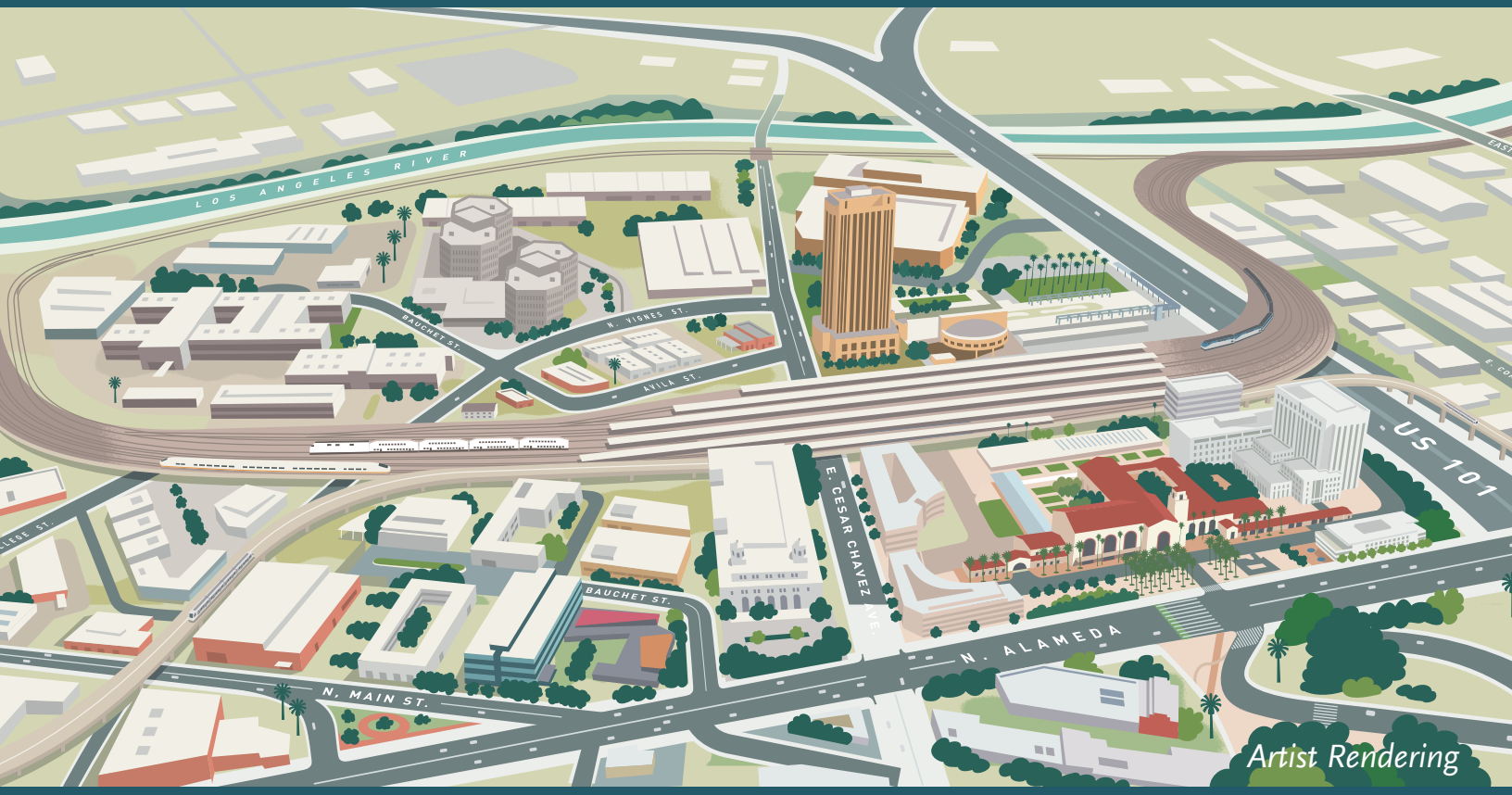
Link Union Station

Combined Final Environmental Impact Statement/ Record of Decision

Volume I: Report

January 2026



The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, renewed July 22, 2024 and executed by the Federal Railroad Administration and the State of California.

Metro

CALIFORNIA High-Speed Rail Authority

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Link Union Station Project

COMBINED FINAL ENVIRONMENTAL IMPACT STATEMENT/ RECORD OF DECISION

VOLUME I: REPORT

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January 2026

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a memorandum of understanding (MOU) dated July 23, 2019 (renewed July 22, 2024) and executed by the Federal Railroad Administration (FRA) and the State of California. Pursuant to the MOU, the California High-Speed Rail Authority is a federal lead agency for complying with the NEPA and other federal environmental laws for the Project. Prior to the July 23, 2019 MOU, the FRA was the federal lead agency. California High-Speed Rail Authority and Los Angeles County Metropolitan Transportation Authority, in their capacity as NEPA co-lead agencies, issue a single document that consists of the Combined Final Environmental Impact Statement and Record of Decision (Combined Final EIS/ROD). Pursuant to 49 U.S.C. 304a(b) and 23 U.S.C. 139(n)(2), a Combined Final EIS/ROD is to be issued unless California High-Speed Rail Authority determines that statutory criteria or practicability considerations preclude issuance of such a combined document.

Link Union Station Project

Combined Final Environmental Impact Statement/Record of Decision

Pursuant to:

National Environmental Policy Act (42 U.S.C. 4321 et seq.)
40 C.F.R. Parts 1500 – 1508, 64 Fed. Reg. 28545, 49 U.S.C. Section 303 and 23 U.S.C Section 327

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µPa	micropascals
AB	Assembly Bill
ACM	asbestos-containing material
ACS	American Community Survey
AD	anno domini
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
AGR	Agricultural Supply
AII	area of indirect impacts
AMSL	above mean sea level
APE	area of potential effect
AQMP	Air Quality Management Plan
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASTM	American Society for Testing and Materials
ATP	Archaeological Treatment Plan
BETP	Built Environment Treatment Plan
bgs	below ground surface
BMP	best management practice
BNSF	BNSF Railway
BP	before present
BSA	biological study area
btu	British thermal units
C&D	construction and demolition
ca.	circa
Cal/EPA	California Environmental Protection Agency
CALGreen	California Green Building Standards
Cal/OSHA	California Division of Occupational Safety and Health Administration
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASSP	Cornfield/Arroyo Seco Specific Plan
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife

CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	construction general permit
CGS	California Geological Survey
CH4	methane
CHC	Cultural Heritage Commission
CHSRA	California High-Speed Rail Authority
CLARTS	Central Los Angeles Recycling and Transfer Station
CMF	Central Maintenance Facility
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon monoxide equivalent
CP	control point
CPUC	California Public Utilities Commission
CREC	controlled recognized environmental condition
CRHR	California Register of Historical Resources
CRMMP	Cultural Resource Mitigation and Management Plan
CWA	Clean Water Act
D/C	demand-to-capacity
dB	decibel
dBA	A-weighted decibels
DCP	Downtown Community Plan
DHHS	Department of Health and Human Services
DPM	diesel particulate matter
DTSC	Department of Toxic Substance Control
EFC	Equity Focus Communities
EIA	Energy Information Administration
EIR	environmental impact report
EIS	environmental impact statement
EO	Executive Order
EPA	Environmental Protection Agency
EQ Zapp	California Earthquake Hazards Zone Application
ESA	Environmental Site Assessment
ESOC	Emergency Security Operations Center
FAQ	frequently asked question
FCAA	Federal Clean Air Act

FEMA	Federal Emergency Management Administration
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FR	Federal Register
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTE	full-time equivalent
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas
GWP	global warming potential
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
HREC	historic recognized environmental condition
HSR	high-speed rail
HVAC	heating, ventilating, and air conditioning
ID	identification
IED	improvised explosive devices
IGP	industrial general permit
IND	Industrial
IPaC	Information, Planning, and Consultation System
JPA	Joint Powers Authority
LABOE	City of Los Angeles Bureau of Engineering
LAC/USC	LA County/University of Southern California
LACOFD	Los Angeles County Fire Department
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
LAPD	City of Los Angeles Police Department
LASAN	Los Angeles Sanitation
LASD	Los Angeles County Sheriff's Department
LAUS	Los Angeles Union Station
LAUSHS	Los Angeles Union Station Historical Society
LAX	Los Angeles International Airport
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
LEP	limited-English proficiency
LID	low impact development
Link US	Link Union Station
L_{max}	maximum sound level
LOS	level of service
LOSSAN	Los Angeles-San Diego-San Luis Obispo
LUC	land use covenant
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
mgd	million gallons of water per day
MGP	Manufactured Gas Plant
MMRP	mitigation monitoring and reporting program
MOU	memorandum of understanding
MP	mile post
mpg	miles per gallon
MPO	metropolitan planning organization
MS4	municipal separate storm sewer systems
MT	metric tons
MUN	Municipal and Domestic Supply
MWD	Metropolitan Water District of Southern California
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NO	nitric oxide
NO_2	nitrogen dioxide
No.	number
NOI	notice of intent
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTSB	National Transportation Safety Board
O_3	ozone
OAERP	County of Los Angeles Operational Area Emergency Response Plan
OHP	Office of Historic Preservation
OHR	Office of Historic Resources

OHSA	Occupational Safety and Health Administration
OMM	offsetting mitigation measures
OWJ	officials with jurisdiction
PA	Programmatic Agreement
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
PROC	Industrial Process Supply
Project	Link Union Station Project
PTC	positive train control
RCP	reinforced concrete pipe
REC	recognized environmental condition
RIO	River Improvement Overlay District
ROG	reactive organic gas
RONA	Record of Non-Applicability
ROW	right-of-way
RSA	research study area
RSE	Resource 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
SCORE	Southern California Optimized Rail Expansion
SCRIP	Southern California Regional Interconnector Project
SCRRA or Metrolink	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategy
SEIR	Supplemental Environmental Impact Report
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SO_x	sulfur oxide
SoCalGas	Southern California Gas Company
SR	State Route

SurveyLA	City of Los Angeles Historic Resources Survey
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TAG	Transportation Assessment Guidelines
TCE	temporary construction easement
TDM	Transportation Demand Management
TMDL	total maximum daily load
TMP	Traffic Management Plan
TPH	total petroleum hydrocarbons
TRAC	Train Riders Association of California
TIRCP	Transit and Intercity Rail Capital Program
U.S.	United States
US-101	United States Highway 101
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
V/C	volume to capacity
VCE	vertical circulation elements
VdB	velocity decibel
VMT	vehicle miles traveled
VOC	volatile organic compound
WARM	Warm Freshwater Habitat
WEAP	Worker Environmental Awareness Program
WILD	Wildlife Habitat
WRP	Water Reclamation Plant
WSAB	West Santa Ana Branch
YOE	year-of-expenditure

Preface

The purpose of this environmental document prepared under the National Environmental Policy Act (NEPA) is to disclose information about a proposed project to decision makers and the public. While the science and analyses that support this Final Environmental Impact Statement (Final EIS) are complex, this document is intended for the general public. The Link Union Station (Link US) Project Final EIS has been prepared in accordance with Section 508 of the Rehabilitation Act of 1973, as amended, and the Web Content Accessibility Guidelines, as required under Section 11546.7 of the California Government Code.

Volume I of this Final EIS is organized into 11 chapters and this Executive Summary. Volume II of this Final EIS contains 20 technical appendices, including relevant engineering plans, Volume III provides the comments received on the Draft EIS/Supplemental Environmental Impact Report (EIR) as well as the responses to those comments, and Volume IV is the Record of Decision. This Executive Summary provides a comprehensive overview of all of the substantive chapters in the Final EIS, including the potential environmental impacts for each environmental resource topic (see Table ES-1 through Table ES-3).

What Has Changed?

Since the close of the 45-day public comment period for the Draft EIS/SEIR on August 9, 2024, CHSRA and Metro identified design variations that are part of the Build Alternative Design Option considered in the Final EIS, updated the estimated capital costs in the Final EIS, made minor revisions and added clarifications to the impact analysis based on comments received and recent changes in legislation, refined mitigation measures, and added new Offsetting Mitigation Measures (OMMs). Revisions in Volume I and II of the Final EIS that resulted from these changes are delineated with a track change vertical line located to the left of the text that was revised.

On October 23, 2025, Metro, as the CEQA lead agency for the Project, certified the Final SEIR and adopted CEQA Findings of Fact, a Statement of Overriding Considerations, and a Revised Mitigation Monitoring and Reporting Program. Because Metro has already certified the SEIR, it is intentionally excluded from this Final EIS.

What are the Next Steps in the Environmental Process?

CHSRA and Metro, in their capacity as NEPA co-lead agencies, issue a single document that consists of the Combined Final Environmental Impact Statement and Record of Decision (Combined Final EIS/ROD). The ROD describes the Project and the alternatives considered, describes the selected alternative, and identifies the environmentally preferable alternative (Preferred Alternative); makes environmental findings and determinations with regard to the Endangered Species Act, Section 106 of the NHPA, and Section 4(f) of the USDOT Act of 1966; publishes the FRA's air quality conformity determination pursuant to the Clean Air Act;; and identifies any required mitigation measures.

ES.0 Executive Summary

Since publication of the Link US Project Draft EIS/SEIR, the following changes have been made to this Executive Summary:

- A preface was added to introduce the Final EIS, summarize changes since the close of the 45-day public comment period for the Draft EIS/SEIR, and outline the next steps in the environmental process.
- Section ES.3 was added to describe the Build Alternative Design Option. After the close of the 45-day public comment period, Metro proposed design modifications to the Build Alternative (Build Alternative Design Option) including design variations, refinements, and reductions that are addressed in the Final EIS. The Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Final EIS Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the State Historic Preservation Officer (SHPO) and consulting parties as part of the Section 106 process related to historic preservation of Los Angeles Union Station (LAUS), and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.
- Section ES.4 and Table ES-0 were added to provide a summary of revisions and other editorial updates made between the Draft EIS/SEIR and Final EIS based on comments received during the public comment period, stakeholder and agency coordination activities, and other regulatory changes that occurred since publication of the Draft EIS/SEIR.
- Sections ES.3, Project Location and Study Area, was renumbered to Section ES.5 in the Final EIS based on the additional sections mentioned above.
- Section ES.4, High Speed Rail Design Accommodation Overlay, was renumbered to Section ES.6 in the Final EIS based on the additional sections mentioned above.
- Section ES.6, High Speed Rail Design Accommodation Overlay, of the Final EIS, was revised to clarify the definition of “HSR accommodation” in the Link US Project footprint.
- Section ES.5, Existing Conditions at Los Angeles Union Station, was renumbered to Section ES.7 in the Final EIS based on the additional sections mentioned above.
- Section ES.6, Project Alternatives and Design Options – Summary Overview, was renumbered to Section ES.9 in the Final EIS based on the additional sections mentioned above.
- Section ES.7, Project Purpose and Need, was renumbered to Section ES.8 in the Final EIS.

