance. Furthermore, the Hyperion Treatment Plant is the closest treatment plant to the build alternative. It is currently operating at an average of 275 mgd and is designed to treat 450 mgd in dry months and 800 mgd in peak wet weather flows. Therefore, adequate capacity exists in this facility to accommodate the build alternative's increase in wastewater generation. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

No indirect impacts related to wastewater would occur with implementation of the build alternative.

THRESHOLD 3.11-B	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts

Direct Impacts – Construction

Similar to the proposed project, during construction of each phase of the build alternative water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. The build alternative would continue to be serviced by existing LADWP water lines. Construction of the build alternative would require the use of locally-available water supplies, which are distributed by LADWP. The build alternative's water demand would be short-term and temporary and would not require the construction of new water facilities or expansion of existing facilities. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Similar to the proposed project, as provided in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR), construction of the build alternative, including utility replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources. Some of these resources could be historically significant. This is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative would continue to be serviced by existing water and wastewater facilities. The build alternative would result in an increased demand for water during operations associated with fire flow and domestic flow demands within the new passenger concourse and on the platforms. However, based on preliminary coordination with utility providers, there is sufficient water capacity to serve the additional water needs of the project. Therefore, no new water facilities or expansion of existing facilities would be needed. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

The demand for wastewater services would also increase during operations. However, based on preliminary coordination with utility providers, the Hyperion Treatment Plant has adequate capacity to treat the project's wastewater. Therefore, the build alternative would not require construction of any new wastewater treatment facilities or expansion of existing facilities. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

New development around LAUS in the future could indirectly impact water and sanitary sewer facilities in the project study area. However, similar to the proposed project, new development would be subject to the City's permitting and entitlement processes, as applicable, and would include coordination with LASAN, Los Angeles BOE, and LADWP. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.11-C	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts

Direct Impacts – Construction

Based on hydraulic modeling as summarized in the *Link US Preliminary Low Impact Development Report* (Appendix K of this EIR), no change in the current pipeline sizing is required. Similar to the proposed project, reconfiguration or realignment of the storm drains would be conducted in coordination with the Los Angeles BOE. Where possible, existing storm drains would be protected-in-place through the use of casings, concrete blankets, or other industry approved structural protection methods. A concrete slab is proposed to protect the Los Angeles County storm drain system near Mission Tower. All work would occur within an urbanized area.

As provided in the *Link US Cultural Resources Impact Assessment Report* (Appendix N of this EIR), similar to the proposed project, construction of the build alternative, including storm drain replacements and/or relocations, would have the potential to encounter documented and undocumented cultural resources. Some of these resources could be historically significant. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the proposed drainage system for the build alternative would be designed in accordance with the City of Los Angeles' Storm Drainage Design standards, and all other applicable standards for post-construction BMPs to avoid potential for significant impacts on the environment. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

New development around LAUS in the future could indirectly impact storm drain facilities in the project study area. However, similar to the proposed project, new development would be subject to the City's permitting and entitlement processes, as applicable, and would include coordination with the LABOE. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLD 3.11-D	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would require the use of locally-available water supplies, which are distributed throughout the City by LADWP. During construction of each phase, water would be required for various activities such as controlling dust, compacting soil, and mixing concrete. In the absence of recycled water supplies, potable water would be required for construction purposes. The average water use during construction is estimated at 63,000 gallons per day or 70.5 AFY (HDR 2016c). Based on this anticipated water use and in the context of the supplies available to LADWP between 2018 and 2024 (up to 156,800 AFY), sufficient water supplies are expected to be available for construction of the build alternative. Additionally, Metro would implement its General Management Water Use and Conservation Policy that outlines guidance for potable water during construction. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, throughout operation of the build alternative potable water would be provided by LADWP, which supplies LAUS' existing water demands. With the completion of the new passenger concourse in the full build-out condition, new plumbing fixtures would include lavatories, drinking fountains, break room sinks, and service sinks. The total water demand from these uses is estimated to be up to 310 gpm or approximately 500 AFY in 2040 (HDR 2016d). Train washing operations would be conducted off-site at a separate facility similar to existing conditions, and this type of water use is not included in this estimate.

To support the policies listed in Metro's Water Action Plan, the planning, design, and construction of the build alternative would address minimum requirements for water conservation. Based on the projected water demand of 500 AFY in 2040, this total demand represents a small fraction of the total supplies available. Additionally, the build alternative is consistent with existing and planned land uses and would not alter projects contained in LADWP's UWMP (LADWP 2015). Likewise, the build alternative would not produce demands that exceed the thresholds in SB 610 for a water supply assessment. For these reasons, the build alternative would have sufficient water supplies available from existing LADWP entitlements and resources, and no new or expanded entitlements would be required. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Water demand from new development that may occur within the project study area (separate from the project) would be subject to the requirements of SB 610 and considered at the time separate and individual entitlement applications are filed in the future. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLDS 3.11-F AND 3.11-G	F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs G. Comply with federal, state, and local statutes and regulations related to solid waste

Direct Impacts – Construction

Similar to the proposed project, construction of the build alternative would generate construction waste from the removal of existing infrastructure, (e.g., roadways, trackwork, concrete, etc.), including concrete, brick, asphalt, railway basalt, and other construction waste. As a standard construction practice, the contractor would be required to segregate these materials prior to disposal at a certified recycling facility where materials would be properly recycled or reused, where appropriate. Additionally, the contractor would be required to adhere to federal, state, and local regulations for solid waste disposal, including those identified in the City's SWIRP.

During construction, the project contractor would be required to comply with SB 1374 and the Los Angeles C&D Waste Recycling Ordinance regarding concrete, asphalt, scrap metal, wood, and gypsum/wallboard. The Los Angeles C&D Waste Recycling Ordinance requires that all mixed C&D waste generated within the city limits be taken to City certified C&D waste processors (LASAN 2018). The build alternative would be constructed in compliance with these regulations, and diversion strategies are expected to be implemented by the contractor during each phase of the build alternative. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, in the full build-out condition the build alternative would involve the construction of a new passenger concourse that would increase solid waste generation above existing conditions at LAUS, which is located in LASAN's North Central watershed. The North Central watershed generates 787,000 tons of solid waste, which is transported to the Central Los Angeles Recycling and Transfer Station, Scholl Canyon Landfill, and Burbank Landfill Site No. 3 for recycling and/or disposal (CalRecycle 2016). Los Angeles County also uses an out-of-county disposal program that exports solid waste to surrounding counties where solid waste demands are lower. The build alternative would result in impacts similar to the proposed project. Given the negligible increase in solid waste attributable to the build alternative, the available landfill capacity, and the existing out-of-county disposal program, this impact is considered less than significant.

Similar to the proposed project, all solid waste generated by the build alternative would be recycled or disposed of in compliance with applicable federal, state, and local statutes and regulations. AB 939 mandates the reduction of waste disposal through integrated facility and program planning, and AB 341 mandates an increase in diversion rates to 75 percent by the year 2020. The City's SWIRP further increases the diversion rate goal beyond the AB 341 diversion rate to 90 percent by the year 2025. Given that the diversion requirements under AB 341 and SWIRP would apply to waste generated from the build

alternative because it is derived from within the City of Los Angeles, the targeted diversion rates would maintain compliance with federal, state, and local statutes and regulations related to solid waste. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, implementation of the build alternative is expected to increase the amount of patrons utilizing LAUS; however, the amount of solid waste generated from additional patronage would be considered negligible compared to existing conditions. New development in the future would also be subject to federal, state, and local statutes and regulations related to solid waste. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

THRESHOLDS 3.11-H AND 3.11-I	H. Require or result in the construction of new gas or electric facilities or expansion of existing facilities I. Have insufficient gas or electricity supplies available to serve the project

Direct Impacts – Construction

Similar to the proposed project, based upon preliminary coordination with utility providers, sufficient supplies of gas and electricity are available to construct the build alternative. Therefore, new facilities and expansion of existing facilities would not be required for construction.

In addition, existing utility services would be maintained throughout construction of the build alternative by relocating services into access roads and utility tunnels to protect the facility during construction and provide for future maintenance. Similar to the proposed project, modifications to utility infrastructure would be limited to relocations; no additional lines or substations would be required for construction.

Any disruptions of utility service would be temporary, and efforts would be made to avoid or minimize potential disruption of service. Similar to the proposed project, coordination with LADWP would be required during final engineering design to avoid potential conflicts. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative is anticipated to increase the square footage of LAUS by up to 600,000 square feet. Energy for the retail, restaurant, support, and passenger concourse areas would be required for the lighting, receptacles, heat and air conditioning, and miscellaneous power. Based on preliminary estimates, the project in the full build-out condition would require a maximum of 11,830 kilovolt (or 11.83 MW) of energy (HDR 2016e). Preliminary coordination with utility providers indicates that current supplies are sufficient for the project in the full build-out condition. Operations-related energy use would not require or result in the construction of new gas or electric facilities

or the expansion of existing facilities. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would not have any indirect impacts related to energy.

THRESHOLD 3.11-J	J. Generate unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency

Direct Impacts – Construction

The build alternative would use the same forms of energy during construction as the proposed project. Fuel energy use would be temporary and would not represent a significant, permanent, or unnecessary commitment to the use of energy, including non-renewable sources. To minimize energy consumption, the construction contractor would implement standard BMPs in accordance with Metro's Green Construction Policy. Starting in 2018, Metro's Green Construction Policy requires the use of bulk renewable diesel fuel on its construction projects. Renewable diesel is a petroleum-free substitute fuel for diesel engines. It is produced from 100 percent renewable and sustainable materials and is more efficient and cleaner burning than conventional petroleum (Metro 2018a). Metro's Green Construction Policy also requires the following BMPs (Metro 2018b):

- Maintain equipment according to manufacturers' specifications
- Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of 5 minutes when not in use
- Use electrical power in lieu of diesel power, where available

Similar to the proposed project, standard BMPs would be implemented by the contractor so that non-renewable energy would not be consumed in a wasteful, inefficient, or unnecessary manner.

Energy sources for construction vehicles and equipment are not in short supply and use of construction equipment would not have a significant impact on the availability of these resources. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Direct Impacts – Operations

Similar to the proposed project, energy consumed at the new passenger concourse would be reduced through the use of sustainable design features and implementation of a variety of measures designed to reduce energy consumption. In addition, the build alternative would be designed to comply with applicable mandatory provisions of the 2016 CALGreen Code, in accordance with the City of Los Angeles Green Building Code. The new passenger concourse would be designed to comply with the Metro Energy and Sustainability policy and achieve at least a LEED® Silver rating.

Proposed design features such as reflective roofing and skylights would assist in the reduction of energy demands. The sustainability framework of the new passenger concourse targets energy efficiency, water conservation, well-being, and site planning, ecology, and resource management. Given the sustainability elements that are planned to be incorporated into the build alternative, a negligible impact on energy resources is expected. Operations-related energy use would not require or result in the construction of new gas or electric facilities or expansion of existing facilities. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial impact on energy resources.

The improvement in rail/transit service and connectivity between the different modes of transportation would encourage more individuals to use public transit services, directly reducing the number of personal vehicles on the roads. As discussed in the *Link US Traffic Impact Analysis* (Appendix E of this EIR), and the *Link US Air Quality/Climate Change and Health Impact Assessment* (Appendix G of this EIR), project-related capacity enhancements would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel, thereby reducing the VMT in the area. This would reduce gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Cultural Resources

THRESHOLD 3.12-A	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5

As with the proposed project, the build alternative would result in no impact on the following five bridges that are classified as historical resources as defined in §15064.5 and located within the AII. No impact would occur because no physical alteration to any of the bridges would occur with implementation of the build alternative.

- Cesar Chavez Avenue Viaduct over the Los Angeles River
- First Street Viaduct over the Los Angeles River
- Fourth Street Viaduct over the Los Angeles River
- Seventh Street Viaduct over the Los Angeles River
- Olympic Boulevard Viaduct over the Los Angeles River

While some track work would occur where the railroad tracks pass under the bridge structures, and the tracks, ties, and ballast constitute "physical features within the setting" of the bridges, they have been subject to regular replacement over the years as part of routine maintenance, and do not comprise historic

material that contributes to the significance of the bridges themselves. Therefore, there would be no impact on these historical resources.

Additionally, the build alternative would result in no impact on the Thomas R. Barabee Store and Warehouse. No impact would occur to this historical resource because no physical alteration would occur with implementation of the build alternative.

The following six resources are classified as historical resources which the build alternative may cause a substantial adverse change in the significance:

- LAUS and Vignes Street Undercrossing (two separate but related historical resources, as explained in the Historical Resource Evaluation Report)
- William Mead Homes
- Friedman Bag Company—Textile Division Building
- North Main Street Bridge (Bridge #53C 1010)
- Archaeological Site CA-LAN-1575/H

Direct Impacts – Construction

Similar to the proposed project, the build alternative has the potential to result in direct impacts on the following historical resources: LAUS and the Vignes Street Undercrossing, William Mead Homes, Friedman Bag Company—Textile Division Building, the North Main Street Bridge, and Archaeological Site CA-LAN-1575/H.

Los Angeles Union Station and Vignes Street Undercrossing

Similar to the proposed project, in the interim condition, a run-through track structure would be constructed that would result in the demolition of Platform 4 and the associated butterfly shed canopy.

In the full build-out condition, the rail yard would be elevated up to approximately 15 feet above the existing elevation to accommodate the Caltrans vertical clearance requirements for new run-through tracks over both the El Monte Busway and US-101. The at-grade passenger concourse would also be constructed in the full build-out condition. A portion of the characteristics that qualify LAUS for listing in the NRHP/CRHR would be destroyed or substantially altered; therefore, the build alternative would have a substantial adverse change in significance on the same character-defining features as the proposed project, as follows:

- Platforms – The 21-foot-wide concrete platforms would be demolished, and new, longer, wider (29-foot-wide) concrete platforms would be constructed to enhance safety; allow space for proposed elevators, stairs, and escalators; and accommodate building code requirements for loading (ramps and railings would not be replaced). The proposed platforms would be lengthened and elevated up to approximately 15 feet above their present elevation. The build alternative would result in impacts similar to the proposed project.

- Butterfly Shed Canopies – The butterfly shed canopies above the remaining existing platforms would be demolished because they are too narrow, are not long enough to perform their historic function on the widened and lengthened platforms, and do not take into account the design requirements of multiple operating agencies, each with their own unique needs and train types and each with different design criteria for proximity and clearance of canopies. The grand canopy over the rail yard would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS. The build alternative would result in impacts similar to the proposed project.
- Pedestrian Passageway (Tunnel), Ramps, Platform Railings, Solid Balustrades – The pedestrian passageway, passenger ramps, platform railings, and solid balustrades would be demolished to make space for the construction of the at-grade passenger concourse with new expanded passageway. The concourse would include multiple egress routes, with public areas integrated into the design. For the build alternative, the pedestrian passageway would be demolished to accommodate the at-grade passenger concourse-related improvements. Similar to the proposed project, new elevators, escalators, stairs, and ramps would be constructed for the build alternative to achieve compliance with CBC egress and ADA standards. As with the proposed project, the build alternative would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS. The build alternative would result in impacts similar to the proposed project.
- Terminal Tower – The Terminal Tower would be moved and either reoriented at grade or raised vertically, depending on final design. The build alternative would result in impacts similar to the proposed project.
- Car Supply Building – The Car Supply Building and retaining walls would be demolished to raise the rail yard by up to 15 feet. The build alternative would result in impacts similar to the proposed project.
- Undercrossings – The Cesar Chavez Avenue and Vignes Street Undercrossings would be demolished and replaced with new bridges to accommodate the elevated rail yard and the egress requirements from the platforms. The build alternative would result in impacts similar to the proposed project.
- South Retaining Wall – The proposed run-through track structure over the El Monte Busway and US-101 would be designed to span above the existing south retaining wall, which would be largely obscured from public view, but may still be altered (likely with the run-through tracks structure crossing through the wall), would be reconstructed in-kind, where feasible, and visible from US-101. The build alternative would result in impacts similar to the proposed project.