- Section ES.8, Anticipated Agency Involvement, was renumbered to Section ES.10 in the in the Final EIS based on the additional sections mentioned above.
- Section ES.9, Anticipated Permits, Discretionary Actions, and Agency Approvals, was renumbered to Section ES.11 in the Final EIS based on the additional sections mentioned above.
- Section ES.10, Summary of Effects and Mitigation Measures, was renumbered to Section ES.12 in the Final EIS based on the additional sections mentioned above.
- Section ES.11, Unavoidable Adverse Effects, was renumbered to Section ES.13 in the Final EIS based on the additional sections mentioned above.
- Section ES.11.2, California Environmental Quality Act Supplemental Environmental Impact Report, was removed because this Final EIS no longer includes the SEIR.
- Section ES.12, Summary of Project Benefits, was renumbered to Section ES.14 in the Final EIS based on the additional sections mentioned above.
- Section ES.13, Areas of Controversy, was renumbered to Section ES.15 in the Final EIS based on the additional sections mentioned above.
- Section ES.14, Public Circulation and Review, was renumbered to Section ES.16 in the Final EIS based on the additional sections mentioned above.
- Section ES.15, Identification of Preferred Alternative, was renumbered to Section ES.17 in the Final EIS based on the additional sections mentioned above.
- Section ES.16, California High-Speed Rail Authority Decision-Making, was renumbered to Sections ES.18 in the Final EIS based on the additional sections mentioned above.
- Section ES.17, Federal Railroad Administration Decision-Making, was renumbered to Section ES.19 in the Final EIS based on the additional sections mentioned above.
- Section ES.18, Environmental Justice Determination, was removed in the Final EIS.
- Section ES.19, Section 4(f)/6(f) Determination, was renumbered to Section ES.20 in the Final EIS based on the additional sections mentioned above.
- Section ES.9.4, Build Alternative Design Option, was added in the Final EIS to clarify the distinction between the Build Alternative and the Build Alternative Design Option.
- Section ES.10.3 Malabar Yard Railroad Improvements – CEQA Determinations was removed because this Final EIS is solely a NEPA document.
- Section ES.12.3, Offsetting Mitigation Measures in Response to Community Input, was added to the Final EIS to summarize the additional measures that would be required upon implementation of the Build Alternative and the Malabar Yard railroad improvements and how the measures were developed through engagement with the Housing Authority of the City of Los Angeles (HACLA) and the City of Vernon after the close of the Draft EIS/SEIR 45-day public review period.

- Section ES.16 (previously Section ES.14 in the Draft EIS/SEIR) was updated to provide information on the publication and public review of the Draft EIS/SEIR. A new subsection, ES.16.1, summarizes comments received during the public comment period. Additionally, Section ES.16.2 was added to describe stakeholder engagement activities conducted after the close of the Draft EIS/SEIR public comment period.
- Section ES.17 (previously Section ES.15 in the Draft EIS/SEIR) was updated to identify the Preferred Alternative as the Build Alternative that includes Rail Yard Canopy Design Options 1 and 2 and the Build Alternative Design Option.
- Section ES.18 (previously ES.16 in the Draft EIS/SEIR) was revised to acknowledge CHSRA will consider issuing a Final EIS or a Combined Final EIS/Record of Decision. Section ES.18 also added text to introduce Table ES-3, Potential Effects Comparison of Build Alternative to Build Alternative Design Option.
- Table ES-2, which summarized CEQA determinations for the changed circumstances in the Draft EIS/SEIR, was removed because this Final EIS no longer includes the SEIR.
- Table ES-3 of the Draft EIS/SEIR was renumbered to Table ES-2 in the Final EIS based on the removed table mentioned above.
- Table ES-4, which summarized the CEQA analysis for the Malabar Yard railroad improvements in the Draft EIS/SEIR, was removed because this Final EIS is solely a NEPA document.
- Table ES-1 and ES-2 (previously Table ES-3 in the Draft EIS/SER) were updated to include the NEPA effect determinations for Construction, Operations, and Indirect for informational purposes. Minor revisions to the impact analysis and other editorial updates were made to these tables based on other edits made to the EIS/SEIR documentation between the Draft EIS/SEIR and Final EIS and are described below:
    - Table ES-1, Summary of NEPA Analysis for the Build Alternative
        - Land Use and Planning - Minor revisions were made to the text of Mitigation Measure TR-1 to add Los Angeles Unified School District (LAUSD) as a coordinating party. Minor revisions were also made to the text of Mitigation Measure AES-1 to include text requested by HACLA regarding maintenance of the sound walls at William Mead Homes and Care First Village.
        - Transportation – A summary of beneficial effects for public transit was added to the operations and indirect analysis for Topic 3.3-D consistent with Draft EIS/SEIR Section 3.3, Transportation. Mitigation Measure TR-3 was revised in accordance with two Board Motions adopted by the Metro Board during its October 23, 2025 meeting. These motions require enhanced collaboration between the City of Vernon, Metro, CHSRA, and BNSF.
        - Visual Quality and Aesthetics – A minor revision was made to the operations analysis in Table ES-1 to recognize the beneficial effect at Visual Assessment Unit #6 for Topic 3.4-A consistent with Draft EIS/SEIR Section 3.4, Visual Quality and

Aesthetics. Minor revisions were also made to the text of Mitigation Measures AES-2 through AES-3.

- Table ES-2, Summary of NEPA Analysis for the Malabar Yard Railroad Improvements
  - Land Use and Planning – Minor revisions were made to the text of Malabar Yard Mitigation Measure TR-1 to add LAUSD as a coordinating party and to remove City of Vernon as a responsible party.
  - Transportation – Minor revisions were made to the impact analysis for Topic 3.3-B to remove the acknowledgement of two separate sets of gate arms on Seville Avenue introducing the potential roadway safety hazard. This project feature was removed from the Malabar Yard railroad improvements after the close of the Draft EIS/SEIR 45-day public comment period.
  - Transportation - Revised Malabar Yard Mitigation Measure TR-6 to remove reference to the Final EIS.
  - Air Quality and Global Climate Change – Clarifications were made to the indirect effects conclusions for Topics 3.5-A and 3.5-B to acknowledge the beneficial indirect effect from reduced train movements on the Harbor Subdivision (west side of City of Vernon).
  - Noise and Vibration - Clarifications were made to the indirect effects conclusion for Topics 3.6-A and 3.6-B to acknowledge the beneficial indirect effect from reduced train movements on the Harbor Subdivision (west side of City of Vernon).
  - Biological and Wetland Resources – Corrections were made to the impact analysis for Topic 3.7-B and Malabar Yard Mitigation Measure BIO-2 to cite the City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees).
- Revised multiple instances to acknowledge the community analysis performed.
- Revised Footnote 1 text to reflect the latest Council on Environmental Quality actions.

ES.1 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro), as the owner of the Los Angeles Union Station (LAUS), is proposing the Link Union Station (Link US) Project (Project or proposed action) to address the capacity constraints at LAUS.

ES.2 NEPA Lead Agency

At the time of the Project scoping (May 2016), Federal Railroad Administration (FRA; while still the National Environmental Policy Act [NEPA] lead agency) and Metro, acting as the CEQA lead agency and Project sponsor, intended to prepare a joint environmental impact statement (EIS)/environmental impact report (EIR) for the Project pursuant to California Code of Regulations (CCR), Title 14, Division 6, Chapter 3 (California Environmental Quality Act [CEQA] Guidelines); Section 15222 (“Preparation of Joint Documents”); and 40 Code of Federal Regulations (CFR)

Sections 1506.2 and 1506.4 (2016)[1] (authority for combining federal and state environmental documents). The FRA published the Notice of Intent (NOI) for the Project in the *Federal Registe*r (FR) on May 31, 2016.

In November 2017, California High-Speed Rail Authority (CHSRA), in partnership with the California State Transportation Agency (CalSTA), submitted a draft application to FRA to assume the federal environmental review responsibilities under NEPA and other federal environmental laws (NEPA Assignment). On May 2, 2018, FRA published the final application for NEPA assignment and draft memorandum of understanding (MOU) in the *Federal Register*. The 30-day public comment period closed June 1, 2018. Pursuant to the final MOU dated July 23, 2019, between FRA and the State of California, Metro is the Project sponsor and joint NEPA lead agency. The MOU is authorized by 23 United States Code (USC), Section 327 through the Surface Transportation Project Delivery Program, otherwise known as NEPA Assignment. The MOU assigned to the State of California, acting through CHSRA, most responsibilities under NEPA and other federal environmental laws for projects needed to support the design, construction, and operation of the planned high-speed rail (HSR) system. The MOU also assigned projects that directly connect to stations for the planned HSR system, including the Project. The final MOU dated July 23, 2019, between FRA and the State of California, was renewed July 22, 2024.

In October 2018, Metro, acting as the CEQA lead agency for the Project, elected to prepare a standalone EIR for the Project in compliance with CEQA. Metro certified the Final EIR on June 27, 2019 (State Clearinghouse No. 2016051071), and on October 28, 2021, Metro approved CEQA Addendum No.1 to the Final EIR. This Final EIS incorporates by reference the previously certified Final EIR and CEQA Addendum No. 1 to the Final EIR for the Link Union Station Project. The complete Final EIR, technical appendices, and CEQA Addendum No. 1 to the Final EIR for the Link Union Station Project may be downloaded from:

https://www.dropbox.com/scl/fo/q51hz0past461qn8pk0eb/ABJAsL7gEl2u_VNcXf1hMtU/Reports/CEQA/Final%20EIR?dl=0&rlkey=hqfq2hbh6t5ki1vh74bwqlazr&subfolder_nav_tracking=1

In October 2019, CHSRA and Metro began preparation of a standalone Draft EIS for the Project. In September 2020, in response to the potential need for railroad improvements at Malabar Yard in the City of Vernon, CHSRA issued a Revised NOI to initiate additional scoping and solicit additional public and agency input regarding the development of the Draft EIS for the Project. In December 2022, Metro elected to prepare a CEQA Supplemental EIR (SEIR) to disclose to decision makers, public agencies, and the general public the minor additions or changes (referred to as changed circumstances) that have occurred since certification of the Final EIR on June 27,

[1] The Council on Environmental Quality (CEQ) has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the California High-Speed Rail Authority (CHSRA) is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

2019, and subsequent approval of CEQA Addendum No. 1 and adoption of the Revised Mitigation Monitoring and Reporting Program (MMRP) on October 28, 2021.

In April 2023, CHSRA and Metro agreed to prepare a joint EIS/SEIR.

- The EIS documents the baseline conditions that describe the affected environment, identifies the regulatory context for project implementation, discusses the context and intensity of potential environmental effects, and outlines measures to reduce the magnitude of potential adverse effects. The NEPA EIS also identifies the measures CHSRA and Metro have taken to demonstrate compliance with applicable federal, state, and local environmental laws and regulations, including but not limited to, Section 106 of the National Historic Preservation Act (NHPA); Clean Water Act (CWA); Federal Clean Air Act (FCAA); Section 4(f) of the Department of Transportation Act of 1966; Endangered Species Act; Executive Order (EO) 11990, Protection of Wetlands; EO 11988 and United States Department of Transportation (USDOT) Order 5650.2 on Floodplain Management and Protection; and applicable County and City of Los Angeles and City of Vernon ordinances/codes.
- Pursuant to CEQA Guidelines Section 15163(b), the SEIR contains the necessary information to make the previous EIR adequate for the Project, as revised. Based on the nature of the changed circumstances, including but not limited to, the changes associated with the Modified Proposed Project and subsequent refinements made after the close of the 45-day public comment period (synonymous with NEPA Build Alternative Design Option considered in the Final EIS), the SEIR includes an evaluation of only the environmental topics that apply in the changed situation (CEQA Guidelines Section 15163[a][2]). The SEIR is a standalone chapter in the Draft EIS/SEIR and was circulated to agencies and the public as a joint document.

ES.3 Summary of Proposed Design Modifications (Build Alternative Design Option)

The Draft EIS/SEIR was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024, pursuant to CEQA Guidelines Section 15105 and NEPA 40 Code of Federal Regulations (CFR) 1502.19. After the close of the 45-day public comment period, Metro proposed design modifications to the Build Alternative (Build Alternative Design Option) including design variations, refinements, and reductions that are addressed in the Final EIS.

The Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Final EIS Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the SHPO and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the

magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.

These design modifications that are part of the Build Alternative Design Option qualify as a minor variation of the Build Alternative because the variations reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of Project-related environmental effects, and would not substantially alter the overall environmental effects of the Build Alternative previously identified. The Build Alternative Design Option could be selected for approval by decision makers upon review and consideration of the content in Final EIS Chapter 9 and the remainder of the Final EIS.

The design modifications associated with the Build Alternative Design Option are summarized below:

- ***Retaining the Existing Vignes Street Bridge Instead of Replacing it –*** The Build Alternative Design Option does not require replacement of the Vignes Street Bridge because a run-through track alignment with 8 total run-through tracks requires a reduced raise of the rail yard. The Build Alternative Design Option does maintain space for a future sixth lead track in the throat area. In conjunction with the removal of Garden Tracks, the throat tracks supported by the Vignes Street Bridge would be configured to accommodate space for one new lead track over the existing bridge. South of the Vignes Street Bridge, the westernmost lead tracks through the throat area would be raised to tie into the raised platforms and associated Tracks 3 through 10 at the LAUS Rail Yard.
- ***Fewer Raised Platforms and Reduced Extent of Elevated Rail Yard*** – The Build Alternative Design Option would include an elevated rail yard; however, only four platforms would be raised nine feet to twelve feet higher than the existing condition, instead of six platforms raised to 15 feet as previously proposed. Platforms 2 through 5 and eight corresponding platform tracks (Tracks 3 to 10) would be raised as part of the Build Alternative Design Option. The reduced extent of the elevated rail yard would still allow for the connecting run-through track viaduct to meet vertical clearance requirements for the El Monte Busway and US-101 (16.5 feet minimum vertical clearance per Caltrans standards). The platform and track allocation for the Build Alternative Design Option would be modified because Platforms 2 and 5 would be allocated for SCRRA and Amtrak for regional/intercity rail trains and Platforms 3 and 4 (and Tracks 5 through 8) would be allocated to CHSRA for CHSRA HSR trains – Platforms 3 and 4 would be constructed to meet level-boarding requirements. Platforms 6 and 7 would remain at existing grade with stub-end tracks and would continue to be allocated for SCRRA and Amtrak long distance trains.
- The reduced extent of the elevated rail yard as part of the Build Alternative Design Option also decreases the length required for the elevated rail yard. As discussed above, lead tracks through the throat area would begin south of the Vignes Street Bridge thereby allowing for the existing Vignes Street Bridge to remain in place.

- ***Partial Reconstruction of Cesar Chavez Avenue Bridge*** – The Build Alternative Design Option would include partial reconstruction of the portion of the existing railroad bridge over Cesar Chavez Avenue, instead of a full reconstruction as previously proposed. As the rail yard would only be partially elevated, only the western portion of the bridge that would support the four new platforms is required to be reconstructed.
- ***Reduced Extent of Concourse-Related Improvements*** – The Build Alternative Design Option would include several reductions to the extent of concourse-related improvements, as summarized below.
    - *Removal of West Plaza and West Plaza Canopy* – The West Plaza, as well as modifications to the baggage handling operations and ticketing services within the Amtrak building, would be removed as part of the Build Alternative Design Option. No modifications to the exterior loading dock or parking area outside of the Amtrak building would be required.
    - *Reduced Width of Expanded Passageway* – The width of the expanded passageway would be 100-feet-wide for the Build Alternative Design Option instead of 140-feet-wide, as previously proposed.
    - *Reduced Canopy Coverage and Change in Type* – Removal of the West Plaza would no longer require canopy coverage for this area. As part of the Build Alternative Design Option, individual canopies would extend up to 25 feet above the 4 new platforms. Rail Yard Canopy Design Option 2 (Grand Canopy over Rail Yard) is not feasible to be implemented in conjunction with the Build Alternative Design Option because all platforms would be required to be raised to support a Grand Canopy. Furthermore, the Grand Canopy was planned to connect to the West Plaza Canopy, which was also removed from the Build Alternative Design Option.
- ***Fewer Run-Through Tracks on Single Aerial Viaduct from LAUS to West Bank of Los Angeles River*** – The Build Alternative included 10 run-through tracks for regional/intercity trains and HSR trains and the Build Alternative Design Option would include 8 run-through tracks for regional/intercity trains and HSR trains. As part of the Build Alternative Design Option, a single aerial viaduct would support the run-through tracks, instead of a combination of viaducts and retained fill embankments as previously proposed. The single aerial viaduct would extend from LAUS, over US-101, north Commercial Street, over Center Street, and over the lowered Amtrak lead track before transitioning to a retained fill section at the Burlington Northern Santa Fe (BNSF) West Bank Yard. With fewer run-through tracks, the corresponding width of the portion of the viaduct over US-101 has been substantially reduced from 205-feet-wide as previously proposed to 75-feet-wide as currently proposed.
- South of the elevated platforms at LAUS, the 8 run-through tracks would converge to 4 run-through tracks on the portion of the viaduct that extends over US-101. The run-through tracks would converge again to 2 run-through tracks on the portion of the viaduct west of Center Street.

- The Build Alternative Design Option still accommodates 4 run-through tracks for HSR trains that would be available for northbound/southbound bidirectional CHSRA operations at LAUS. Similarly, 4 run-through tracks for regional/intercity trains would accommodate northbound/southbound bidirectional operations.

As discussed more in detail in Section 9.9, the Build Alternative Design Option would result in less construction-related activities as compared to the Build Alternative. The reduction in the scope and scale of infrastructure is related to the following components:

1. Retaining the existing Vignes Street Bridge instead of replacing it (one less bridge reconstructed),
2. Fewer platforms raised with narrower passageway under partially elevated LAUS rail yard,
3. Partial reconstruction of the Cesar Chavez Avenue Bridge (western extent only),
4. Reduced extent of concourse-related improvements, and
5. Fewer run-through tracks on a narrower single aerial viaduct from LAUS to the West Bank of the Los Angeles River (2 fewer run-through tracks).

Table 9-14 in Chapter 9 of the Final EIS provides a summary of the NEPA effect determinations for each environmental topic area for the Build Alternative, as well as NEPA effect determinations for the Build Alternative Design Option. A comparative evaluation that demonstrates the reduced magnitude and intensity of effects of the Build Alternative Design Option is also provided in Table 9-14 in Chapter 9 of the Final EIS.

ES.4 Summary of Changes Between Draft EIS/SEIR and Final EIS

The public comment period for the Link US Project began on June 21, 2024, and ended on August 9, 2024. A total of 140 speaker cards, comments cards, email or online comments, and letters were received from 7 agencies, 9 organizations, and 123 individuals. Comments were received verbally at the Public Hearing, and via email, regular mail, online comment form, written comment cards, and the Project hotline. Metro delineated them and responded to the 479 specific comments. CHSRA and Metro reviewed all comments received and continued to consult with regulatory agencies organizations, and members of the public to resolve various concerns and comments raised.

These comments and consultations resulted in revisions and updates to the Draft EIS/SEIR documentation including refinement of proposed mitigation measures. Revisions that were made within Volume I and Volume II of the Final EIS are summarized in Table ES-0. Other minor editorial and grammatical updates are also reflected in the Final EIS documentation in addition to the changes noted in Table ES-0.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Volume I, Final EIS	
Executive Summary	
ES.0, Pages ES-iii through ES-v	All changes to the Executive Summary are discussed above in ES.0.
Chapter 2.0, Alternatives and Design Options Considered	
Section 2.1, Page 2-1	Added text to clarify the distinction between the Build Alternative and the Build Alternative Design Option.
Section 2.1, Pages 2-1 and 2-2	Added text to describe why Metro proposed design modifications to the track alignment alternative after the close of the 45-day public comment period.
Section 2.1.1, Page 2-2	Added text to describe why Track Alignment Alternative Screening Criteria 1 was modified from pass/fail (Yes or No) to no-longer-pass/fail.
Section 2.1.4, Page 2-21	Added text to denote the Track Alignment Alternative 14 and Concourse Concept 6 was recommended for detailed evaluation in the EIS.
Section 2.1.5, Pages 2-21 through 2-24	Added new section to describe the Build Alternative Design Option relative to other track alignment alternatives considered.
Section 2.2, Page 2-24	Revised text to add end-to-end distance from Main Street to First Street.
Section 2.3, Page 2-27	Revised text to remove “as part of the Full Build-Out with HSR Condition” to include it within the Full Build-Out Condition, so it reflects the analysis more precisely.[2] Additionally, added sentence to note the Link US Project footprint also accommodates the space required for installation of overhead catenary system (OCS) poles and other HSR related utility improvements.

[2] In the Final EIS, the word "future" was removed as a description of HSR operations because HSR operation will begin within the time horizon analyzed in the Final EIS.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.4, Page 2-28	Revised text to remove multiple references to full build-out with HSR condition.
Section 2.4, Page 2-28	Revised text in Common Rail Infrastructure call-out box.
Section 2.4, Pages 2-28 through 2-30	Revised text to clarify how the interim condition and full build-out condition are considered and added text to include reference to Section 2.3.
Section 2.4.1, Page 2-28	Revised subsection header and text to clarify that Interim Condition is also referred to as Phase A.
Section 2.4.1, Page 2-29	Added text to clarify the tracks would continue past First Street.
Section 2.4.2, Page 2-30	Revised subsection header and text to clarify that the Full Build-Out Condition is also referred to as Phase B.
Section 2.4.2, Page 2-30	Revised text of last bullet to describe how the run-through tracks would merge into a minimum of four tracks on the US-101 viaduct and would merge again with the two run-through tracks through First Street.
Section 2.4.2, Page 2-31, Figure 2-2	Revised Figure to update the legend to remove text referring to Full Build-Out with HSR Condition.
Section 2.4.2, Pages 2-33 and 2-35, Figure 2-3 and Figure 2-4	Revised Figures to depict the correct number of run-through tracks in the Interim Condition or the Full Build-Out Condition.
Section 2.6, Page 2-38	Revised footnote text to reflect the latest Council on Environmental Quality actions.
Section 2.6.2, Page 2-41	Revised text to clarify how the Metro LA River Path Project is funded and when the Metro Los Angeles Aerial Rapid Transit Project was funded.
Section 2.6.2, Page 2-41 through 2-43	Revised text to update Project Status for Other Planned Projects and Infrastructure improvements.
Section 2.7.1, Pages 2-53 and 2-55, Figure 2-7	Revised Map 2 of 5 and Map 3 of 5 to update the legend to remove text referring to the Full Build-Out with HSR Condition.
Section 2.7.1, Page 2-61	Revised text on lead track configuration flexibility for consistency with Chapter 9.0 for the Build Alternative Design Option.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.7.1, Page 2-61	Revised text to clarify HSR trains would share two compatible lead tracks.
Section 2.7.1, Pages 2-61 through 2-73	Revised text to remove multiple references to full build-out with HSR condition, including in the figure titles for Figure 2-8 and Figure 2-10.
Section 2.7.1, Page 2-67, Table 2-5	Revised table to remove references to the Full Build-Out with HSR condition.
Section 2.7.1, Page 2-73	Revised text for consistency with Chapter 9.0 for the Build Alternative Design Option under Run-Through Tracks subsection.
Section 2.7.1, Page 2-74, Figure 2-15	Revised Figure to remove Full Build-Out with HSR Condition and add “with HSR Trains depicted”.
Section 2.7.1, Page 2-80	Revised text to remove references to the Full Build-Out with HSR condition.
Section 2.7.1, Page 2-83, Figure 2-22	Revised Figure 2-22 to remove text from the graphic.
Section 2.7.1, Page 2-84	Added FRA as an approving agency.
Section 2.7.1, Page 2-84	Updated text to remove the proposed North Main Street safety improvements to remove the median after comments were received during the 45-day public comment period.
Section 2.7.1, Pages 2-85	Added text to acknowledge further coordination with Metro staff to include Measure HLA (Healthy Streets LA) of the City of Los Angeles’ *Mobility Plan 2035*.
Section 2.7.1, Page 2-87, Figure 2-23	Revised Figure 2-23, “Safety Improvements at the North Main Street At-Grade Public Crossing”, to align with design modifications to the proposed safety improvements made in responses to public comments received.
Section 2.8, Pages 2-90 and 2-91	Added new section to include a summary of the Build Alternative Design Option with reference to Chapter 9.0 of this Final EIS that provides a detailed description of the modifications/reductions associated with the Build Alternative Design Option.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.9, Pages 2-91	Removed description of CEQA Modified Proposed Project to refer reader to the Final SEIR certified by the Metro Board of Directors on October 23, 2025.
Section 2.10, Page 2-91, Table 2-6	Revised Table 2-6 to add one additional parcel (APN: 5409-013-915) to the list of non-Metro-owned potentially affected parcels where a potential acquisition (partial) may be required to implement the North Main Street Safety Improvements.
Section 2.10, Page 2-93, Figure 2-25	Revised Figure 2-25, “Non-Metro-Owned Potentially Affected Parcels”, to include additional parcel (APN: 5409-013-915).
Section 2.11, Page 2-95	Revised Project cost estimate with footnote added as to what was reported in the Draft EIS/SEIR.
Section 3.1, Introduction to the NEPA Analysis	
Section 3.1, Page 3.1-1	Revised footnote text to reflect the latest Council on Environmental Quality actions.
Section 3.1.2, Page 3.1-5	Added text to clarify that the Link US Project footprint is large enough to include common rail infrastructure and additional infrastructure elements that CHSRA requires to operate its HSR system.
Section 3.1.4, Page 3.1-10	Revised bulleted list to remove "Full Build-Out with HSR Condition:" and move the rest of the bullet to the prior bullet.
Section 3.1.6, Page 3.1-20	Revised text to remove multiple references to “the full build-out with HSR condition”.
Section 3.1.8, Page 3.1-22	Added new Section to acknowledge the EIS incorporates by reference the previously certified Final EIR for the Project (State Clearinghouse No. 2016051071) and CEQA Addendum No. 1 to the Final EIR.
Section 3.2, Land Use and Planning	
Section 3.2, Page 3.2-1	Revised footnote text to reflect the latest Council on Environmental Quality actions.
Section 3.2, Pages 3.2-28 and 3.2-29, Topic 3.2-D	Added text to acknowledge the conflict with three goals and one policy of the California Transportation Plan 2040.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.3, Transportation	
Section 3.3.4, Page 3.3-27	Revised text to reflect that BNSF West Bank Yard can accommodate up to an 8,000-foot-long trainset.
Section 3.3.5, Page 3.3-64, Topic 3.3-E	Added text to acknowledge the San Bernardino Subdivision is heavily congested.
Section 3.3.5, Page 3.3-64, Topic 3.3-E	Revised text to remove "the full build-out with HSR condition".
Section 3.3.6, Page 3.3-69, Topic 3.3-E	Added text to clarify the implementation timeframe for Malabar Yard Railroad improvements shall be mutually agreed upon by Metro, CHSRA, City of Vernon and BNSF.
Section 3.3.6, Page 3.3-70	Revised Mitigation Measure TR-1 to add Los Angeles Unified School District as a coordinating party.
Section 3.3.6, Page 3.3-71	Revised Mitigation Measure TR-3 in accordance with two Board Motions adopted by the Metro Board during its October 23, 2025 meeting.
Section 3.3.7, Page 3.3-76, Table 3.3-17	Added text to correct the NEPA Impact Summaries and acknowledge Mitigation Measure LU-1 applies to Topic 3.3-D: Public transit, bicycle, or pedestrian facilities.
Section 3.3.7, Pages 3.3-77 and 3.3-78, Table 3.3-17	Revised Mitigation Measure TR-3 title to remove compensatory mitigation to BNSF.
Section 3.4, Visual Quality and Aesthetics	
Section 3.4.6, Pages 3.4-73 and 3.4-74	Revised Mitigation Measure AES-1 to add provisions regarding maintenance of sound walls.
Section 3.4.7, Page 3.4-77, Table 3.4-11	Added text to correct the NEPA Impact Summaries and acknowledge beneficial effects for Topic 3.4-A: Visual Character or Quality.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.5, Air Quality and Global Climate Change	
Section 3.5.2, Page 3.5-1	Added text to acknowledge the analysis performed for Air Quality and Global Climate Change was completed prior to the issuance of recent federal 2025 EOs and regulatory directions.
Section 3.5.2, Page 3.5-2	Revised Footnote 1 to note that CEQ later withdrew that 2023 guidance.
Section 3.5.2, Pages 3.5-2 through 3.5-3, Table 3.5-1	Revised multiple instances of community analysis-related terminology throughout Table 3.5-1.
Section 3.5.2, Pages 3.5-4 and 3.5-5, Table 3.5-1	Revised Table 3.5-1 to include a description of the following: • EO 14154 Unleashing American Energy (2025), the interim final rule, published on February 25, 2025 and effective April 11, 2025, that rescinds CEQ regulations. • Withdrawal of NEPA Guidance on Consideration of GHG Emissions and Climate Change, 90 Fed. Reg. 22,472 (May 28, 2025). • Jeffrey Bossert Clark, Jr., Acting Administrator Office of Information and Regulatory Affairs, Mem. for Regulatory Policy Officers at Depts. and Agencies and Managing and Executive Directors of Commissions and Boards (May 5, 2025), who implemented Section 6 of EO 14154. It provides guidance on rulemaking and also requires agencies, when approving permits to "provide the minimal greenhouse gas analysis and consideration necessary for agencies to comply with statutory requirements." • Assembly Bill 617
Section 3.5.2, Page 3.5-10, Table 3.5-2	Added text to acknowledge the national annual $PM_{2.5}$ standard that changed in May 2024.
Section 3.5.3, Page 3.5-14	Revised text to refer readers to the updated health risk assessment methodology in the Final SEIR certified by the Metro Board of Directors on October 23, 2025.
Section 3.5.5, Page 3.5-27, Topic 3.5-A	Revised text to refer readers to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025 and Appendix Q of the Final EIS, as opposed to referring the reader to the Final EIR Appendix H.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.5.5, Page 3.5-31, Topic 3.5-A	Revised text to remove “by 2026”.
Section 3.5.5, Page 3.5-34, Topic 3.5-A	Revised text to refer readers to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025.
Section 3.6, Noise and Vibration	
Section 3.6	Revised all references to the Link US Rail Planning Memorandum to Appendix C instead of Appendix B and revised all references to the Traffic Impact Assessment to Appendix E instead of Appendix D.
Section 3.6.3, Page 3.6-4	Added text to note potential increases in noise and vibration from HSR operations are not factored into the Project’s impact analysis or the overall impact assessment determination for the Project.
Section 3.6.3, Page 3.6-5	Added text to clarify that the operational noise assessment is based on the Build Alternative and the Rail Yard Canopy Design Option 1 – Individual Canopies over Rail Yard.
Section 3.6.6, Page 3.6-78	Revised Mitigation Measure NV-1 to add timing provisions for construction of the sound walls.
Section 3.6.7, Page 3.6-87, Table 3.6-16	Added text to acknowledge Mitigation Measure NV-2 applies to Topic 3.6-B: Groundborne vibration and Groundborne noise levels.
3.7 Biological and Wetland Resources	
Section 3.7.6, Page 3.18-17 and Page 3.17-18	Revised Mitigation Measure BIO-1 and BIO-2 to add “Metro and/or.”
Section 3.10, Hazardous Waste and Materials	
Section 3.10.4, Page 3.10-25	Revised text to further describe the tracks at Keller Yard, adding “specifically SCRRA West Bank tracks MT-3, MT-4, and the Amtrak Roundhouse Lead. The Build Alternative does not include modifications to the Keller Yard storage tracks.”