Similar to the proposed project, as described above, the portions of the LAUS property that would be demolished under the build alternative would include the following contributing features: platforms, butterfly shed canopies, ramps, railings, pedestrian passageway, solid balustrades off the passageway to the platforms, Cesar Chavez Avenue Undercrossing, and Car Supply Building. Further, the Vignes Street Undercrossing would also be demolished. The physical removal of these features would be a substantial change in significance of the historical resource, even though LAUS would retain enough integrity to remain

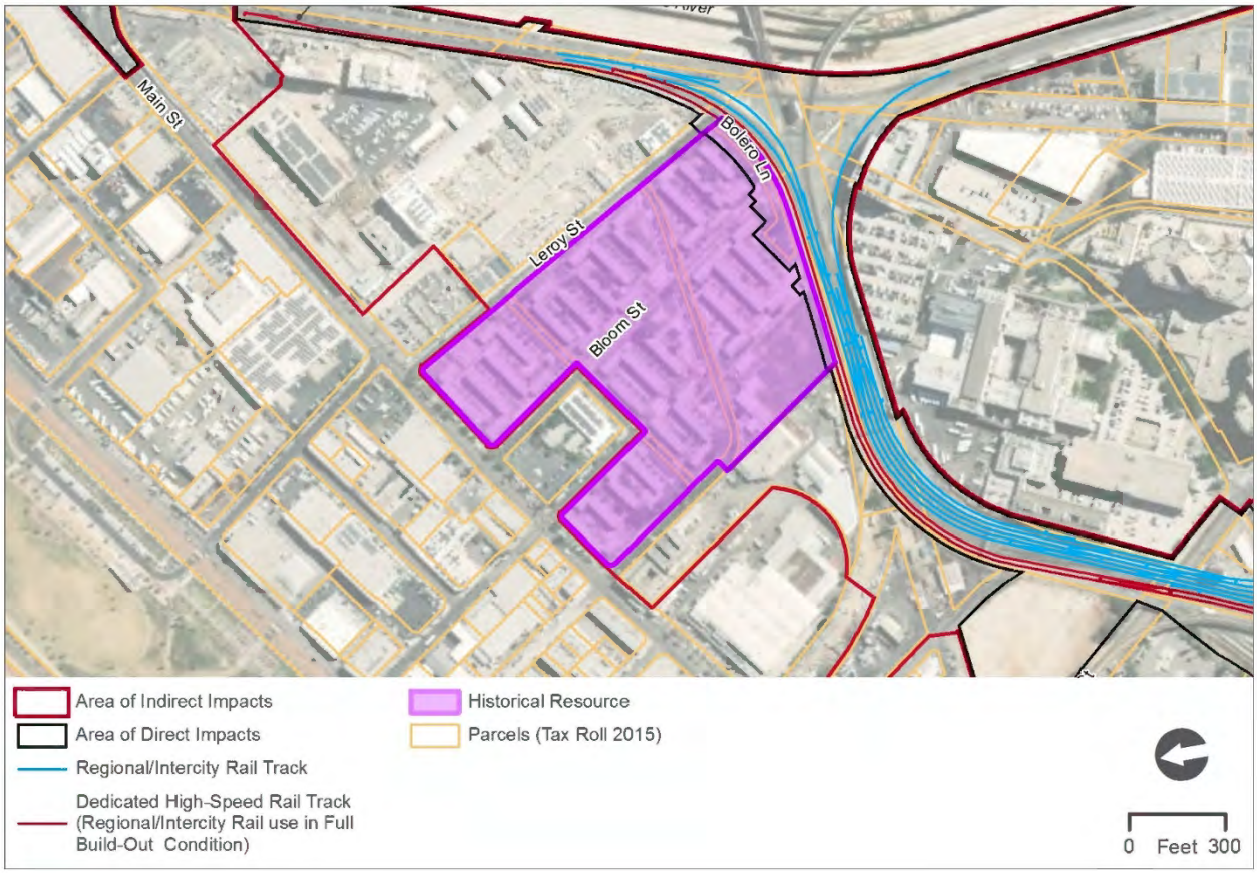
listed in the NRHP/CRHR, due to the preservation of the historic main building (e.g., tile roof, stucco wall cladding, arched main entrance, decorated beams, and tile floors) and other features, such as the ticketing halls, arcades, clock tower, and patios. There would be substantial alterations to the south retaining wall and Terminal Tower. While not a qualifying characteristic, approximately 5 to 7 feet of the Bauchet Street wall at the location where it joins the Avila Street wall would be demolished and replaced by a new wall to provide adequate fire access.

For LAUS and the associated Vignes Street Undercrossing, this is considered a significant impact. As with the proposed project, Mitigation Measures HIST-1a through HIST-1d (described in Section 3.12, Cultural Resources) are proposed to reduce this impact; however, impacts would remain significant and unavoidable.

William Mead Homes

In contrast to the proposed project, the track improvements including two new lead tracks for the planned HSR system and a retaining wall/sound wall associated with the build alternative would extend outside of the railroad ROW; thereby resulting in a physical encroachment along the southern edge (or rear) of the property (Figure 5-23). This encroachment would require a partial acquisition along the property's southern border, which in turn would require the modification to portions of Bolero Lane. The modifications would extend the roadway centerline into the lawn areas closer to the existing buildings, and remove up to 21 parking spaces, a portion of one of the laundry areas, a modern handball court, and small portion of the baseball field. None of the contributing buildings would be acquired or altered. Nonetheless, this is considered a significant impact. Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts; however, impacts would remain significant and unavoidable.

Figure 5-23. William Mead Homes Historic Resource Boundary and Areas of Direct and Indirect Impacts, Build Alternative.



Friedman Bag Company—Textile Division Building

Similar to the proposed project, the Friedman Bag Company—Textile Division Building would be demolished during the interim condition for construction of the loop track. This is considered a significant impact. As with the proposed project, Mitigation Measure HIST-3 (described in Section 3.12, Cultural Resources) would minimize this impact; however, the impact would remain significant and unavoidable.

North Main Street Bridge

Similar to the proposed project, the build alternative would include the same type of safety improvements at the North Main Street Bridge location. Safety improvements at the North Main Street Bridge include: new sidewalk and curb ramps for ADA access; proposed Metrolink wire mesh fence, gates, and hand-railings to keep pedestrians within the sidewalk; modification of northwest and southwest wingwalls to accommodate pedestrian access; modification of the bridge roadway to add a new median (8 inches high, 8 feet-wide, and 100 feet long); new pavement and restriping of the roadway to accommodate the new median and other safety improvements. Work nearby, but not upon, the North Main Street Bridge includes railroad gate and traffic signal improvements, the addition of a second median to the west of the railroad tracks on Main Street, and reconfiguration of an existing utility manhole to grade.

These safety improvements have potential to cause a significant impact on the North Main Street Bridge as a historical resource. The bridge's wingwalls are an important character defining feature, and there is no historic period precedent for a median upon its decking where the new median would be constructed. Impacts are similar to the proposed project. Mitigation Measure HIST-4 (described in Section 3.12, Cultural Resources) includes provisions that require the design of sidewalks, decking, and wingwalls to follow the Secretary of Interior's Standards for the Treatment of Historic Properties, and for the City of Los Angeles CHC to review the proposed modifications pursuant to Article 1, Section 22.171.14 of the City Cultural Heritage Ordinance. Upon implementation of Mitigation Measure HIST-4, impacts would be reduced to a level less than significant.

Archaeological Site CA-LAN-1575/H

Archaeological Site CA-LAN-1575/H extends throughout the parcel boundaries of LAUS and likely extends farther. Similar to the proposed project, implementation of any phase of the build alternative would result in disturbance, displacement, or damage to archaeological remains present in Archaeological Site CA-LAN-1575/H. This site has components that are NRHP/CRHR eligible under Criterion D/4 that have yielded, and are anticipated to yield, significant archaeological data related to the Prehistoric/Historic Native American Period (AD 1000 to 1848) and the American Period (1850 to 1966). Past archaeological projects that impacted the site indicate that significant components of Archaeological Site CA-LAN-1575/H would be directly impacted by construction of the build alternative. Features from the remains of Chinatown including privies and architectural elements, such as floors, foundations and a large number of items left by the residents who were forced to relocate may be encountered. Artifacts, features, and possibly human remains may be uncovered from the Native American component.

Similar to the proposed project, under any phase of the build alternative, Archaeological Site CA-LAN-1575/H may sustain direct impacts as the result of proposed construction activities in the ADI (e.g., excavations for utility relocations, retaining walls, bridge supports, and drainage improvements.). Although a large percentage of this site has been covered in artificial fill, the proposed depth of construction activities ranges between 5 to 100 feet below the present ground surface. Many activities will penetrate below the maximum recorded level of artificial fill and will likely impact significant archaeological deposits. The build alternative would result in a greater potential for impacts as the proposed project due to the substantially greater amount of excavation that would occur for the at-grade passenger concourse. This is considered a significant impact. As with the proposed project, Mitigation Measures HIST-5 and HIST-6 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, once operational, the build alternative would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. There are no anticipated corresponding impacts on any of the built environment historical resources as the result of long-term operations.

Since operations occur at ground surface and intact archaeological resources are buried, there would be no anticipated corresponding impacts on archaeological historical resources throughout operations. The build alternative would result in impacts similar to the proposed project. Therefore, no impacts from long-term operations would occur.