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.10.6, Page 3.10-43	Revised Mitigation Measure HAZ-3 to remove and add “prior.”
Section 3.12, Cultural and Paleontological Resources	
Section 3.12.4, Page 3.12-81	Revised two instances from "key contributing elements” to be "character-defining features".
Section 3.12.4, Page 3.12-93	Revised text from "contributing features” to be "character-defining features".
Section 3.12.5, Page 3.12-108	Revised text to remove “draft” and replace with “final”.
Section 3.13, Economic and Fiscal Impacts	
Section 3.13.3, Page 3.13-4	Revised Phase A (Interim Condition) cost estimate to $1.93 billion.
Section 3.13.3, Page 3.13-4	Added Footnote 2 to clarify the cost estimate that was included in the Draft EIS/SEIR.
Section 3.13.5, Page 3.13-8, Table 3.13-3	Revised Table and supporting text to update the summary of capital expenditure costs for the Build Alternative.
Section 3.13.5, Page 3.13-9, Table 3.13-4	Revised Table and supporting text to update the direct (capital spending), indirect (supply-chain spending), induced (employee spending), and total impacts.
Section 3.13.5, Page 3.13-10, Topic 3.13-A	Revised text to remove "full build-out with" and add "starts operation".
Section 3.13.7, Page 3.13-18	Revised text to update the capital expenditure costs for the Build Alternative for construction.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.14, Safety and Security	
Section 3.14.5, Page 3.14-24, Topic 3.14-A	Removed sentence referring to the full build-out with HSR condition.
Section 3.15, Socioeconomics and Communities Affected	
Section 3.15	Revised multiple instances of community analysis-related terminology throughout the Section and to acknowledge the community analysis performed for the Project.
Section 3.15.3, Page 3.15-11	Revised footnote text to reflect the latest Council on Environmental Quality actions.
Section 3.15.4, Page 3.15-17, Figure 3.15-2	Revised Figure 3.15-2 to include Hiroshima Kenji-Kai of SoCal (#50) and the Japanese Evangelical Missionary Society (#51).
Section 3.15.5, Page 3.15-40	Revised Phase A (Interim Condition) cost estimate to $1.93 billion and updated supporting text to describe the short-term economic impacts related to job-years generated (33,526 job-years).
Section 3.15.7, Page 3.15-49, Table 3.15-17	Added text to Table 3.15-17 to correct the NEPA Impact Summaries and acknowledge beneficial effects for Topic 3.15-D: Business displacements and the economy.
Section 3.15.7, Pages 3.15-51 through 3.15-73, Table 3.15-18	Revised Table 3.15-18 as follows: • Land Use and Planning – Revised Malabar Yard Mitigation Measure TR-1 to add Los Angeles Unified School District as a coordinating party and to remove City of Vernon as a responsible party. • Transportation – Revised impact analysis for Topic 3.3-B to remove the acknowledgement of two separate sets of gate arms on Seville introducing safety hazard. This project feature was removed from the Malabar Yard railroad improvements after the close of the 45-day public comment period. • Air Quality and Global Climate Change – Revised the indirect effects conclusions for Topics 3.5-A and 3.5-B to acknowledge the beneficial indirect effect from reduced train movements on the Harbor Subdivision. • Noise and Vibration – Revised the indirect effects conclusion for Topics 3.6-A and 3.6-B to acknowledge the beneficial indirect effect from reduced train movements on the Harbor Subdivision.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
	• Biological and Wetland Resources – Revised impact analysis for Topic 3.7-B and Malabar Yard Mitigation Measure BIO-2 to cite the City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees).
Section 3.15.7, Page 3.15-49, Table 3.15-17	Revised Mitigation Measure TR-3 title to remove compensatory mitigation to BNSF.
Section 3.16, Cumulative Effects	
Section 3.16	Revised multiple instances of community analysis-related terminology throughout the Section and to acknowledge the community analysis performed for the Project.
Section 3.16, Page 3.16-1	Revised footnote text to reflect the latest Council on Environmental Quality actions.
Section 3.16.4, Page 3.16-9, Table 3.16-2	Removed the following text, “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.”
Section 3.16.4, Page 3.16-14, Table 3.16-2	Revised Table 3.16-2 to acknowledge the certified Final Program EIR for the Vernon Westside Zone Change and Plan Amendment.
Section 3.16.4, Page 3.16-39	Removed text that stated HSR operational noise and vibration was addressed in the direct impact analysis.
Section 3.16.4, Page 3.16-46	Revised text to refer to the City of Vernon’s Tree Ordinance.
Section 3.16.4, Page 3.16-83	Added the Arts District and Southern Industrial District to the bulleted list of communities.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Chapter 4.0, Community Analysis	
Chapter 4.0	Revised multiple instances of community analysis-related terminology throughout the Chapter and to acknowledge the community analysis performed for the Project.
Section 4.2, Pages 4-4 and 4-5	Added Executive Orders 14148, 14154, 14173, and 14224 to the regulatory framework.
Section 4.3.6, Page 4-9	Added text to describe the evaluation for determining disproportionate and adverse effects on minority communities, low-income communities, and non-minority communities.
Section 4.4, Page 4-10	Revised text to describe how public outreach to affected communities has been and will continue to be conducted as part of Metro and CHSRA's decision making process.
Section 4.4.2, Page 4-12	Added text to describe the public outreach conducted in predominantly minority communities, to predominantly non-minority communities to predominantly low-income communities, and to predominantly non-low-income communities.
Section 4.4.2, Pages 4-14 through 4-16, Table 4-1	Updated meetings held in 2024 and 2025 with stakeholders and community groups.
Section 4.4.2, Pages 4-17 through 4-25, Table 4-2	Added text in Table 4-2 to reflect new stakeholder input that was received during the 45-day public comment period for the Draft EIS/SEIR.
Section 4.5.1, Page 4-28	Added text to describe Census Tract 2060.51 located south of LAUS.
Section 4.5.3, Page 4-30	Added text to describe the CalEnviroScreen 4.0 map review.
Section 4.5.3, Pages 4-31 and 4-33, Figures 4-1 and 4-2	Revised community analysis terminology in Figures 4-1 and 4-2.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 4.6.1, Page 4-58	Added text to include additional cultural and religious communities from Little Tokyo.
Section 4.6.1, Page 4-59	Added text to explain that the non-minority communities in the Arts District or in the Southern Industrial District would not be subject to proximity impacts.
Section 4.6.1, Page 4-65	Revised text related to Mitigation Measure NV-1 to specify timing of construction of the proposed retaining wall/sound wall to be prior to any construction activities, including demolition.
Section 4.6.2, Page 4-76	Added text to include Section 4.6.2, Offsetting Mitigation Measures.
Section 4.6.2, Pages 4-78 through 4-79	Added text to describe the OMM considered as benefits of the Project that may offset the adverse effects discussed in Section 4.6.1, Topics Evaluated.
Section 4.7, Page 4-80	Added text to include Offsetting Mitigation Measure AQ-4: Construction Air Quality Monitoring at William Mead Homes.
Section 4.8, Page 4-81 through 4-83	Added text to describe the evaluation of the conclusion for determining disproportionate and adverse effects on minority and/or low-income populations.
Section 4.8, Page 4-83	Added text to include reference to Offsetting Mitigation Measure AQ-4.
Chapter 5.0, Section 4(f) Evaluation	
Section 5.1, Page 5-2	Revised text to add the latest Memorandum of Agreement renewal dates.
Section 5.1.2, Pages 5-6 through 5-7	Added text to describe the Section 4(f) consultation with SHPO and the U.S. Department of Interior National Park Service.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 5.4, Pages 5-12 and 5-13	Revised text to reflect that continued consultation regarding adverse effects to historic properties and the development of measures to resolve those adverse effects will take place in accordance with the Section 106 PA.
Section 5.6.2, Pages 5-27, 5-29 through 5-33, Table 5-4	Removed the following text from the table: “preliminary”, “Preliminary analysis shows” and “Use determinations will be finalized in the Final EIS/SEIR”.
Section 5.6.3, Pages 5-27, 5-34 through 5-46, Table 5-5	Removed the following text from the table: “preliminary”, “Preliminary analysis shows” and “Use determinations will be finalized in the Final EIS/SEIR”.
Section 5.6.3, Pages 5-47 through 5-48, Table 5-6	Revised text in the table to update the Section 4(f) use determinations.
Section 5.9, Page 5-77, Table 5-7	Revised text in row iv. of the table to state SHPO was provided with an opportunity to provide feedback on the Northern Avoidance Alternative; however, no responses or feedback were received. Feedback from SHPO related to the Build Alternative was considered in the least overall harm analysis.
Section 5.9, Page 5-78, Table 5-7	Revised text in row vi. Of the table to add “would be avoided with the Build Alternative”.
Section 5.9, Page 5-79	Added text outlining how the Build Alternative causes the least overall harm.
Section 5.10, Page 5-79	Revised the conclusion paragraph.
Chapter 6.0, Other NEPA Considerations	
Chapter 6.0, Page 6-1	Revised footnote text to reflect the latest Council on Environmental Quality actions.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Chapter 8.0, Public and Agency Outreach	
Chapter 8.0	Revised multiple instances of community analysis-related terminology throughout the Chapter and to acknowledge the community analysis performed for the Project.
Section 8.1, Pages 8-1 through 8-3	Revised and added text to include the stakeholder engagement conducted in Vernon before and after the close of the Draft EIS/SEIR 45-day public comment period.
Section 8.2, Page 8-4	Removed the following text, “which is intended to meet, as well as exceed, legal requirements in the FTA Circular C 4702.1B, regarding responsibilities to limited English Proficient Persons, and FTA Circular C 4703.1B, regarding the integration of EJ principles into the transportation decision-making process.”
Sectio 8.2.1, Page 8-10 and 8-11	Added text to cross reference Section 8.1 where the individual property owner meetings in Vernon are listed.
Section 8.2.1, Pages 8-16 and 8-17, Table 8-2	Revised and added text in Table 8-2 to include the stakeholder engagement conducted after the close of the Draft EIS/SEIR 45-day public comment period.
Sections 8.6 and 8.7, Pages 8-24 and 8-25	Revised text related to Draft EIS/SEIR distribution and comments requested as past tense.
Chapter 9.0, Build Alternative Design Option	
Chapter 9.0	Added Chapter 9.0 Build Alternative Design Option to provide a detailed description of the proposed design modifications to the Build Alternative including design variations, refinements, and reductions that are part of the Build Alternative Design Option. The new chapter was included to provide substantial evidence that preparation of a Supplemental EIS is not required based on the reduced magnitude and intensity of impacts that would result from implementation of the Build Alternative Design Option.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Chapter 10.0, List of Preparers	
Chapter 10	Updated list to reflect accurate and active preparers of the document.
Chapter 11.0, References	
Page 11-7	Revised text to replace outdated link associated with a source from Los Angeles Department of City Planning.
Page 11-10	Revised text to replace outdated links associated with sources from the U.S. Census Bureau.
Volume II, Technical Appendices	
Appendix B, NEPA Alternatives Evaluation Memorandum and Engineering Plans	
Appendix B, Engineering Plans	Appendix B was inadvertently truncated in the Appendix B attached to the Draft EIS/SEIR. Final EIS Appendix B includes the full version of the engineering plans for the Build Alternative, Build Alternative Design Option, and Malabar Yard railroad improvements (Design Options 1 and 2).
Appendix D, Community Impact Assessment	
Appendix D	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Appendix D	Revised Appendix to acknowledge the community analysis performed for the Project.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition".

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.1, Page 15	Added text to explain the federal regulatory framework in relation to the release of the Draft EIS/SEIR.
Section 2.0, Page 20	Added Executive Orders 14148, 14154, 14173, and 14224 to the Regulatory Framework.
Section 2.2.18, Page 24	Revised text to be consistent with the update Public Participation Plan.
Section 3.2, Page 35, Figure 3-1	Revised Figure 3-1 to reflect the Community Analysis Study Area.
Section 4.1, Pages 47 and 48	Added text to describe the ongoing public involvement process that will continue as part of Metro and CHSRA's decision making process.
Section 4.3, Pages 60 and 61, Table 4-3	Revised Table 4-3 to include the stakeholder engagement conducted after the close of the Draft EIS/SEIR 45-day public comment period.
Section 4.3, Page 62	Added text to acknowledge that additional meetings with HACLA were held to provide a Project update and overview of potential effects to support the NEPA and Section 106 processes.
Section 4.3, Pages 63 through 72, Table 4-4	Added text to include additional details for the input summary and summary of how feedback was addressed for each resource area.
Section 5.1.1, Page 74	Added text to include additional details about Little Tokyo District.
Sections 5.2.2, Page 91, Figure 5-5	Revised Figure 5-5 to reflect the Community Analysis Study Area.
Section 5.2.2, Pages 91, 94, and 96, Figure 5-5 and Table 5-1	Revised Figure 5-5 and Table 5-1 to include Hiroshima Kenjin-Kai of SoCal and the Japanese Evangelical Missionary Society.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 5.6.2, Pages 140 and 141	Revised text to include description of Census Tract 2060.51 south of LAUS.
Section 5.6.4, Page 142	Added text to describe the CalEnviroScreen 4.0 map review.
Section 5.6.4, Page 143, Figure 5-9	Revised Figure 5-9 to reflect Minority and Low-Income Communities.
Section 5.6.4, Page 145, Figure 5-10	Revised Figure 5-10 to reflect the Community Analysis Study Area.
Section 6.1.4, Page 166	Added text to acknowledge the conflict with three goals and one policy of the California Transportation Plan 2040.
Section 6.5.2, Page 187	Revised Phase A (Interim Condition) cost estimate to $1.93 billion and updated Table 6-3 and supporting text to describe the short-term economic impacts related to job-years generated (33,526 job-years).
Section 6.6, Page 191	Added text to include OMM AQ-4 to the list of measures to be implemented.
Section 6.6.1, Page 216	Revised text to add timing provisions for the construction of the sound walls related to Mitigation Measure NV-1.
Section 6.6.3, Page 227	Revised Section 6.6.3 to acknowledge the beneficial effects of OMM.
Section 6.6.3, Pages 230 and 231	Revised Section 6.6.3 to acknowledge the implementation of OMM AQ-4 as part of the Community Analysis determination.
Section 6.6.4, Page 232	Added text to update the conclusion for the Build Alternative not resulting in disproportionate or adverse effects on minority communities, low-income communities, and non-minority communities.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 7.0, Page 235	Added text to include Los Angeles Unified School District as a coordinating party in Mitigation Measure TR-1.
Section 7.0, Page 236 and 237	Revised Mitigation Measure TR-3 in accordance with two Board Motions adopted by the Metro Board during its October 23, 2025 meeting.
Section 7.0, Pages 240	Added text to add provisions regarding maintenance of sound walls in Mitigation Measure AES-1.
Section 7.0, Page 241	Revised text to add timing provisions for the construction of the sound walls in Mitigation Measure NV-1.
Section 7.0, Page 252	Revised Mitigation Measure HAZ-3 to remove and add “prior.”
Section 7.0, Page 253	Revised Mitigation Measure HAZ-4 to remove “action” and add “infrastructure.”
Appendix E, Traffic Impact Assessment	
Appendix E	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Section 7.7, Page 121, Figure 7-22	Revised Figure 7-22 to show the correct 2031 plus Project peak hour traffic volumes.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Appendix F, Visual Impact Assessment	
Appendix F	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition".
Section 6.0, Page 95	Revised Mitigation Measure AES-1 to add provisions regarding maintenance of sound walls.
Appendix G, Air Quality and Global Climate Change	
Appendix G	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Appendix G	Revised multiple instances in the Appendix to acknowledge the community analysis performed for the Project.
Appendix G	Added the text “supporting documentation included in Appendix D of this report” in multiple instances.
Sections ES.1, ES.2, 5.0, and 6.1, Pages vii, viii, 45 and 53	Revised multiple instances in the section to refer readers to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025, and Appendix Q of the Final EIS, as opposed to referring the reader to Final EIR Appendix H.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition."
Section 3.1, Page 19, Table 3-1	Revised and added text in the table notes of Table 3-1 to acknowledge the latest federal standards for $PM_{2.5}$.
Section 3.6, Page 24	Added text to include a description of Assembly Bill 617.
Section 3.8.1, Page 26 and 28	Revised Section 3.8.1 to include the following: • EO 14154 Unleashing American Energy (2025), the interim final rule, published on February 25, 2025 and effective April 11, 2025, that rescinds CEQ regulations. • Withdrawal of NEPA Guidance on Consideration of GHG Emissions and Climate Change, 90 Fed. Reg. 22,472 (May 28, 2025). • Jeffrey Bossert Clark, Jr., Acting Administrator Office of Information and Regulatory Affairs, Mem. for Regulatory Policy Officers at Depts. and Agencies and Managing and Executive Directors of Commissions and Boards (May 5, 2025), who implemented Section 6 of EO 14154. It provides guidance on rulemaking and also requires agencies, when approving permits to "provide the minimal greenhouse gas analysis and consideration necessary for agencies to comply with statutory requirements."
Section 4.2, Page 34	Revised text to footnote 3 to state "This 3-year period was the most recent monitoring data available at the time of analysis."
Section 4.3, Page 39	Added text to cite the 2015 Office of Environmental Health Hazard Assessment's (OEHHA) Guidance Manual for Preparation of Health Risk Assessments that was used to determine the distance for including sensitive receptors.
Section 6.1.1, Page 53	Added a subsection to discuss the carbon monoxide screening analysis.
Section 6.1.2, Page 62	Removed text related to the timing of future operations for Metrolink trains after mitigation.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Appendix H, Noise and Vibration Study	
Appendix H	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Section 4.3, Page 22	Added text to clarify that the operational noise assessment is based on the Build Alternative and the Rail Yard Canopy Design Option 1 – Individual Canopies over Rail Yard.
Section 11.1, Page 105	Revised text to add timing provisions for the construction of the sound walls in Mitigation Measure NV-1.
Appendix I, Natural Environment Study	
Appendix I	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Section 6.0, Page 81 and Page 82	Revised Mitigation Measure BIO-1 and BIO-2 to add “Metro and/or.”