Indirect Impacts

The following are historical resources that are considered for their indirect impacts:

Los Angeles Union Station - The at-grade passenger concourse associated with the build alternative is incompatible with LAUS as a historical resource, resulting in indirect visual impacts. At this early stage of project design, the grand canopy associated with the build alternative and the at-grade concourse may include modern design elements which are incompatible with the historic fabric and other character defining features of LAUS. The grand canopy of the at-grade passenger concourse is vertical in nature, and with a 70 feet maximum height above the elevated rail yard platforms, it would be visible behind the historic concourse and outdoor courtyards which are extant character defining features of LAUS.

Historically, LAUS and its landscape have been experienced primarily, though not completely, in a horizontal, at-grade capacity. A transit rider enters the complex from Alameda Street, either into the waiting room or the ticketing concourse, ultimately moving through enclosed, rectangular courtyards that are traditional features of Spanish Renaissance and Spanish Revival architecture. A visitor might sit and wait temporarily in any of these areas before continuing eastward through the existing passenger concourse and into the pedestrian passageway before ascending up ramps to their respective boarding platform. Though the at-grade concourse is essentially an expanded horizontal passageway in the same at-grade location as the present historic passageway, and offers a similar pattern of east to west circulation from the historic concourse through to the at-grade concourse and then up to the platforms, it is of non-historic dimensions, design, and materials and would have new vertical and expanded horizontal circulation elements.

Though LAUS's historic courtyards will remain, the grand canopy associated with the at-grade passenger concourse may be visible from within them. The at-grade passenger concourse itself would not be visible from the historic courtyards, LAUS, or beyond.

These indirect impacts are considered a significant impact for LAUS. While Mitigation Measure HIST-1a through HIST-1d (described in Section 3.12, Cultural Resources) are proposed to mitigate impacts at LAUS, the impacts would remain significant and unavoidable.

William Mead Homes - Similar to the proposed project, construction of a sound wall atop the retaining wall adjacent to William Mead Homes associated with the build alternative would result in indirect impacts because of the introduction of visual elements associated with a sound wall where there was not previously a wall. This indirect impact is considered a significant impact for William Mead Homes. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts to a level less than significant.

Los Angeles Department of Water and Power Main Street Center – Similar to the proposed project, the build alternative would introduce a retaining wall within the railroad ROW and adjacent to the historical resource boundary but neither would acquire any portion of the historical resource nor any of the contributing buildings. LADWP Main Street Center resource has a utilitarian/industrial character, and the visual impact associated with introduction of a new retaining wall and movement of existing railroad tracks closer to the contributing buildings on the property is considered less than significant.

Mission Tower – Similar to the proposed project, the tracks that connect to LAUS that would be elevated for the build alternative would return to grade well before they reach Mission Tower. The visual change from the existing condition would be minimal at Mission Tower, and the integrity of the characteristics that qualify it for the CRHR would not be diminished. Therefore, impacts are considered less than significant.

Terminal Annex – Similar to the proposed project, the rear of the building would not be destroyed, damaged, nor altered and no portion of the property would be acquired as a result of the build alternative. Potential vibration from work in parcels adjacent to the property is unlikely to disturb the current occupants and function of the building, because drilling, and not pile driving, is proposed at this location. Impacts are considered less than significant.

Macy Street School – Similar to the proposed project, the setting at LAUS, to the west of the Macy Street School, would be changed with the build alternative but it does not contribute to historic significance under Criterion 1 (association with events that have made a significant contribution to the broad patterns of history) for ethnic heritage or Criterion 2 (association with the lives of historically important persons) for association with Principal Sterry. Therefore, it would be considered a less than significant impact on the resource. Impacts are considered less than significant.

Los Angeles Plaza Historic District – No direct impact on the Los Angeles Plaza Historic District will occur because it will not be physically disturbed or altered by the build alternative. The grand canopy associated with the at-grade passenger concourse would be a maximum height of 70 feet above the elevated rail yard platforms. The appearance of this infrastructure element may result in an indirect visual impact since it may be visible from portions of the Plaza area. However, none of the characteristics that qualify Los Angeles Plaza Historic District for the CRHR would have their integrity diminished, because the views east from the Plaza have changed substantially since the end of the period of significance (1932). This view of the landscape has changed dramatically over the last eight decades due to the construction of LAUS, modernization of Alameda and Los Angeles Streets, construction of US-101 and the El Monte Busway, high rise condominium buildings, Gateway Plaza, and the MWD Headquarters. Therefore, indirect impacts associated with the Plaza are considered a less than significant.

Denny's Restaurant - The parking lot would be used as a temporary staging area for the build alternative. The Denny's building will not be physically disturbed or altered, and its setting would be unchanged after construction is completed. Therefore, impacts are considered less than significant.

Archaeological Site CA-LAN-1575/H - During construction activities for any phase of the build alternative, even though the construction site would be fenced and off-limits to the general public, indirect impacts

may still result from increased accessibility to archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens is considered an indirect impact. The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

THRESHOLD 3.12-B	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5

Direct Impacts – Construction

Similar to the proposed project, ground disturbance during construction for any phase of the build alternative has a high potential to impact recorded and unrecorded archaeological deposits in this highly sensitive ADI because project components, such as bridges (proposed to be demolished and replaced during the full build-out condition), would have deep excavations. A single multicomponent NRHP/CRHR-eligible resource, Archaeological Site CA-LAN-1575/H, is recorded within the ADI, and there is also the potential to encounter previously unrecorded archaeological resources buried within the ADI. Archaeological Site CA-LAN-1575/H is situated throughout the entire LAUS footprint and likely extends further than the currently defined boundary. Ground-disturbing construction activities during any phase of work would occur in areas known to contain Archaeological Site CA-LAN-1575/H and in areas that may contain previously undiscovered prehistoric and historical archaeological features or sites. The build alternative would result in a greater potential for impacts than the proposed project due to the substantially greater amount of excavation that would occur associated with the at-grade concourse. As with the proposed project, Mitigation Measures HIST-5 and HIST-6 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

As with the proposed project, once operational, the build alternative would involve passenger train operations along the railroad corridor and periodic maintenance on the railroad ROW. Since operations would occur at ground surface, and intact archaeological resources are buried, there would be no anticipated corresponding impacts of these operations to archaeological resources. Therefore, no impact would occur.

Indirect Impacts

Similar to the proposed project, during construction activities for any phase of the build alternative, even though the construction site would be fenced and off-limits to the general public, indirect impacts may still result from increased accessibility to archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens is considered a significant impact. The build alternative would result in impacts similar to

the proposed project. As with the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce this impact to a level less than significant.

THRESHOLD 3.12-C	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Direct Impacts – Construction

Similar to the proposed project, there is a potential for direct impacts on paleontological resources during any phase of work as a result of construction activities associated with the build alternative that may result in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Paleontological resource impacts would occur due to deep excavations beneath recent alluvium. Additionally, the at-grade passenger concourse (proposed to be built during the full-build-out condition) would result in significant impacts on paleontological resources if paleontologically sensitive sediments are encountered during excavation.

Ground-disturbing construction activities for all phases of work in shallow layers (i.e., fill or recent alluvium) would not impact paleontological resources. In contrast to the proposed project, shallow excavations related to the at-grade concourse design (anticipated to be 20 feet deep), raised rail yard, and elevated platforms associated with the build alternative are unlikely to impact paleontologically sensitive sediments. However, deeper excavations for other proposed bridge structures (run-through tracks structure, Cesar Chavez Avenue and Vignes Street Bridges, etc.) are anticipated to extend up to 100 feet below the surface and have the potential to impact paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but typically 40 to 70 feet deep in the vicinity of LAUS [Appendix L of this EIR]) and underlying Puente Formation (reported at depths of approximately 90 to 100 feet in areas around the newly proposed concourse). This is considered a significant impact. As with the proposed project, Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, once operational, the build alternative would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations occur at ground surface and intact paleontological resources are deeply buried, there would be no anticipated corresponding impacts of these operations on paleontological resources. The build alternative would result in impacts similar to the proposed project. Therefore, no impact would occur.

Indirect Impacts

Similar to the proposed project, even though the construction site would be off-limits to the general public, indirect impacts during all phases of work associated with the build alternative may result from increased accessibility by construction personnel to fossils through construction activities leading to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may

be considered an indirect impact. This is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts to a level less than significant.

THRESHOLD 3.12-D	Disturb any human remains, including those interred outside of formal cemeteries

Direct Impacts – Construction

Similar to the proposed project, ground-disturbing construction activities associated with the build alternative during all phases of work would occur in areas with the potential to contain human remains. This is considered a significant impact. The build alternative would result in a greater potential for impacts as the proposed project due to the substantially greater amount of excavation that would occur for the at-grade passenger concourse. As with the proposed project, Mitigation Measure HR-1 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, once operational, the build alternative would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations would occur at ground level and the discovery of human remains would occur only with ground-disturbing construction, there would be no anticipated corresponding impacts of these operations on human remains. The build alternative would result in impacts similar to the proposed project. No impact would occur.