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Appendix J1, Water Quality Assessment Report	
Appendix J1	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Appendix J2, Preliminary Low Impact Development Report	
Appendix J2	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Appendix K, Preliminary Geotechnical Report	
Appendix K	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Appendix L, Hazardous Waste Impacts Technical Memorandum	
Appendix L	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Appendix N, Paleontological Identification Report and Paleontological Evaluation Report	
Appendix N	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition.”
Appendix O, Economic and Fiscal Impact Assessment	
Appendix O	Revised text to remove “future” in front of “HSR trains” in multiple instances.
TOC, Page ii	Revised title to Table 4-7 to remove "(Full Build-Out with HSR Condition).”
Section ES.1, Page vi, Table ES-1	Revised Phase A (Interim Condition) cost estimate to $1.93B and updated Table ES-1 and supporting text to describe the short-term economic impacts related to job-years generated (33,526 job-years).

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition."
Section 3.2, Page 19, Table 3-1	Revised Table 3-1 to update the estimated cost of the Interim Condition and the total project cost.
Section 3.2, Page 20, Table 3-2	Revised Table 3-2 and supporting text to update the summary of capital expenditure costs for the Build Alternative.
Section 3.3, Pages 21 and 22, Table 3-4	Revised Table 3-4 and supporting text to update the direct (capital spending), indirect (supply-chain spending), induced (employee spending), and total impacts.
Section 3.3, Pages 23 and 24, Table 3-5	Revised Table 3-5 to update the breakdown of impacts by construction phase for both the Interim and Full Build-Out Conditions.
Section 4.2.2, Pages 33 and 34, Table 4-7	Revised table title to remove "(Full Build-Out with HSR Condition)."
Appendix P, Relocation Impact Report	
Appendix P	Revised text to remove “future” in front of “HSR trains” in multiple instances.
Section 1.5, Page 11	Revised text to remove "and the full build-out with HSR condition" and update phases.
Section 1.5.3, Page 13	Removed 1.5.3 section "Full Build-Out with High-Speed Rail Condition."

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Appendix Q, Environmental Evaluation of Malabar Yard Mitigation	
Executive Summary	
Section ES.0, Page ES-1	Revised text to correct the distance between LAUS and Malabar Yard.
Section ES.0, Page ES-1	Revised footnote to reflect the latest federal regulations.
Executive Summary	Revised multiple instances to acknowledge the community analysis performed throughout the Section.
Section ES.0, Page ES-3	Added text to describe the OMMs that would offset adverse effects that were incorporated as a result of meetings held after the close of the Draft EIS/SEIR 45-day public comment period.
Section ES.0, Pages ES-5 through ES-12, Table ES-1	Revised Table ES-1 to reflect the following updates: • Added text under the column "NEPA Effect Determination After Implementation of Mitigation Measures" to summarize the construction, operations, and indirect NEPA effects determinations after implementation of mitigation measures. • Added text to include Los Angeles Unified School District as a coordinating party for Malabar Yard Mitigation Measure TR-1. • Revised Malabar Yard Mitigation Measure TR-6 to remove reference to the Final EIS. • Added text to acknowledge the indirect beneficial effect that would occur as a result of reduced train movements north of Malabar Yard. • Revised text to correct the impact analysis for Topic 3.7-B and Malabar Yard Mitigation Measure BIO-2 to cite the City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees).
Chapter 1.0, Introduction	
Section 1.0	Revised multiple instances of community analysis terminology throughout the Section and to acknowledge the community analysis performed for the Project.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 1.1.1, Pages 1-11 and 1-12	Added text to describe additional analysis that was conducted as a result of meetings held after the close of the Draft EIS/SEIR 45-day public comment period.
Section 1.1.1, Page 1-14	Added text to clarify which parcels would require full acquisition to accommodate storage tracks at Los Angeles Junction.
Section 1.1.1, Page 1-16, Figure 1-3	Revised Figure 1-3 to show the seven properties that would require full acquisition to accommodate storage tracks at Los Angeles Junction.
Section 1.2, Page 1-17	Revised text to correct the distance between LAUS and Malabar Yard.
Chapter 2.0, Description of Malabar Yard Railroad Improvements	
Section 2.2, Pages 2-2 and 2-3	Added text describing the affected train routes.
Section 2.2.1, Pages 2-3 and 2-4	Revised typical length of trains and clarified existing operations along affected train routes.
Section 2.2.2, Pages 2-5 through 2-7	Added text to clarify the average train movements per day.
Section 2.2.2, Page 2-7, Figure 2-2	Deleted Figure 2-2: Operational Characteristics of Freight Railroad Operations in Vicinity of BNSF Malabar Yard. Figure 2-2 was replaced with a graphic titled Affected Train Routes. Revised the typical length of trains and number of rail cars traveling on the 46th Street Connector.
Section 2.2.2, Page 2-8	Added Figure 2-3: Existing Rail Operations and Figure 2-4 Future Rail Operations.
Section 2.2.3, Page 2-11	Added Table 2-4 to depict total daily train movements and time of travel for the existing and future conditions for each of the affected routes considered

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.3.2, Page 2-1	Figure 2-3 renumbered to Figure 2-5 and revised to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 2.3.2, Page 2-16	Figure 2-4 renumbered to Figure 2-6 and revised to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 2.3.2, Page 2-18	Figure 2-5 renumbered to Figure 2-7.
Section 2.3.2, Page 2-20	Figure 2-6 renumbered to Figure 2-8.
Section 2.3.3, Pages 2-22 and 2-23	Revised and added text to reflect the updates made to the improvements that would occur at the 46th Street and Seville Avenue railroad crossing after the close of the 45-day public comment period.
Section 2.3.3, Page 2-24	Renumbered Figure 2-7 to Figure 2-9 and revised to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 2.3.3, Page 2-26	Renumbered Figure 2-8 to Figure 2-10 and revised to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 2.4, Page 2-30	Renumbered Table 2-4 to Table 2-5.
Section 2.4, Page 2-34	Renumbered Figure 2-9 to Figure 2-11.
Section 2.4, Page 2-36	Renumbered Figure 2-10 to Figure 2-12.
Section 2.5, Page 2-38	Renumbered Table 2-5 to Table 2-6

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 2.5, Page 2-40	Renumbered Figure 2-11 to Figure 2-13.
Section 3.1, Introduction to the NEPA Analysis for Malabar Yard Railroad Improvements	
Section 3.1, Page 3.1-1	Revised footnote to reflect the latest federal regulations.
Section 3.1.1, Page 3.1-2	Revised section to acknowledge the community analysis performed for the Project.
Section 3.2, Land Use and Planning	
Section 3.2, Page 3.2-1	Revised footnote to reflect the latest federal regulations.
Section 3.2.1, Page 3.2-3, Table 3.2-1	Added text in Table 3.2-1 to include a description of the City of Vernon Westside Zone Change and General Plan Amendment.
Section 3.2.4, Page 3.2-11	Revised text to remove the “s” from "TOPICS 3.2-A.”
Section 3.2.4, Page 3.2-18, Topic 3.2-A	Revised text to remove “make a full turn” and add “maneuver.”
Section 3.2.4, Pages 3.2-19 and 3.2-20, Topic 3.2-A	Revised text to clarify the driveway impacts that would occur with the partial demolition of the building at 2665 Leonis Boulevard.
Section 3.2.4, Pages 3.2-35 and 3.2-36, Topic 3.2-B	Added text to bolster the operational analysis under Topic 3.2-C, “Physical division of an established community” and demonstrate no adverse effect related to division of communities or reduced community connectivity would occur.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.3, Transportation	
Section 3.3	Revised multiple instances to remove “delays” and add “congestion” throughout the Section.
Section 3.3.1, Page 3.3-2, Table 3.3-1	Revised Table 3.3-1 to correct the reference to the guidelines used for volume to capacity (v/c) ratio thresholds.
Section 3.3.2, Page 3.3-3 and Page 3.3-4	Revised text to clarify the traffic count normalization approach was coordinated with the City of Vernon prior to commencing analysis.
Section 3.3.2, Page 3.3-6	Revised text to remove “or by the average delay experienced by vehicles, pedestrians, and/or bicycles during peak hours” and to add “threshold.”
Section 3.3.2, Page 3.3-8, Table 3.3-4	Revised table sources and notes.
Section 3.3.2, Pages 3.3-9 through 3.3-11	Revised text to expand upon the discussion of roadway segment operational standards, trip re-distribution, traffic delays, queuing, and traffic congestion.
Section 3.3.4, Page 3.3-36, Topic 3.3-A	Revised text to update the responsibilities of Metro and/or the contractor for implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 under Topic 3.3-A, “Traffic congestion that limit the effectiveness of the traffic circulation system.”
Section 3.3.4, Page 3.3-45, Topic 3.3-B	Revised text to clarify that adequate truck turning ingress/egress would be maintained with the 49th Street Closure Design Option 2 under Topic 3.3-B, “Design of existing roadways and intersections causing increased hazards.”
Section 3.3.4, Page 3.3-46, Topic 3.3-B	Added and revised text to separate analysis of Driveway Nos. 11 and 12 under Topic 3.3-B, “Design of existing roadways and intersections causing increased hazards.”
Section 3.3.4, Pages 3.3-47 through 3.3-49, Topic 3.3-B	Revised text regarding signal, safety, and civil improvements and added text to include the results of the queuing analysis for railroad crossings under Topic 3.3-B, “Design of existing roadways and intersections causing increased hazards.”

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.3.4, Page 3.3-51, Topic 3.3-D	Revised text to correct Seville "Street" to Seville "Avenue" under Topic 3.3-D, "Public Transit, Bicycle, or Pedestrian Facilities"
Section 3.3.5, Page 3.3-53	Revised text to include Los Angeles Unified School District as a coordinating party and update the responsibilities of Metro and/or the contractor in Mitigation Measure TR-1.
Section 3.3.5, Page 3.3-53	Revised Malabar Yard Mitigation Measure TR-6 to remove reference to the Final EIS.
Section 3.4, Visual Quality and Aesthetics	
Section 3.4.2, Page 3.4.13, Figure 3.4-4	Revised Figure 3.4-4 to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 3.4.2, Page 3.4.15, Figure 3.4-5	Revised Figure 3.4-4 to remove two components from the existing at-grade crossing enhancements at Seville St.
Section 3.5, Air Quality and Global Climate Change	
Section 3.5	Revised multiple instances of community analysis-related terminology throughout the Section and to acknowledge the community analysis performed for the Project.
Section 3.5.1, Page 3.5-1	Added text to acknowledge the issuance of recent federal Executive Orders and regulatory directions.
Section 3.5.1, Page 3.5-2, Table 3.5-1	Revised Table 3.5-1 to reflect the following updates: • Revised text to reflect what was published on December 7, 2009. • Added the Executive Order 14154 Unleashing American Energy (2025) and the corresponding description • Added the Jeffrey Bossert Clark, Jr., Acting Administrator Office of Information and Regulatory Affairs, Mem. for Regulatory Policy Officers at Depts. and Agencies and Managing and Executive Directors of Commissions and Boards (May 5, 2025) and the corresponding description

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
	• Added the Withdrawal of [NEPA] Guidance on Consideration of [GHG] Emissions and Climate Change, 90 Fed. Reg. 22,472 (May 28, 2025) and the corresponding description • Added the Assembly Bill (AB) 617 and the corresponding description
Section 3.5.1, Page 3.5-2	Revised footnote to reflect the latest CEQ guidance.
Section 3.5.1, Page 3.5-10, Table 3.5-2	Added text on in the table notes of Table 3.5-2 to acknowledge the latest federal standards for $PM_{2.5}$.
Section 3.5.2, Page 3.5-11, Table 3.5-3	Added explanation of the use of a quarter-mile buffer for the identification of sensitive receptors.
Section 3.5.3, Page 3.5-15	Added explanation of the use of a quarter-mile buffer for the identification of sensitive receptors.
Section 3.5.3, Page 3.5-17, Figure 3.5-1	Revised figure to include distance of sensitive receptors from the Project footprint.
Section 3.5.4, Page 3.5-20, Topic 3.5-A	Added text that a localized analysis was completed for the construction of the Malabar Yard railroad improvements.
Section 3.5.4, Pages 3.5-22 and 3.5-23, Topic 3.5-A and Topic 3.5-B	Revised text to acknowledge the beneficial indirect effect of reduced train movements north of Malabar Yard under Topic 3.5-A, "General conformity *de minimis* levels for the South Coast Air Basin" and Topic 3.5-B, "Annual GHG emissions in excess of 25,000 MT of CO_2e."
Section 3.6, Noise and Vibration	
Section 3.6.2, Pages 3.6-3 and 3.6-4	Added text to definition of FTA Noise Category 3 land uses related to some medical offices when vibration-sensitive testing equipment such as Magnetic Resonance Imaging (MRI) systems are present.
Section 3.6.3, Pages 3.6-7 and 3.6-8	Added text to clarify why Stacy Medical Center is not categorized as a FTA Category 3 land use.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.6.4, Pages 3.6-9, 3.6-10, and 3.6-17, Topics 3.6-A through 3.6-C	Revised text to acknowledge the beneficial indirect effect of reduced train movements north of Malabar Yard under Topics 3.6-A and 3.6-C, "Noise levels in excess of established general plan, noise ordinance, or agency standards; ambient noise levels" and Topic 3.6-B, "Groundborne vibration and groundborne noise levels."
Section 3.7, Biological and Wetland Resources	
Section 3.7.1, Page 3.7-3, Table 3.7-1	Revised Table 3.7-1 to remove all mentions of the "City of Vernon Tree Protection Bylaw #4152" and replace text with applicable provisions of the "City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees)."
Section 3.7.2, Page 3.7-6	Revised text to remove "the City of Vernon Tree Protection Bylaw #4152" and add "the City's Tree Ordinance" and "Code of Ordinances, Chapter 12.24, Street Trees."
Section 3.7.3, Page 3.7-20	Revised text to remove "Protection Bylaw #4152" and add "Ordinance in Code of Ordinances, Chapters 12.24, Street Trees."
Section 3.7.4, Pages 3.7-22 and 3.7-23, Topic 3.7-B	Revised text to align with the City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees) under Topic 3.7-B, "Conflict with a tree preservation ordinance."
Section 3.7.5, Page 3.7-23	Revised Mitigation Measure MY BIO-1 to add "Metro and/or."
Section 3.7.5, Page 3.7-25	Revised text for Malabar Yard Mitigation Measure BIO-2 to remove all mentions of the City of Vernon Tree Protection Bylaw #4152 and replace text with applicable provisions of the City of Vernon Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees).
Section 3.8, Floodplains, Hydrology, and Water Quality	
Section 3.8.3, Page 3.18-14	Revised text to include the three public supply wells identified by the City of Vernon.
Section 3.10, Hazardous Waste and Materials	
Section 3.10.3, Page 3.10-15, Table 3.10-3	Removed Table 3.10-3 as it was a copy of Table 3.10-2.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.10.4, Page 3.10-21, Topic 3.10-B	Added text to clarify the location of the realignment of the existing spur track would not result in impacts related to the release of hazardous materials under Topic 3.10-B, "Risk of hazardous materials release into the environment."
Section 3.12, Cultural and Paleontological Resources	
Section 3.12	Removed multiple instances of "draft" throughout the section.
Section 3.12.1, Page 3.12-2	Revised footnote to reflect the latest federal regulations.
Section 3.14, Safety and Security	
Section 3.14.3, Page 3.14-9	Revised text to remove data sourced from Vernon Chamber of Commerce and replaced with Los Angeles County Fire Department information.
Section 3.15, Socioeconomics and Communities Affected	
Section 3.15	Revised multiple instances of community analysis-related terminology throughout the Section and to acknowledge the community analysis performed for the Project.
Section 3.16, Community Analysis	
Section 3.16	Revised multiple instances of community analysis-related terminology throughout the Section and to acknowledge the community analysis performed for the Project.
Section 3.16.2, Pages 3.16-1 through 3.16-6	Revised regulatory framework to acknowledge the community analysis performed throughout the Section.
Section 3.16.2, Page 3.16-6	Revised text to clarify the purpose of Metro's Public Participation Plan.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.16.2, Page 3.16-8	Added text to state CalEnviroScreen 4.0 was used to assist in the community analysis.
Section 3.16.3, Page 3.16-10	Added text to acknowledge the additional analysis conducted after the close of the Draft EIS/SEIR 45-day public comment period.
Section 3.16-3, Page 3.16-10	Revised text to include a brief discussion of OMM that were a result of meetings held after the close of the Draft EIS/SEIR 45-day public comment period.
Section 3.16-3, Page 3.16-12, Figure 3.16-1	Revised Figure 3.16-1 to reflect the Community Analysis Study Area.
Section 3.16.4, Pages 3.16-17 through 3.16-18, Table 3.16-1	Revised Table 3.16-1 to include additional outreach that was conducted.
Section 3.16.4, Pages 3.16-19 through 3.16-22, Table 3.16-2	Revised Table 3.16-2 to include additional resource areas, input summaries, and summaries of how feedback was addressed.
Section 3.16.6, Pages 3.16-27, Table 3.16-5	Revised Table 3.16-5 to include reasoning as to why land use was a topic eliminated from further community analysis.
Section 3.16.7, Pages 3.16-42 and 3.16-43	Added text to include additional analysis related to the perceived division of a community expressed during the Draft EIS/SEIR 45-day public comment period.
Section 3.16.7, Pages 3.16-43 and 3.16-44	Added and revised text to clarify potential impacts related to New Rail Crossing #5 queuing.
Section 3.16.9, Page 3.16-48 and Page 3.16-49	Added text to introduce the additional community improvements, OMMs, proposed as a result of meetings held after the close of the Draft EIS/SEIR 45-day public comment period.
Section 3.16.9, Pages 3.16-49 through 3.16-55	Added and revised text to each OMM description to expand on benefits of each.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
Section 3.16.9, Page 3.16-55, Figure 3.16-2	Added Figure 3.16-2, "Proposed Community Improvements" to show location and type of proposed community improvements throughout the City of Vernon.
Section 3.16.9, Pages 3.16-56 through 3.16-57, Table 3.16-6	Added Table 3.16-6 to additionally summarize the OMMs, their reasonable nexus to Project effects, their benefits, and demonstrate consistency with the Vernon community's goals and planning, as well as explain potential secondary environmental effects.
3.17 Section 4(f) Evaluation	
Section 3.17.1, Page 3.17-2	Revised text to remove "draft."
Section 3.17.2, Page 3.17-6	Revised text regarding coordination activities and to remove future tense text.
Chapter 4.0, References	
Page 4-3	Added reference to include a source from the County of Los Angeles.
Page 4-7	Revised text to remove a source from the Vernon Chamber of Commerce.
Malabar Yard Appendix F, Localized Air Quality Analysis for Malabar Yard (New Appendix)	
Appendix F	Added new Malabar Yard Appendix F to show the quantitative localized construction and operational air quality emissions associated with the Malabar Yard railroad improvements.
Malabar Yard Appendix G, Offsetting Mitigation Measures (New Appendix)	
Appendix G	Added new Malabar Yard Appendix G to accompany Appendix Q, Section 3.16, Community Analysis after the close of the Draft EIS/SEIR 45-day public comment period. The new Malabar Yard Appendix G includes the following: • Introduction to the extensive process and coordination to develop the OMMs that would offset the adverse effects of the Malabar Yard railroad improvements in the City of Vernon. • Summary of community outreach input to develop the OMMs.

Table ES-0. Summary of Changes

Section/Page No.	Summary of Changes
	• Full descriptions of the 11 OMMs and how the OMMs would benefit the City of Vernon, are consistent with community goals and planning initiatives, and align with community feedback received on the Draft EIS/SEIR.
Appendix R: Coordination and Outreach Plans	
Appendix R1, Agency and Public Coordination	
Section 5.4, Page 21	Revised section to acknowledge the community analysis performed for the Project.
Section 7.0, Page 28, Table 7-1	Revised section to acknowledge the community analysis performed for the Project.
Appendix R2, Public Outreach Plan	
Appendix R2	Revised Plan to acknowledge the community analysis performed for the Project and revised multiple instances of community analysis-related terminology.
Appendix R2	Revised section to reflect the current status of the Public Outreach Plan.
Sections 2.3, Pages 19 and 24, Figure 2-3 and Figure 2-4	Revised Figure 2-3 and Figure 2-4 to reflect the Community Analysis Study Area.
Appendix C, Public Outreach Plan and Community Engagement Activities, Pages 1 and 2	Revised list of public meetings, individual property owner meetings, and public events also promoted vis social media to include activated that occurred after the close of the Draft EIS/SEIR 45-day public comment period.

ES.5 Project Location and Study Area

The Build Alternative consists of infrastructure improvements in Downtown Los Angeles in the vicinity of LAUS (Figure ES-1). LAUS is located at 800 Alameda Street in the City of Los Angeles, California. LAUS is bounded by United States Highway 101 (US-101) to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. The northern Project limit is at North Main Street (Mile Post [MP] 1.18) and the southern Project limit is in the vicinity of Control Point (CP) Olympic, south of Interstate 10 and Olympic Boulevard (MP 142.70). Major Project components are primarily located between Main Street and First Street. The end-to-end distance from Main Street to First Street is approximately 1.4 miles.

Figure ES-2 depicts the Project study area which is generally used to characterize the affected environment at and within the vicinity of LAUS, unless otherwise specified, and provide a geographic context for the existing and proposed infrastructure improvements. 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, extends from North Main Street at the north to Cesar Chavez Avenue at the south and includes CP Chavez and the area north of the platforms at the LAUS rail yard. In the throat segment, all arriving and departing trains are required to traverse through a complex network of lead tracks, switches, and crossovers. Five lead tracks provide access into and out of the rail yard, except for one location near the Vignes Street Bridge, where it reduces 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. 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[3] aerial guideway) are also located just north of the platforms. Land uses in the vicinity of the throat segment are residential, industrial, and institutional.
- **Segment 2: Concourse Segment**. This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the East Portal Building, the baggage handling building with associated parking areas and access roads, the ticketing/waiting halls, and

[3] With the renaming of the Metro system lines which occurred in 2019 and operation of the Regional Connector commencing on June 16, 2023, the Red, Purple, and Gold Lines were renamed in the Metro system. The stretch of the Gold Line from LAUS to Azusa is now part of the A Line, while the portion from LAUS to East Los Angeles has been added to the E Line. The Red Line is now the B Line stretching from North Hollywood to LAUS, and the Purple Line is now the D Line stretching from Wilshire/Western to LAUS.

[4] CEQ has withdrawn its 40 CFR Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 Federal Register 15618 (April 25, 1986).

the 28-foot-wide pedestrian passageway with connecting ramps and stairways below the rail yard. Land uses in the vicinity of the concourse segment are residential, commercial, and public.

- **Segment 3: Run-Through Segment**. This segment is south of LAUS and extends east to west from Alameda Street to the west bank of the Los Angeles River and north to south from Keller Yard to 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 Railway (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 in the vicinity of 8th Street. Land uses in the vicinity of the run-through segment are primarily industrial and manufacturing.

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.6 High-Speed Rail Design Accommodation

CHSRA is responsible for the planning, design, construction, and operation of the planned HSR system, as well as preparing all environmental clearance documentation required for the entirety of the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections. The Link US Project footprint is large enough to include common rail infrastructure and additional infrastructure elements that CHSRA requires to operate its HSR system. Physical construction of common rail infrastructure that would allow CHSRA to construct the remaining infrastructure elements for the HSR system and to operate HSR trains within the Link US Project footprint is part of the Build Alternative and evaluated within this EIS. The Link US Project footprint also accommodates the space required for installation of overhead catenary system (OCS) poles and other HSR related utility improvements. When this EIS states the planned HSR system is "accommodated", it means Metro would construct the common rail infrastructure described in this EIS consistent with specifications and requirements that CHSRA designates as appropriate for CHSRA to operate its HSR system within the limits of the Link US Project footprint. Cumulative effects in conjunction with the planned HSR system are considered and evaluated in Chapter 3.16 of this EIS.

ES.7 Existing Conditions at Los Angeles Union Station

LAUS was opened for service in 1939 and has operated as the central hub for regional transit in Southern California for 80 years, providing direct linkages for the Metro rail system (e.g., Red, Purple, and Gold Lines), Metro's Patsaourous Transit Plaza, Metrolink regional rail (commuter) trains, Amtrak regional and intercity rail trains, and Amtrak's long-distance trains.

The existing LAUS rail yard includes 15 tracks and 7 platforms. Two active tracks (Tracks 1 and 2) serve the Gold Line on Platform 1, and 12 active stub-end terminal platform tracks (Tracks 3 through 14) serve Metrolink and Amtrak trains from Platforms 2 through 7. Track 15 is used for rail equipment layovers and non-revenue service. On the west side of the tracks, just north of the platforms and adjacent to the existing Gold Line aerial guideway, there are additional stub-end tracks known as the Garden Tracks, where private train cars are currently stored. Amtrak currently has services available to allow for private train cars stored on the Garden Tracks to be connected to specific Amtrak trains that also originate/terminate at LAUS.

The LAUS throat consists of complicated track configurations that require train dispatchers to direct trains into and out of the appropriate assigned terminal platform tracks, thereby limiting the operational capacity and train frequency through LAUS. The existing stub-end rail yard configuration at LAUS requires all trains pull into the station terminal then reverse their direction of travel on the same set of tracks after loading/unloading passengers. As such, trains using LAUS are subject to delays and extended periods of idling time either at the station platforms or on the connecting tracks while awaiting a slot at the platforms or access onto the main lines.

Currently 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 role of LAUS in the regional transportation network is becoming increasingly critical, as regional growth in both population and employment dictate a growing need for increased regional transit capacity and connectivity. 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.

ES.7.1 Bus Operations

LAUS serves a variety of local, regional, and interstate bus routes operated by Metro, Antelope Valley Transit Authority, BoltBus, Greyhound, City of Los Angeles Department of Transportation (LADOT), Foothill Transit, Los Angeles International Airport (LAX) Flyaway, Megabus, Orange County Transportation Authority, Santa Clarita Transit, Santa Monica Municipal Bus Lines, and the University of Southern California Tram. In addition, the Foothill Transit Silver Streak, Metro Silver Line, and Metro Express have bus stops on the El Monte Busway south of LAUS along Arcadia Street and surrounding the station property. Amtrak Thruway bus service, which is Amtrak's system of intercity motor coaches that offers connecting service to unserved rail areas, also operates from LAUS and provides linkages to the Amtrak line to Bakersfield, Santa Barbara, San Diego, and other major cities. Patsaouras Transit Plaza offers essential bus connections with approximately 1,500 arriving and departing buses every day (California Transit Association 2019).

ES.8 Project Purpose and Need

ES.8.1 Project Purpose

The purpose of the Project is to increase the regional and intercity rail service capacity of LAUS and to improve schedule reliability at LAUS through the implementation of a run through tracks configuration and elimination of the current stub end tracks configuration while preserving current levels of freight rail operations, accommodating the planned HSR system in Southern California, increasing the passenger/pedestrian capacity and enhancing the safety of LAUS through the implementation of a new passenger concourse meeting the multi modal transportation demands at LAUS.

ES.8.2 Project Need

The need for the Project is generated by the forecasted increase in regional population and employment; implementation of federal, state, and regional transportation plans (RTP) that provide for increased operational frequency for regional and intercity trains; and introduction of the planned HSR system in Southern California. Localized operational, safety, and accessibility upgrades in and around LAUS will be required to meet existing demand and future growth.

ES.9 Project Alternatives and Design Options – Summary Overview

This section provides an overview of the alternatives analysis process that led to identification and recommendation of the Build Alternative, an overview of the 8 run-through track alignment alternatives reconsidered during the Final EIS process, and a summary of the alternatives and design options considered in the Final EIS including the No Action Alternative, Build Alternative and Canopy Design Options, and the Build Alternative Design Option.

Draft EIS/SEIR – Alternatives Analysis Process

The screening process that was used to select the Build Alternative included an evaluation of 14 track alignment alternatives and 6 concourse concepts that are described in detail in the *NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of the Draft EIS/SEIR) and Chapter 2.0, Alternatives and Design Options Considered. As summarized in Table 2-1 and Table 2-2 and described in more detail in the *NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of the Draft EIS/SEIR), 14 track alignment alternatives were screened, of which 13 were rejected; and 6 concourse concepts were screened, of which 5 were rejected.

The major components of the track alignment alternative and concourse concept recommended for detailed evaluation in the Draft EIS/SEIR include new lead tracks north of LAUS (Segment 1: Throat Segment), an elevated throat and rail yard with concourse-related improvements at LAUS (Segment 2: Concourse Segment), and 10 run-through tracks that would extend south of LAUS

Platforms 2 through 6 and merge into a minimum of four tracks on the US-101 viaduct and continue south (Segment 3: Run-Through Segment).