Indirect Impacts

Similar to the proposed project, indirect impacts on human remains during any phase of the build alternative are not anticipated. Therefore, no impact would occur.

THRESHOLD 3.12-E	Cause a substantial adverse change in the significance of a TCR as defined in §21074

Direct Impacts – Construction

The boundary for Tribal Cultural Resource CA-LAN-1575/H is currently associated with the parcel boundaries of LAUS, although it is likely to extend further than its currently defined boundary. Similar to the proposed project, ground-disturbing construction activities for any phases of the build alternative include components (i.e., utility work, storm drain modification work, concourse and bridge support piles, etc.) that would have excavations in areas with the potential to contain Tribal Cultural Resource CA-LAN-1575/H as it relates to the descendants of groups that inhabited the area in the Native American period. This is considered a significant impact. The build alternative would result in a greater potential for impacts as the proposed project due to the substantially greater amount of excavation that would occur

with the at-grade passenger concourse. As with the proposed project, Mitigation Measures HIST-5 and HIST-6, as well as TCR-1 (described in Section 3.12, Cultural Resources), are proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, once operational, the build alternative would involve passenger train operations along the railroad corridor and periodic maintenance of the railroad ROW. Since operations would occur at ground surface, and the intact tribal cultural resource is buried, there would be no anticipated corresponding impacts on these operations to TCRs. The build alternative would result in impacts similar to the proposed project. Therefore, no impact would occur.

Indirect Impacts

Similar to the proposed project, even though the construction site would be off-limits to the general public, during construction activities associated with any phase of the build alternative, indirect impacts may result from increased accessibility by construction personnel to the tribal cultural resource (such as artifacts or sacred items) that could lead to resource looting or vandalism activities. Damage to improperly curated artifacts and other specimens is considered a significant impact. The build alternative would result in impacts similar to the proposed project. As with the proposed project, Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant.

Public Services

THRESHOLD 3.13-A	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i. Fire Protection ii. Police Protection

Direct Impacts – Construction

One fire station, LAFD Fire Station 4, is located in the project study area at 450 Temple Street in the Little Tokyo/Olvera Street/Chinatown community. Depending on the nature of the response, fire response may come from this location or from two to four of the surrounding fire stations. Similar to the proposed project, increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times; however, these disruptions are expected to be temporary and intermittent. Similar impacts on law enforcement services could also occur with implementation of the build alternative, thereby further affecting response times. The potential for an impact would occur during construction in the interim and full build-out conditions, and would be primarily

related to construction of the run-through track infrastructure south of US-101 and reconstruction of existing Vignes Street and Cesar Chavez Avenue Bridges. In the full build-out with HSR condition, there would be less potential for impacts on emergency response times because roadway construction would have already been completed prior to implementation of the planned HSR system. The build alternative would result in impacts similar to the proposed project. This is considered a significant impact. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) is proposed to reduce impacts to a level less than significant.

Direct Impacts – Operations

Similar to the proposed project, the build alternative is not anticipated to affect service ratios, response times, or other performance objectives throughout operation. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

The build alternative would also not impact emergency access. Similar to the proposed project, in 2031 and 2040, minimal project-related increases in delay are expected at intersections within the traffic study area. Emergency access would be maintained from Patsaouras Transit Plaza, which would provide emergency and fire lane access to the eastern side of the station. All modifications made would be coordinated and approved by the Fire Marshal to ensure the safest access is provided for emergency service providers. Upon completion of construction, no changes would be made to the evacuation routes as identified by the City. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Indirect Impacts

Similar to the proposed project, the build alternative would not directly generate population growth or require provision of new public services. In addition, any new private development around LAUS would be subject to the requirements of the City's General Plan, which sets policies and goals for provision of public services such as schools, parks, fire, police, and other public facilities. The build alternative would result in impacts similar to the proposed project. Impacts are considered less than significant.

Conclusion - Build Alternative

The build alternative would result in greater impacts related to transportation, air quality, and hazardous materials than the proposed project, and reduced impacts related to noise. The build alternative would meet all of the project objectives.

5.4.3 Reduced Historic Impact Alternative

Introduction

Section 15126.6(a) of the CEQA Guidelines requires that an EIR describe a range of alternatives to the project which would feasibly attain most of the project objectives, but would avoid or substantially lessen any of the significant impacts of the project.

Alternative Description

The purpose of the Reduced Historic Impact Alternative is to avoid or substantially reduce significant impacts on historical resources, archaeological resources, and paleontological resources. This alternative would accommodate future HSR trains on shared lead tracks in the throat segment, and would include an elevated rail yard, new above-grade passenger concourse, and up to ten run-through tracks. The key preservation elements of the Reduced Historic Impact Alternative are summarized below:

- Preserve Existing Historic Pedestrian Passageway (Tunnel) - The Reduced Historic Impact Alternative includes preservation of the existing pedestrian passageway; however, reconstruction of the existing ramps and stairs would be required to serve the new raised and widened platforms. The Reduced Historic Impact Alternative does not include a new expanded passageway below the rail yard. To preserve the existing pedestrian passageway, its utilities, and structure, the platforms may only be served by stairs and ramps, similar to existing conditions. The ramps would need to be extended approximately 70 feet in length to accommodate the elevated rail yard. Ramps would need to be nearly 300 feet in total length. As the existing Red/Purple Line structure is located diagonally across the rail yard footprint and directly beneath the pedestrian passageway, the floor of the pedestrian passageway would need to be maintained at its current elevation, on top of the Red/Purple Line station box. The existing portals along the pedestrian passageway walls, some of which have already been widened from their historic dimensions, would again be relocated to support the widened platforms on the elevated rail yard. The pedestrian passageway ceiling would need to be reconstructed because it is structurally attached to the existing platforms that would be elevated.
- Retain and Reuse Historic Butterfly Shed Canopy - Although the existing canopies may leak and require some level of repair, the Reduced Historic Impact Alternative would include the reuse of the majority of existing historic butterfly shed canopy structures with the new wider platforms on the elevated rail yard.
- Preserve Undercrossing at Cesar Chavez Avenue with New Bridge - The Reduced Historic Impact Alternative would preserve the Cesar Chavez Avenue Undercrossing in place and include construction of a new bridge crossing over the existing structure to fulfill structural loading capacity requirements for new tracks. The existing bridge currently has an existing load rating of Cooper E-47.3, which is below the required load rating of Cooper E-60.
- Preserve Undercrossing at Vignes Street with New Bridge - The Reduced Historic Impact Alternative would preserve the Vignes Street Undercrossing in place and include construction of a new bridge crossing over the existing structure to fulfill structural loading requirements for new tracks. The existing bridge currently has an existing load rating of Cooper E-50, which is below the required load rating of Cooper E-60.
- Preserve North Main Street Bridge – The Reduced Historic Impact Alternative does not include the safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate

future implementation of a quiet zone by the City of Los Angeles. No modifications to the wing walls or addition of new median on the bridge would occur.

Land Use and Planning

As with the proposed project, this alternative would be constructed mostly within the existing railroad ROW and would not physically divide an established community. Similar to the proposed project, new run-through track structures would impede upon or preclude future implementation of active transportation improvements that would enhance neighborhood connectivity and/or provide connections to the Los Angeles River, particularly connections from LAUS to the Los Angeles River. As with the proposed project, implementation of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) is proposed to reduce impacts to a level less than significant. Therefore, the Reduced Historic Impact Alternative would result in similar impacts as the proposed project.

Transportation and Traffic

The Reduced Historic Impact Alternative includes preservation of the existing pedestrian passageway. Since the only ground disturbance associated with this alternative in Segment 2 is in previously disturbed soils and is related to connecting ramps from the existing passageway to the newly raised rail yard and platforms, this alternative would require less grading and excavation than would be required for the proposed project to build the new above-grade passenger concourse. Therefore, this alternative would generate fewer construction truck trips although significant construction-related traffic impacts are still anticipated occur due to the resulting traffic delays and detours during construction. As with the proposed project, implementation of Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) is proposed to reduce impacts to a level less than significant. Therefore, the Reduced Historic Impact Alternative would result in similar construction-related transportation and traffic impacts as the proposed project.

Throughout operations, it is anticipated that impacts would still occur to the same intersections. Similar to the proposed project, in the 2031 condition, implementation of the Reduced Historic Impact Alternative would result in significant delays at the following three intersections per LADOT guidelines:

- Intersection #2: Garey Street and Commercial Street (AM peak hour)
- Intersection #10: Alameda Street and Los Angeles Street WB (PM peak hour)
- Intersection #15: Vignes Street and Main Street (PM peak hour)

Project-related operational traffic under this alternative would be similar to the proposed project. The Reduced Historic Impact Alternative would result in similar impacts to intersections in the 2031 condition and the 2040 condition. As with the proposed project, Mitigation Measure TR-2 (described in Section 3.3, Transportation and Traffic) is proposed to improve operations at Intersection #4 to better than pre-project conditions, and would minimize the operational traffic delay at Intersection #4, thereby reducing the operational traffic impact at Intersection #4 to a level less than significant.

Due to the limitation of signal timing, phasing, and coordination, no additional feasible mitigation measures are proposed to minimize the operational traffic delay at Intersection #2 in the 2031 and 2040 conditions. The project-related increased delays would continue to exceed LADOT guidelines for Intersection #2. Therefore, as with the proposed project, the operational traffic impacts at Intersection #2 would be significant and unavoidable for the Reduced Historic Impact Alternative.

As with the proposed project, train operations could be impacted during construction, and with implementation of Mitigation Measure TR-3 (described in Section 3.3, Transportation and Traffic), potential impacts on train operations during construction would be reduced to a level less than significant.

Although this alternative would reduce the amount of construction traffic, impacts would still occur to the same facilities. Therefore, traffic impacts would be similar to the proposed project.

Aesthetics

As with the proposed project, this alternative would include the addition of a retaining wall and sound wall supporting new lead tracks that would run alongside William Mead Homes, which would lead to a substantial degradation to the existing visual character in this area. As with the proposed project, Mitigation Measure AES-1 (described in Section 3.4, Aesthetics) is proposed to reduce impacts to a level less than significant.

Similar to the proposed project, residences that are located in close proximity to proposed infrastructure (William Mead Homes and Mozaic Apartments) could be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction and to increased light and glare permanently during operations. As with the proposed project, Mitigation Measures AES-2 and AES-3 (described in Section 3.4, Aesthetics) are proposed to reduce construction-related and operations-related light and glare impacts to a level less than significant. Therefore, aesthetics impacts would be similar to the proposed project.

Air Quality and Global Climate Change

The Reduced Historic Impact Alternative includes preservation of the existing pedestrian passageway. As discussed above, this alternative would reduce the number of construction truck trips, which would reduce the daily and annual construction emissions. Mobile-source emissions and fugitive dust emissions are anticipated to be less than the proposed project, but still significant. As with the proposed project, Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) are proposed to reduce the fugitive dust and exhaust emissions generated on-site during construction. However, emissions under this alternative would still exceed the localized SCAQMD local significance thresholds after mitigation; therefore, impacts would remain significant and unavoidable.

Similar to the proposed project, during construction, peak cancer risks under this alternative would exceed the SCAQMD's threshold of 10 in 1 million. As with the proposed project, Mitigation Measure AQ-2 is proposed to reduce impacts to a level less than significant. This alternative would also result in long-term health risks at sensitive receptors (residential land uses near the railway). This is considered a significant

impact. Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) is proposed to reduce impacts to level less than significant.

Although this alternative would reduce the amount of air quality emissions, impacts would still remain significant after mitigation. Therefore, air quality impacts would be similar to the proposed project.

Noise and Vibration

The Reduced Historic Impact Alternative includes preservation of the existing pedestrian passageway. Noise associated with vehicular trips is anticipated to be lower; however, construction-related noise impacts would still be considered significant for residents of William Mead Homes and the Mozaic Apartments. As with the proposed project, Mitigation Measures NV-2 and NV-3 (described in Section 3.6, Noise and Vibration) is proposed to reduce these impacts; however, impacts would remain significant and unavoidable.

Similar to the proposed project, this alternative would result in significant construction-related vibration impacts for residents of William Mead Homes and the Mozaic Apartments. As for the proposed project, Mitigation Measures NV-2 and NV-3 (described in Section 3.6, Noise and Vibration) are proposed to reduce construction-related vibration impacts to a level less than significant.

Similar to the proposed project, the operational noise impact in the 2031 and 2040 conditions would be significant; although the number of severely-impacted sensitive receptors is reduced. Mitigation Measure NV-1 (described in Section 3.6, Noise and Vibration) is proposed to reduce operational noise impacts in the 2031 and 2040 conditions to a level less than significant.

Although this alternative would reduce the amount of construction noise, impacts would still remain significant after mitigation. Operational noise impacts would also be reduced. Therefore, noise and vibration impacts would be reduced compared to the proposed project.

Biological Resources

Compared to the proposed project, this alternative would preserve the Cesar Chavez Avenue Undercrossing and Vignes Street Undercrossing in place and would include construction of a new bridge crossing over the existing structures at these locations. Although the retention of existing bridges at Cesar Chavez Avenue and Vignes Street would avoid the demolition of these structures that may provide habitat for MBTA species and special-status bats, the addition of new bridge crossings at these locations would cause the same potential for impact, and would require the same preconstruction surveys and avoidance measures (Mitigation Measures BIO-1 and BIO-2 [described in Section 3.7, Biological Resources]) for these species at these locations. In addition, this alternative could result in impacts on protected trees; implementation of Mitigation Measure BIO-3 (described in Section 3.7, Biological Resources) is proposed to reduce impacts to a level less than significant. Similar to the proposed project, with implementation of mitigation, impacts on biological resources would be reduced to a level less than significant. Therefore, biological resources impacts would be similar to the proposed project.

Hydrology and Water Quality

As with the proposed project, this alternative would require extensive grading to construct the run-through infrastructure south of LAUS and elevate the rail yard. Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, if not properly managed. This alternative would also increase impervious surfaces. An overall increase in storm runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and exceed the capacity of some on-site drainage systems. Similar to the proposed project, this alternative would also result in significant water quality impacts during construction and operations. As with the proposed project, implementation of Mitigation Measures HWQ-1 through HWQ-8 (described in Section 3.8, Hydrology and Water Quality) are proposed to reduce impacts to a level less than significant. Therefore, hydrology and water quality impacts would be similar to the proposed project.

Geology and Soils

Implementation of this alternative would result in similar impacts related to geology and soils as the proposed project, as the project site would be graded to accommodate development, and new facilities would be constructed on the project site per current building code requirements. Similar to the proposed project, settlement due to application of higher loads and liquefaction of the existing soils have the potential to occur under this alternative. As with the proposed project, implementation of Mitigation Measure GEO-1 (described in Section 3.9, Geology and Soils) is proposed to reduce impacts associated with geology and soils to a level less than significant. Therefore, geology and soils impacts would be similar to the proposed project.

Hazards and Hazardous Materials

This alternative would be located in close proximity to the same existing RECs as the proposed project. The close proximity of these existing RECs to project-related construction activities would carry the potential for encountering contaminated soil and/or groundwater. This alternative would also require demolition of existing structures. As with the proposed project, implementation of Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10, Hazards and Hazardous Materials) are proposed to reduce impacts associated to a level less than significant. Therefore, hazards and hazardous materials impacts would be similar to the proposed project.

Utilities/Service Systems and Energy Conservation

Similar to the proposed project, utility replacements and/or relocations would have the potential to encounter documented and undocumented cultural resources. Some of these resources could be historically significant. As with the proposed project, implementation of Mitigation Measure HIST-5 (described in Section 3.12, Cultural Resources) is proposed to reduce impacts to a level less than significant. Therefore, utilities/service systems and energy conservation impacts would be similar to the proposed project.

Cultural Resources

Historical Resources

As described in Section 3.12, Cultural Resources, the portions of the LAUS property that would be demolished as part of the proposed project would include the following contributing features: platforms, butterfly shed canopies, ramps, railings, pedestrian passageway, Cesar Chavez Avenue Undercrossing, Car Supply Building, and Vignes Street Undercrossing.

Compared to the proposed project, this alternative would reduce significant impacts on historical resources. The Reduced Historic Impact Alternative includes preservation of the existing pedestrian passageway and the reuse of the existing historic butterfly shed canopy structures. Therefore, compared to the proposed project, this alternative would avoid the demolition of these character-defining features.