Final EIS – Alternatives Analysis Process

All track alignment alternatives considered during preparation of the Draft EIS/SEIR included a run-through track configuration that would achieve the forecasted increase in train movements on dedicated tracks south of LAUS. In collaboration with rail operators, Metro determined that a shared tracks configuration, as compared to dedicated tracks configuration, would also support future passenger operations south of LAUS. Metro also determined that an alignment with fewer than ten run-through tracks would not cause potential constraints or limits on operational flexibility that Metro had initially planned for when Track Alignment Alternative Screening Criteria 1 was developed. This is because run-through service at LAUS would facilitate enhanced capacity and operational benefits at LAUS, even with fewer than ten run-through tracks.

Screening Criterion 1 is retained in the Final EIS; however, to properly analyze and consider the benefits of alternatives with fewer than ten run-through tracks, including the proposed design modifications and reductions of the Build Alternative Design Option, the screening method was modified from pass/fail (Yes or No) to no-longer-pass/fail. In addition, all other track alignment alternatives with 8 run-through tracks, previously rejected from further consideration for not meeting Track Alignment Alternative Screening Criteria 1, were reconsidered to determine if they would qualify for detailed evaluation in the Final EIS.

The reconsideration of alternatives analysis addressed:

- Purpose and Need Consistency
- Ability to Meet Other Screening Criteria
- Additional Environmental Considerations (based on identified impacts acknowledged in the Final EIS)

Track Alignment Alternatives 2, 5, 6, and 10, all of which include 8 run-through tracks, were reconsidered during the Final EIS process. These four track alignment alternatives would not fulfill the applicable provisions of the purpose and need, would conflict with other screening criterion, and result in greater environmental impacts. For these reasons, Track Alignment Alternatives 2, 5, 6, and 10 do not qualify for further consideration in the Final EIS.

The Build Alternative Design Option includes 8 run-through tracks, is consistent with all applicable provisions of the purpose and need, meets all other screening criteria, and would avoid and reduce the magnitude and intensity of Project-related environmental effects. The alternatives analysis process is further summarized in Chapter 2 of the Final EIS.

ES.9.1 No Action Alternative

NEPA (40 CFR 1502.14(d))[4] requires federal agencies to include an analysis of "the alternative of no action." For NEPA purposes, the No Action Alternative is the baseline against which the effects of implementing the Build Alternative is evaluated in order to determine the extent of environmental and community effects. For the No Action Alternative, the baseline year is 2016, and the horizon year is 2040.

The No Action Alternative represents the future conditions that would occur if the proposed infrastructure improvements and the operational capacity enhancements at LAUS were not implemented. The No Action Alternative reflects the foreseeable effects of growth planned for the area in conjunction with other existing, planned, and reasonably foreseeable projects and infrastructure improvements in the Los Angeles area, as identified in planning documents prepared by Southern California Association of Governments (SCAG), Metro, and/or Metrolink, including the *2023 Federal Transportation Improvement Program* (FTIP) (SCAG 2023), *Final 2008 Regional Comprehensive Plan* (SCAG 2008), and the *2020 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS): Connect SoCal* (SCAG 2020).

Conditions in and around LAUS would remain similar to the existing condition, as described below:

- **North of LAUS** – Trains would continue to operate on five lead tracks that do not currently accommodate the planned HSR system. The tracks north of LAUS would remain at the current elevation, and the Vignes Street Bridge and Cesar Chavez Avenue Bridge would remain in place.
- **LAUS** – 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 be retained in its current configuration. No modifications to the existing passenger circulation routes or addition of vertical circulation elements (VCEs; stairs, escalators, and elevators) at LAUS would occur.
- **South of LAUS** – Commercial Street would remain in its existing configuration, and implementation of active transportation improvements would likely be implemented along Center Street in concert with the *Connect US Action Plan* (Metro 2015a) and Eastside Access Improvements. No modifications to the BNSF West Bank Yard would occur.

[4] CEQ has withdrawn its 40 CFR Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 Federal Register 15618 (April 25, 1986).

As discussed above, under the No Action Alternative, Metro would not realize enhanced operational capacity at LAUS to meet the demands of the broader rail system, thereby further constraining its ability to accommodate the forecast travel demands at LAUS.

ES.9.2 Build Alternative

The key components associated with the Build Alternative are discussed in detail in Chapter 2, Alternatives and Design Options Considered and are summarized north to south below:

- **Segment 1: Throat Segment (lead tracks and throat track reconstruction)** – The Build Alternative 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 Build Alternative 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 trains (Metrolink/Amtrak) and operations for HSR trains within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of CP Chavez on the west bank of the Los Angeles River, the Build Alternative also includes safety improvements at the North Main Street public at-grade railroad crossing (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- **Segment 2: Concourse Segment (elevated rail yard and expanded passageway)** – The Build Alternative includes an elevated rail yard and expansion of the existing 28-foot-wide pedestrian passageway in Segment 2 of the Project study area (concourse segment). The rail yard would be elevated approximately 15 feet. New passenger platforms would be constructed on the elevated rail yard with associated VCEs (stairs, escalators, and elevators) to enhance safety elements and improve Americans with Disabilities Act (ADA) accessibility. Platform 1, serving the Gold Line, would be lengthened, and elevated to optimize east to west passenger circulation. The pedestrian passageway would be expanded at the current grade to a 140-foot width to accommodate a substantial increase in passenger capacity with new functionally modern passenger amenities while providing points of safety to meet applicable California Building Code (CBC) and National Fire Protection Association (NFPA) 130 Standards for Fixed Guideway Transit Systems. The expanded passageway and associated concourse improvements would facilitate enhanced passenger circulation and provide space for ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, and office/commercial uses while creating an opportunity for an outdoor, community-oriented space with new plazas east and west of the elevated rail yard (East and West Plazas). Amtrak ticketing and baggage check-in services would be enhanced, and new baggage carousels would be constructed in a centralized location under the rail yard. A canopy would be constructed over the West Plaza up to 70 feet in height, and two

design options are considered for canopies that would extend over the rail yard (Section ES.6.3).

- **Segment 3: Run-Through Segment (10 run-through tracks)** – The Build Alternative includes 10 new run-through tracks south of LAUS in Segment 3 of the Project study area (run-through segment). The Build Alternative includes common rail infrastructure from LAUS to the west bank of the Los Angeles River (vicinity of First Street Bridge) to support run-through tracks for both regional/intercity rail trains and HSR trains. At the BNSF West Bank Yard, dedicated lead tracks for Amtrak trains and BNSF trains, in combination with implementation of common rail infrastructure would result in permanent loss of freight rail storage track capacity at the north end of BNSF West Bank Yard (5,500 track feet).

The Build Alternative would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); improvements to railroad signal, positive train control (PTC), and communication systems; 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 the Amtrak lead track; addition of access roadways to the railroad right-of-way (ROW); land acquisitions; addition of utilities; utility relocations, replacements, and abandonments; and addition of drainage facilities/water quality improvements.

ES.9.3 Rail Yard Canopy Design Options

Two design options for canopies over the elevated platforms in the rail yard are considered in conjunction with the concourse-related improvements as part of the Build Alternative.

- **Rail Yard Canopy Design Option 1 (individual canopies)** – This design option would include replacing the existing historic butterfly canopies with individual canopies above each platform. New individual canopies would extend up to 25 feet above each platform and would be similar in form to the existing butterfly canopies but sized to fit the widened and lengthened platforms. Platform lengths would vary between 450 and 1,445 feet. Platforms would be up to 30 feet wide.
- **Rail Yard Canopy Design Option 2 (grand canopy)** – This design option would include replacing the existing historic butterfly canopies with a large grand canopy that would extend up to 75 feet above the elevated rail yard platforms. The grand canopy would be up to 1,500 feet long and wide enough to provide cover over all elevated platforms in the rail yard.

ES.9.4 Build Alternative Design Option

The key components associated with the Build Alternative Design Option are summarized north to south below. The Project footprint is the same as considered in the Draft EIS/SEIR.

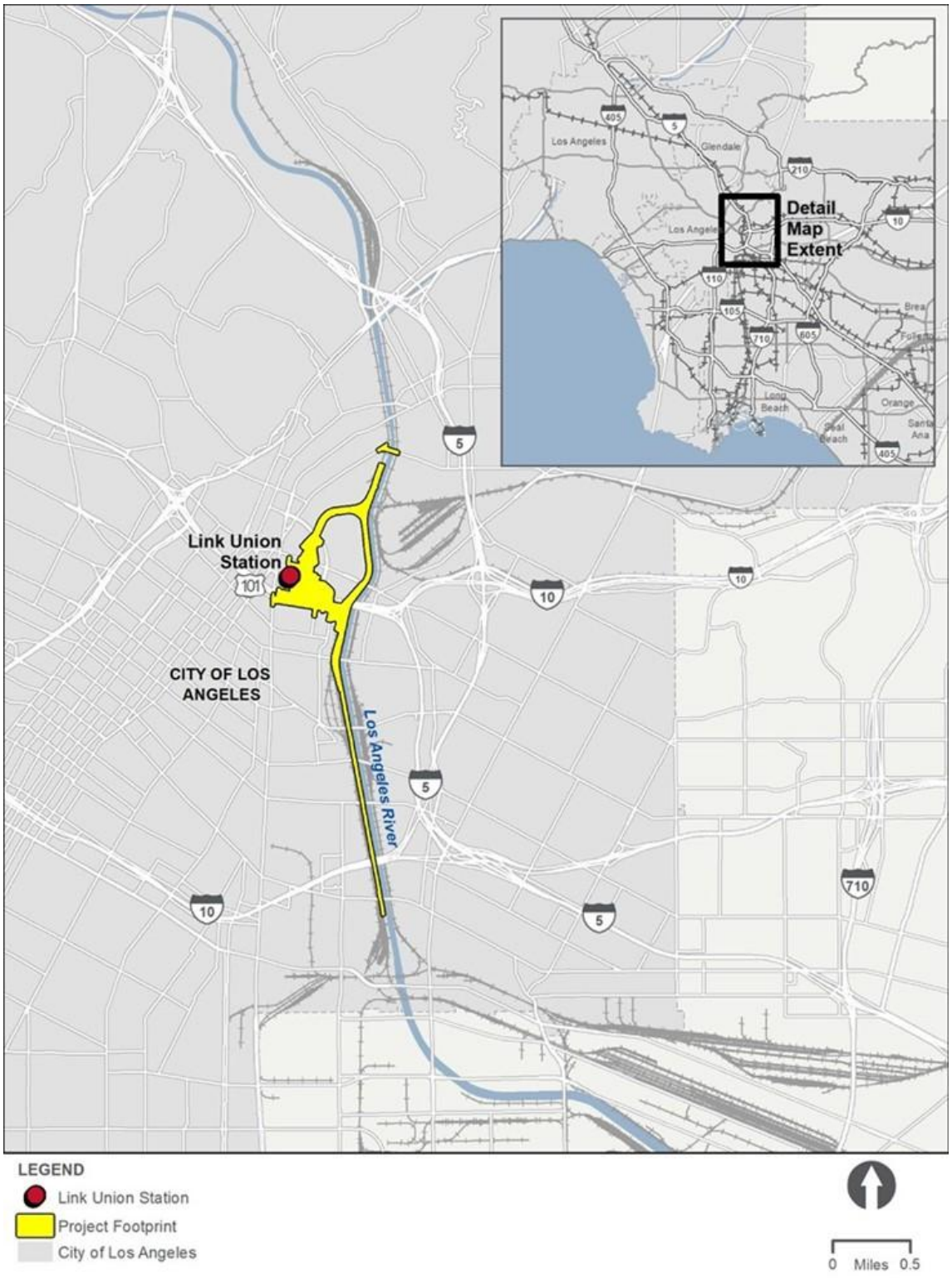
- **Segment 1: Throat Segment (lead tracks and throat track reconstruction)** – The Build Alternative Design Option includes subgrade and structural improvements in Segment 1 of the Project study area (throat segment) to increase the elevation of the tracks south of the Vignes Steet Bridge leading to the rail yard. The Build Alternative Design Option 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 trains (Metrolink/Amtrak) and operations for HSR trains within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The existing Cesar Chavez Avenue Bridge would be partially reconstructed; however, no modifications to or replacement of the Vignes Street Bridge would be required. North of CP Chavez on the west bank of the Los Angeles River, the Build Alternative Design Option also includes safety improvements at the Main Street public at-grade railroad crossing (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- **Segment 2: Concourse Segment (partially elevated rail yard and expanded passageway)** – The Build Alternative Design Option includes a partially elevated rail yard, partially reconstructed Cesar Chavez Bridge, and expansion of the existing 28-foot-wide pedestrian passageway in Segment 2 of the Project study area (concourse segment). The rail yard would be elevated approximately nine to twelve feet. Four passenger platforms would be reconstructed on the partially elevated rail yard with associated VCEs (stairs, escalators, and elevators) to enhance safety elements and improve Americans with Disabilities Act (ADA) accessibility. Platform 1 would continue to serve the Gold Line, and Platforms 6 and 7 serving SCRRA, Amtrak, and Amtrak long distance trains would continue to operate stub ended at present elevation. The pedestrian passageway would be expanded at the current grade to a 100-foot width to accommodate a substantial increase in passenger capacity with new functionally modern passenger amenities while providing points of safety to meet applicable California Building Code (CBC) and National Fire Protection Association 130 Standards for Fixed Guideway Transit Systems. The expanded passageway and associated concourse improvements would facilitate enhanced passenger circulation and provide space for ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, and office/commercial uses while creating an opportunity for an outdoor, community-oriented space east of the elevated rail yard (East Plaza). Amtrak ticketing and baggage check-in services would be enhanced, and new baggage carousels would be constructed in a centralized location under the rail yard. New canopies that would extend 25 feet over each of the four new reconstructed platforms are proposed. New individual canopies would be similar in form to the existing butterfly canopies but sized to fit the widened and lengthened platforms.

- **Segment 3: Run-Through Segment (8 run-through tracks)** – The Build Alternative Design Option includes 8 new run-through tracks on a single aerial viaduct south of LAUS in Segment 3 of the Project study area (run-through segment). The Build Alternative Design Option includes common rail infrastructure from LAUS to the west bank of the Los Angeles River (vicinity of First Street Bridge) to support run-through tracks for both regional/intercity rail trains and HSR trains. At the BNSF West Bank Yard, dedicated lead tracks for Amtrak trains and BNSF trains, in combination with implementation of common rail infrastructure would result in permanent loss of freight rail storage track capacity at the north end of BNSF West Bank Yard (5,500 track feet).

The Build Alternative Design Option would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); improvements to railroad signal, positive train control, and communication systems; modifications to the main line tracks on the west bank of the Los Angeles River; lowering of the Amtrak lead track; addition of access roadways to the railroad right-of-way (ROW); land acquisitions; addition of utilities; utility relocations, replacements, and abandonments; and addition of drainage facilities/water quality improvements.