Compared to the proposed project, this alternative would preserve the Cesar Chavez Avenue Undercrossing and Vignes Street Undercrossing in place and would include construction of a new bridge crossings over the existing structures at these locations. Due to the requirement to raise the tracks at the throat, this alternative would involve the following:

- Existing historic bridge remains in place
- A new bridge would be constructed over the existing bridge using steel superstructure
- New structural elements could match the materials of the existing structure

Although the retention of existing bridges at Cesar Chavez Avenue and Vignes Street would avoid the demolition of these structures that are contributing features to a historic resource, this alternative would result in indirect visual changes to the existing bridge structures through the addition of a superstructure; this would be considered a significant adverse change to a historic resource.

Although this alternative would avoid the demolition of the existing passageway and butterfly shed canopy structures, it would still have a substantial adverse change in significance on the following character-defining features: platforms, outdoor courtyards, Terminal Tower, Car Supply Building, and south retaining wall. Similar to the proposed project, the above-grade passenger concourse associated with this alternative would be incompatible with LAUS as a historical resource resulting in indirect effects. The height of the above-grade passenger concourse at over 90 feet above grade would be visible behind the historic concourse and outdoor courtyards (extant character defining features of LAUS). This is considered a significant impact. As with the proposed project, Mitigation Measures HIST-1a through HIST-1d (described in Section 3.12, Cultural Resources) are proposed to reduce these impacts; however, impacts would remain significant and unavoidable.

Similar to the proposed project, this alternative would still result in significant impacts on other historical resources, including indirect visual impacts at William Mead Homes (through the addition of a retaining wall/sound wall at the rear of the property) and direct impacts on the Friedman Bag Company—Textile Division Building (which would be demolished during the interim condition for construction of the loop

track). As with the proposed project, Mitigation Measures AES-1 (described in Section 3.4, Aesthetics) and HIST-2 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts on William Mead Homes to a level less than significant. Mitigation Measure HIST-3 (described in Section 3.12, Cultural Resources) is proposed to minimize impacts on the Friedman Bag Company—Textile Division Building; however, as with the proposed project, impacts would remain significant and unavoidable.

Compared to the proposed project, this alternative would not include the safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River to facilitate future implementation of a quiet zone by the City of Los Angeles. Therefore, this alternative would avoid impacts on the North Main Street Bridge because it would not result in the modification of the bridge needed to convert the area for a quiet zone.

Archaeological Resources and Paleontological Resources

This alternative would reduce the amount of grading and excavation that would be required under the proposed project since only the elevated portion of the above-grade concourse is proposed and the historic passageway is maintained. Ground disturbance associated with this alternative in Segment 2 is at least partially in previously disturbed soils (existing rail yard fill) and is related to connecting the existing passageway to the newly raised rail yard and platforms and intermittent deep excavations for piles to support the above-grade structure.

Implementation of this alternative would reduce the potential impact with respect to known and unknown archaeological resources and paleontological resources. Because this alternative would have a reduced area of disturbance as compared to the proposed project, there would be a reduced potential for encountering archaeological resources and paleontological resources during grading activities. As with the proposed project, Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts on paleontological resources to a level less than significant. Implementation of Mitigation Measures HIST-5 and HIST-6 (described in Section 3.12, Cultural Resources) are proposed to reduce impacts on archaeological resources to a level less than significant.

Public Services

Similar to the proposed project, increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect emergency response times under this alternative. As with the proposed project, Mitigation Measure TR-1 (described in Section 3.3, Transportation and Traffic) is proposed to reduce impacts on emergency response times to a level less than significant. Therefore, public services impacts would be similar to the proposed project.

Conclusion – Reduced Historic Impact Alternative

Under this alternative, impacts on historical resources, archaeological resources, and paleontological resources would be avoided and/or substantially reduced. This alternative would not result in additional significant impacts on the remaining issue areas beyond what would occur under the proposed project, as described above.

This alternative would meet all of the project objectives, with exception of the following:

- Provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities

To preserve the existing passageway, its utilities, and structure, the platforms may only be served by stairs and ramps, as in the current condition. As a result of this alternative, the platform canopies would not provide adequate coverage for weather protection since the platforms would be widened and lengthened and the butterfly shed canopies would not perform their historic function since they remain the existing size. Further, reuse of the butterfly shed canopies with this alternative do not take into account the design requirements of multiple operating agencies, each with their own unique needs and train types and each with different design criteria for proximity and clearance of canopies. This alternative would not improve pedestrian access to the train platforms, provide modernized VCEs, improve passenger flow and capacity, or enhance accessibility for passengers with disabilities.

5.5 Environmentally Superior Alternative

This section identifies the Environmentally Superior Alternative among the alternatives considered in this EIR. CEQA defines the Environmentally Superior Alternative as the alternative that would result in the fewest or least significant environmental impacts, while still achieving the project objectives.

As provided in Table 5-15, the no project/no build alternative would avoid the construction and operational impacts identified for the proposed project. However, the no project/no build alternative does not meet the project objectives. Additionally, CEQA Guidelines, Section 15126.6(e) requires that, if the environmentally superior alternative is the "no project alternative," the EIR shall also identify an environmental superior alternative among the other alternatives.

Compared to the proposed project, the Reduced Historic Impact Alternative would reduce impacts on cultural resources (historical resources, archaeological resources, and paleontological resources). Therefore, the Reduced Historic Impact Alternative is considered the Environmentally Superior Alternative. This alternative would meet all of the project objectives, with exception of one, because it does not provide an expanded passenger concourse at LAUS that is functionally modern with enhanced safety elements, ADA accessibility, and passenger amenities.

Table 5-15. Comparison of Alternative Impacts on Proposed Project

Environmental Issue Area	Proposed Project	No Project/No Build Alternative	Build Alternative	Reduced Historic Impact Alternative
Land Use and Planning	Less than significant with mitigation	Avoid	Similar	Similar
Transportation	Significant and unavoidable	Avoid	Greater	Similar
Aesthetics	Less than significant with mitigation	Avoid	Similar	Similar
Air Quality and Global Climate Change	Significant and unavoidable	Avoid	Greater	Similar
Noise and Vibration	Significant and unavoidable	Avoid	Reduced	Similar
Biological Resources	Less than significant with mitigation	Avoid	Similar	Similar
Hydrology and Water Quality	Less than significant with mitigation	Avoid	Similar	Similar
Geology and Soils	Less than significant with mitigation	Avoid	Similar	Similar
Hazards and Hazardous Materials	Less than significant with mitigation	Avoid	Greater	Similar
Utilities/Service Systems and Energy Conservation	Less than significant with mitigation	Avoid	Similar	Similar
Cultural Resources	Significant and unavoidable	Avoid	Greater	Reduced
Public Services	Less than significant with mitigation	Avoid	Greater	Similar

Notes:
Avoid = Impacts under this alternative avoided as compared to impacts for the proposed project.
Reduced = Impacts under this alternative reduced as compared to impacts for the proposed project.
Similar = Impacts under this alternative similar to impacts for the proposed project.
Greater = Impacts under this alternative greater to impacts for the proposed project.

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6.0 Other Statutory Considerations

This section provides a discussion of other statutory requirements under CEQA. These topics include a discussion of growth-inducing impacts, significant irreversible environmental changes, impacts found not significant, and the identification of significant and unavoidable impacts.

6.1 Growth-Inducing Impacts

In accordance with Section 15126.2(d) of the CEQA Guidelines, an EIR must:

> *Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental impacts. Also discuss the characteristics of some project which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

Substantial growth impacts could be manifested through the provision of infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

In parallel with project implementation, SCRRA is currently developing the SCORE Program, a $10 billion plan that identifies the need for substantial investments in rail infrastructure in the Southern California region to upgrade the Metrolink system and meet the current and future needs of the traveling public. The proposed project is a critical component of the SCORE Program, providing capacity enhancements to accommodate the forecasted increase in train movements and associated passenger volumes at LAUS.

The proposed project would generate employment opportunities during the construction and operational phases of the project. The proposed project is expected to result in approximately 4,500 jobs per year during the construction phase, which would create short-term jobs for Los Angeles County and help in lowering the current rates of unemployment. The above-grade passenger concourse and new expanded passageway includes up to 160,000 square feet of transit-serving retail uses and approximately 30,000 square feet of office/commercial uses. While the proposed project would generate additional employment opportunities within the new passenger concourse and additional rail services, the majority of these jobs are expected to be filled by residents of Los Angeles and surrounding communities. Link US is identified in the

2016 RTP/SCS and would not generate substantial growth from that already planned for in the 2016 RTP/SCS.

The proposed project would complement planned development in the project study area consistent with the City's General Plan and CCNCP, which encourage the transit orientation of Downtown Los Angeles and direct growth to areas served by infrastructure and transit near LAUS. Businesses from other areas of the region could be drawn to the immediate area surrounding LAUS because of the multimodal opportunities and increased pedestrian activity around the station, as well as additional visitors passing through the area, especially following the introduction of the planned HSR system as early as 2033. The type of future land use development that could occur around LAUS would most likely be transit oriented, consisting of mixed-use residential, office, and commercial development designed to maximize access to public transportation.

While the proposed project would include the construction of additional transportation infrastructure, the majority of infrastructure is proposed within an existing transportation corridor, and at the existing LAUS facility, which is defined in the 2016 RTP/SCS as a high quality transit area and a transit priority area in a highly urbanized area. Furthermore, the proposed project would facilitate the forecasted increase in train movements through LAUS. There is no lack of existing infrastructure in the project study area that would serve as an obstacle to growth. Projected population growth would occur in the project study area with or without the additional infrastructure associated with the project. In addition, potential growth is already planned for in the project study area and captured at the local level in the ADSP and at the regional level in the 2016 RTP/SCS.

Based on the analysis provided above, the proposed project would accommodate the forecasted increase in train movements and passenger volumes through LAUS. Any future population growth in the region and/or project study area (i.e., future land use development) is anticipated to be consistent with the City's General Plan and CCNCP. Therefore, the proposed project would not induce unplanned growth that could otherwise result in significant or adverse secondary impacts.

6.2 Significant Irreversible Environmental Changes

Section 15126.2(c) of the CEQA Guidelines requires an EIR to address any significant irreversible environmental changes that may occur as a result of project implementation. CEQA requires that irreversible and irretrievable commitment of resources be addressed for certain categories of projects, including "[t]he adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency" (CEQA Guidelines CCR Sections 15127[a]).

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the impacts that this use could have on future generations. Commitments of resources could be current, as well as future. Future commitments of resources would be associated with the secondary effect of growth-inducing impacts. Irreversible impacts result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result

of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

Resources, such as timber used for the construction of the new above-grade passenger concourse, are generally considered renewable and would ultimately be replenished. Human resources are also considered a renewable resource. Non-renewable resources, such as petrochemical construction materials, steel, copper, lead and other metals, gravel, concrete, and other materials, are typically considered finite and would not be replenished over the lifetime of the project.

The construction and implementation of the proposed project would entail the irreversible and irretrievable commitment of some land and energy and human resources, including labor required for the planning, design, construction, and operation of the proposed project. These resources include the following:

- Commitment of land for transportation purposes
- Commitment of natural resources during construction activities associated with the project, including the use of construction materials (e.g., steel, concrete, etc.)
- Consumption of nonrenewable energy resources, mainly diesel and electricity, as a result of construction, operation, and maintenance of the proposed improvements

The land used for the proposed project would continue the existing commitment of land in the area for transportation purposes. To the extent that this commitment would be for long-range use, it would be an irreversible commitment. In the event that a greater need would arise for the land in the future, or the corridor was no longer needed, the land could conceivably be converted to some other use. Currently, there is no reason to expect that such a need for conversion would ever be necessary or desirable.

In terms of the proposed project's commitment of resources, there are several resources, both natural and built, that would be expended during the construction and operation of the project. The proposed project would result in a short term increase in the use of energy to manufacture, deliver, and construct the proposed improvements. The manufacturing of materials used to construct the proposed project and energy in the form of natural gas, petroleum products, and electricity consumed during construction and operation would contribute to the incremental depletion of renewable and non-renewable resources. Steel, concrete, and other materials would be recycled, to the extent feasible; however, the loss of these resources is considered irreversible because their reuse for some other purpose than the proposed project would be highly unlikely or impossible. Based on these considerations, the project constitutes an irreversible and irretrievable commitment of natural resources.

The proposed project's use of non-renewable energy sources, such as diesel fuel, is considered an irreversible, irretrievable commitment of these petroleum resources. The commitment of resources to construct and operate the proposed project is based on the belief that residents, employees, and visitors would benefit from the improved efficiency, accessibility, safety, and environmental quality of the transportation system in Southern California. These benefits are anticipated to substantially outweigh any irreversible or irretrievable commitments of resources.

6.3 Effects Found Not Significant

In accordance with Section 15128 of the CEQA Guidelines, an EIR must contain a statement briefly indicating the reasons that various potential significant impacts of a project were determined not to be significant. Metro has determined that the proposed project would not have the potential to cause significant impacts associated with the resource issue areas identified below.

6.3.1 Agriculture and Forestry Resources

Farmlands – The project study area is in an urban area that is developed with transportation infrastructure (e.g., LAUS, railroad tracks, US-101, and I-10), commercial and industrial buildings, residential apartment buildings, and government buildings. According to the 2014 Los Angeles County Important Farmland Map, the project study area is designated as Other Land (California Department of Conservation 2016c). In addition, there are no Williamson Act contract lands in the project study area (California Department of Conservation 2016a).

The majority of the project study area is designated for Hybrid Industrial, Public Facilities, Regional Center Commercial, and Heavy Manufacturing uses. There is no agricultural, forest, or timberland uses or zoning designations in the project study area. No temporary or permanent impacts on farmlands or other agricultural resources would occur during construction or operation of the proposed project.

Forest Land/Timberlands – The project study area does not include any forest land (i.e., land with 10 percent tree coverage, as defined in PRC Section 12220(g)) or timberland (i.e., land that is available for growing a crop of trees intended for commercial use, as defined in PRC Section 4526). Therefore, no temporary or permanent impacts on forest land/timberland resources would occur during construction or operation of the proposed project.

6.3.2 Mineral Resources

The project study area is located generally north of Union Station Oil Field. Union Station Oil Field was discovered in 1967. This field is represented by a generally east-west trending anticline, a structural feature (elongated dome) that traps petroleum and related compounds (i.e., crude oil and natural gas). Surface locations of most wells (directionally drilled wells) are south of the project study area along Garey Street, south of First Street. Because the operating well sites are located outside of the project study area, recovery of natural resources would not be affected.

Based on a review of Exhibit A: Mineral Resources of the Conservation Element of the City of Los Angeles General Plan, a portion of the project study area is located within Mineral Resources Zone-2 (City of Los Angeles 2001). The Mineral Resources Zone-2 contains potentially significant sand and gravel deposits which are to be conserved. However, much of the area within Mineral Resources Zone-2 in Los Angeles was developed with structures prior to the Mineral Resources Zone-2 classification, and therefore, are unavailable for extraction (City of Los Angeles 2001). The project study area is located within an urbanized area of the City of Los Angeles and is currently developed. The mining of such materials within an urbanized

environment is not practical. Based on this context, the proposed project would result in no impact on mineral resources.

6.3.3 Population and Housing

No residential displacements would be required to implement the proposed project. Therefore, the proposed project would not result in the displacement of substantial numbers of people or housing and would not require the construction of replacement housing elsewhere. No impact would occur associated with population and housing.

6.3.4 Recreation

Implementation of the project would not increase the demand for recreational facilities, or result in physical impacts that would deteriorate existing facilities. The demand for parklands and other recreational facilities would be similar to existing conditions. The proposed project would not substantially induce population growth in the project study area and thereby would not significantly increase the use of parks. No impact would occur associated with the physical deterioration of parks and other recreational facilities.

6.4 Significant and Unavoidable Environmental Impacts

Section 15216.2(b) of the CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Sections 3.2 through 3.13 of this EIR provide a detailed analysis of all significant environmental impacts related to the project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to a level less than significant. Section 4.0, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined impacts of the project and related projects considered in cumulative analysis. If a specific impact in either of these sections cannot be fully reduced to a less than significant level, it is considered a significant and unavoidable impact.

Implementation of the proposed project would result in significant and unavoidable impacts in the following issue areas: transportation, air quality, noise, and cultural resources. The following impacts would be significant and unavoidable even after the implementation of mitigation.

Construction (Short-Term)

- Air quality (construction emissions would exceed the SCAQMD's daily criteria pollutant and localized significance thresholds)
- Noise (construction daytime and nighttime noise levels would exceed thresholds at William Mead Homes and Mozaic Apartments)

Operations (Long-Term)

- Transportation (increased delays at one intersection [Intersection #2: Garey Street and Commercial Street] in the 2031 and 2040 with project conditions would exceed LADOT guidelines)
- Cultural resources (substantial adverse change in the significance of the following historical resources: LAUS and Vignes Street Undercrossing and Friedman Bag Company – Textile Division Building)

If the Metro Board approves the project with significant and unavoidable impacts, Metro is required under CEQA to prepare a statement of overriding considerations.

7.0 Response to Comments

Following completion of the review process for the Draft EIR, this section will contain the written comments received by Metro on the Draft EIR during the public comment period and Metro's responses to those comments.

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