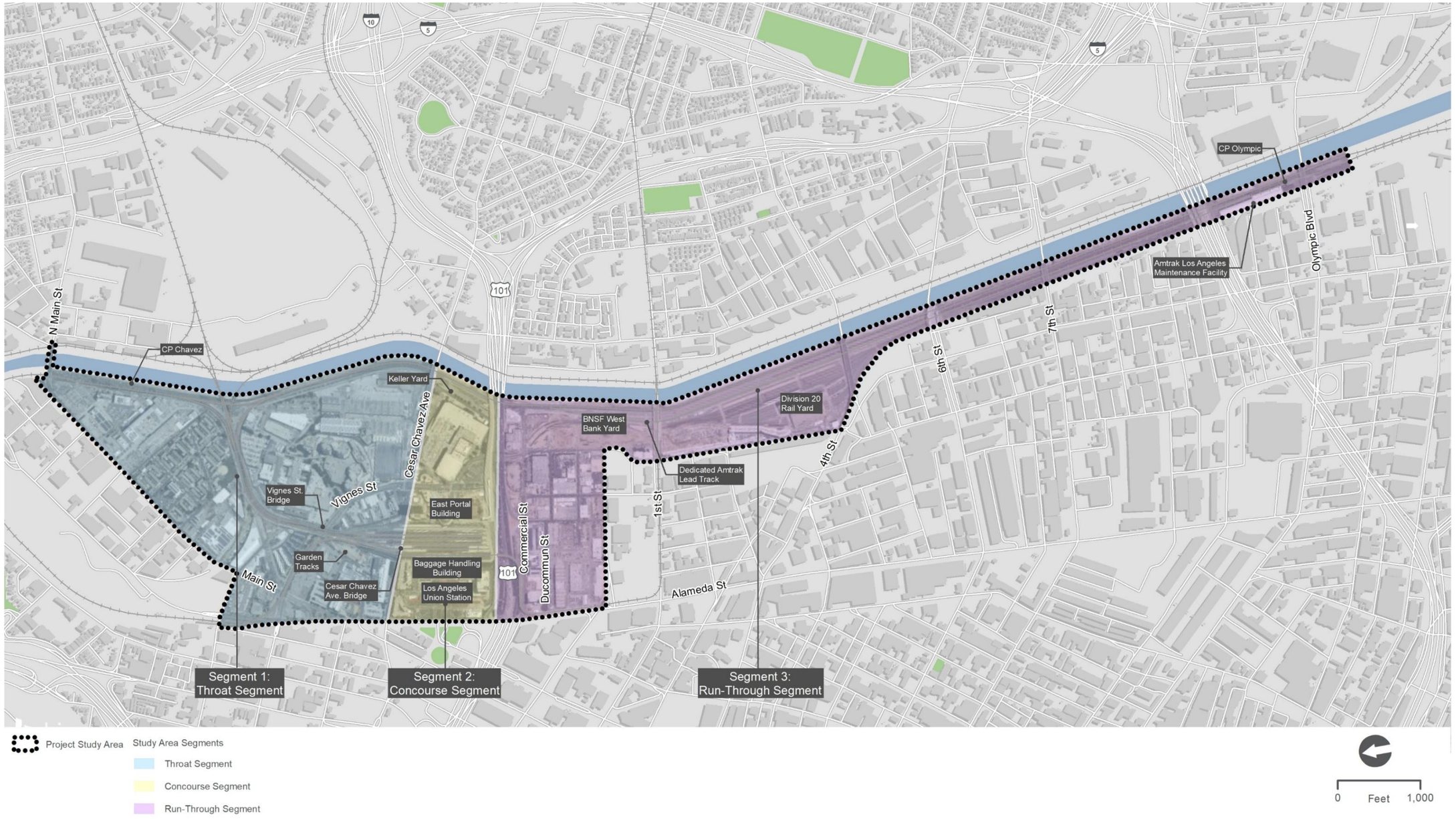
The design modifications that are part of the Build Alternative Design Option qualify as a minor variation rather than an alternative because the variations reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of Project-related environmental effects, and would not substantially alter the overall environmental effects of the Build Alternative previously identified.

Figure ES-1. Project Location and Regional Vicinity



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Figure ES-2. Project Study Area



Notes: The Project Study Area is non-contiguous and comprises a portion in the City of Los Angeles and a portion in the City of Vernon. The City of Vernon portion is depicted in Figure 1-4 in the Link US Environmental Evaluation of Malabar Yard Mitigation (Appendix Q of this EIS).

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ES.10 Anticipated Agency Involvement

ES.10.1 Cooperating and Participating Agencies

Formal invitations to the following agencies were sent throughout development of the Draft EIS/SEIR as described below:

- On July 28, 2016, FRA invited Caltrans, CHSRA, the Federal Transit Administration (FTA), U.S. Environmental Protection Agency (U.S. EPA), Federal Highway Administration (FHWA), and the SCRRA to participate in the environmental review of the project as cooperating and/or participating agencies.
- On July 26, 2017, FRA sent cooperating agency invitation letters to CHSRA, SCRRA, FTA, and Caltrans.
- Letters were received accepting cooperating agency status from Caltrans on September 1, 2017; SCRRA on August 15, 2017; and CHSRA on January 29, 2018. FTA accepted the invitation to become a participating agency on June 22, 2018.
- On July 26, 2017, participating agency invitation letters were also sent to the City of Los Angeles Department of City Planning, Office of Historic Resources (OHR), and Housing Authority; none of which responded accepting or declining the invitation.
- On December 13, 2019, after receipt of NEPA Assignment, CHSRA reissued letters requesting confirmation of each agency's involvement and participation in the environmental review process.
- In response to the invitation letters issued by CHSRA in 2019, Caltrans reconfirmed their role as a NEPA cooperating agency on January 13, 2020, and the City of Los Angeles Department of City Planning accepted the role as a participating agency on June 19, 2020.
- On July 20, 2023, CHSRA reissued letters requesting confirmation of each agency's involvement and participation in the environmental review process. A new NEPA participating agency invitation letter was also sent to the City of Vernon.
- In response to the invitation letters reissued by CHSRA in July 2023, U.S. EPA accepted their role as a NEPA participating agency on August 2, 2023; FHWA accepted the invitation to become a NEPA participating agency on August 21, 2023; the City of Los Angeles Department of City Planning reconfirmed their role as a NEPA participating agency on August 9, 2023; SCRRA reconfirmed their role as a NEPA cooperating agency on August 18, 2023; and Caltrans reconfirmed their role as a NEPA cooperating agency on August 28, 2023. FTA elected to not act as a NEPA participating agency on July 26, 2023. No response was received from the City of Vernon accepting or declining the invitation.
- As the federal lead agency responsible for NEPA compliance, CHSRA may invite additional agencies to participate in environmental review process as cooperating and/or

participating agencies. The following agencies are anticipated to be involved during Project development and construction:

- FRA – Project funding and approval of Air Quality General Conformity, noticing in the *FR*, approval of any design waivers, government-to-government tribal consultation, and other responsibilities not assigned to CHSRA pursuant to the MOU with the State of California, including General Conformity Determinations
- SCRRA – Approval of operating plans and review of EIS as a Cooperating Agency
- Caltrans – Approval of encroachment permit for US-101 crossing and review of EIS as a Cooperating Agency
- U.S. EPA – Review of the EIS as a Participating Agency and noticing in the FR
- City of Los Angeles – Approval of roadway encroachment permits and, if required, updates to the Alameda District Specific Plan (ADSP) or General Plan/Community Plan land use and circulation maps, construction noise variances and review of EIS as a Participating Agency
- SHPO – Review of Section 106 documentation prepared pursuant to the requirements of the NHPA/Official with Jurisdiction over Section 4(f) properties
- County of Los Angeles – Approval of encroachment permits on County property
- LOSSAN Rail Corridor Agency – Approval of operating plans
- Amtrak – Approval of operating plans
- California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) – Approval of soil management plan in areas containing deed restrictions
- California Division of Occupational Safety and Health – Approval of architectural plans
- Native American Heritage Commission (NAHC) – Coordination with interested tribes and review of Section 106 documentation
- California Public Utilities Commission (CPUC) – Approvals for new and/or enhancements to existing at-grade crossings
- Regional Water Quality Control Board (RWQCB), Region 4 – Approval of National Pollutant Discharge Elimination System (NPDES) Permit(s)
- SCAG – Coordination of Project updates into the RTP/SCS

ES.11 Anticipated Permits, Discretionary Actions, and Agency Approvals

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

- **Metro** – Metro, as the Project owner, project sponsor and joint NEPA lead agency, would be responsible for administering funding, construction, and operation 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 2016a). 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. A maintenance agreement may also be required for the sound wall at William Mead Homes.
- **CHSRA** – CHSRA is the NEPA lead agency responsible for issuing a Record of Decision for the Project and operating the planned HSR system through the Project limits.
- **City of Vernon** – The City of Vernon is responsible for approval of any roadway modifications that may occur from Malabar Yard railroad improvements.

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.12 Summary of Effects and Mitigation Measures

ES.12.1 NEPA EIS Analysis (Build Alternative and Build Alternative Design Option)

For each of the environmental topic areas considered in Section 3.2 through 3.15 of the Final EIS, Table ES-1 summarizes the environmental effects, mitigation measures, and denotes if effects would remain adverse after implementation of the Build Alternative with proposed mitigation measures, if applicable. Detailed analyses of all environmental topic areas considered and the associated NEPA determinations for the Build Alternative are provided in the Environmental Consequences subsections of Section 3.2 through 3.15 of the Final EIS.

Section 3.16, Cumulative Effects, of this Final EIS identifies the cumulative effects resulting from the combined impacts of the Build Alternative and past, present, and reasonably foreseeable

cumulative projects considered. Table 3.16-4 of this Final EIS provides a cumulative impact summary for the Build Alternative.

The Section 4(f) determination for the Build Alternative is provided in narrative format in Section ES.21.

Table ES-3 provides a summary of the NEPA effect determinations for each environmental topic area for the Build Alternative, the NEPA effect determinations for the Build Alternative Design Option, and a comparative evaluation with evidence to support how the scope of the proposed modifications as part of the Build Alternative Design Option is within the scope and associated environmental analysis of the Build Alternative, and how the environmental effects previously identified for the Build Alternative would be reduced or avoided with the Build Alternative Design Option.

ES.12.2 Malabar Yard Railroad Improvements

NEPA Determinations

The *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of the Final EIS) was prepared to support the NEPA documentation for the Malabar Yard railroad improvements, and includes a full description of the regulatory framework, methods for evaluating effects, the affected environment, environmental consequences, and proposed mitigation measures. For each of the environmental topic areas considered in Section 3.2 through 3.15 of the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of the Final EIS), Table ES-2 summarizes the environmental effects, mitigation measures, and denotes if effects would remain adverse after implementation of the design options considered for the Malabar Yard railroad improvements with proposed mitigation measures, if applicable. Detailed analyses of all environmental topic areas considered and the associated NEPA determinations for the Malabar Yard railroad improvements are provided in the Environmental Consequences subsections of Section 3.2 through 3.15 of the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of the Final EIS) for each design option considered at both locations (49th Street and 46th Street). The Section 4(f) determination for the Malabar Yard railroad improvements is provided in narrative format below in Section ES.21, consistent with how the executive summary analysis for the Build Alternative is presented.

ES.12.3 Offsetting Mitigation Measures in Response to Community Input

Build Alternative and Build Alternative Design Option

Although the EIS does not identify disproportionate or adverse impacts to a minority and/or low-income community related to any of the identified adverse effects (cultural and paleontological resources and temporary construction noise), Metro sought input from minority and/or low-income communities as part of the Draft EIS/SEIR public review process to understand community

concerns about the Project and its potential effects. Public notification and outreach included, but was not limited to William Mead Homes, Care First Village, Little Tokyo, and First 5 LA. Input provided by the Little Tokyo community, First 5 LA, and residents of William Mead Homes was evaluated and determined to have been previously addressed by design features, construction phasing, and mitigation measures. For example, Quiet Zone infrastructure would be constructed at North Main Street near William Mead Homes, noise walls would be constructed at William Mead Homes and Care First Village, and construction haul routes would not travel adjacent to First 5 LA or through the Little Tokyo District. As a result of coordination with HACLA and based on comments received after the Draft EIS/SEIR 45-day public comment period, Mitigation Measure NV-1, Construct Sound Walls, was revised to include additional detail about the timing and future maintenance of the sound wall at William Mead Homes.

At the request of HACLA, Metro adopted OMM AQ-4 to complement existing construction mitigation measures to further limit impacts and be sensitive to community feedback related to William Mead Homes, a minority and/or low-income community with immediate proximity to construction. OMMs are separate from the direct mitigation measures in the Final EIS and separate from improvements required by local, state, or federal mandates.

OMM AQ-4, Construction Air Quality Monitoring at William Mead Homes, provides an opportunity to limit construction-related air quality effects to public health and provides additional environmental controls to offset potential localized construction-related air quality effects. OMM AQ-4 will complement Mitigation Measure AQ-1, Fugitive Dust Control, Mitigation Measure AQ-2, U.S. EPA Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment, and Mitigation Measure AQ-3, Adaptive Air Quality Management Plan.

Prior to the start of construction, Metro will develop a construction air quality monitoring plan specific to William Mead Homes in coordination with HACLA, SCAQMD, and U.S. EPA. This construction air quality monitoring plan will identify locations along the fence line and within the William Mead Homes property for stationary air quality monitoring to be set up during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The construction air quality monitoring plan will identify the monitoring methodology, inspection procedures, threshold levels for alerts, compliance measures in the event of an alert, and reporting requirements. Compliance measures to be implemented by the construction contractor may include, but are not limited to, additional watering or use of dust suppressants, limiting vehicle speed to 5 mph on unpaved surfaces, covering open-bodied trucks, and installing wheel washing stations or rumble plates. The construction air quality monitoring plan will also provide contact information for a construction representative to be identified for inquiries by residents of the William Mead Homes community and guidance for community notifications.

Metro will be responsible for operating and maintaining the air quality monitoring equipment during construction. Metro will have a dust control supervisor onsite during construction to ensure the construction air quality monitoring plan is being followed and that the air quality monitoring equipment remains operational during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The dust control supervisor will

maintain a daily log of the construction activity by location, verify the air monitoring measurements, and coordinate back to Metro for validation of the data before release to the public.

OMM AQ-4 consists of monitoring during construction and does not include infrastructure development or construction, therefore, it would not result in physical impacts on the environment.

Malabar Yard Railroad Improvements

After the close of the Draft EIS/SEIR 45-day public comment period, Metro coordinated substantially with the City of Vernon staff to develop community improvements that could be implemented in the community. In response to concerns raised by the City of Vernon and in consideration of the historic and cumulative effects that the community has experienced that create more adverse existing conditions, Metro proposed a suite of community improvements to offset the adverse effects of the Malabar Yard railroad improvements. The City requested additional community improvements, and Metro expanded the suite of community improvements to accommodate the City's requested improvements. Metro has evaluated these community improvements, and in consideration of the potential for impacts on the City of Vernon community, Metro is adopting these community improvements as OMMs. These measures would be required upon implementation of the Malabar Yard railroad improvements (Mitigation Measure TR-3). Mitigation Measure TR-3 allows for the possibility of declining to implement the Malabar Yard railroad improvements. In that situation, OMMs discussed in Final EIS Appendix Q, Environmental Evaluation of Malabar Yard Mitigation Section 3.16, Community Analysis would not be implemented.

Final EIS Appendix Q, Environmental Evaluation of Malabar Yard Mitigation Section 3.16, Community Analysis, discusses the potential for impacts from the Malabar Yard railroad improvements to a minority community in the City of Vernon. As described in that section, while impacts related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures, the adverse effects would be experienced by both minority communities (residents of City) and non-minority communities (people who work in the City).

The proposed OMMs were developed through engagement with the City of Vernon and would complement the City's planning initiatives as part of the Westside Zone Change and General Plan Amendment and further citywide goals and objectives. The OMMs are separate from the direct mitigation measures in the Final EIS; and separate from improvements required by local, state, or federal mandates. The process and evaluation of OMMs considered in the City of Vernon is described further in Appendix G, Offsetting Mitigation Measures of Appendix Q of the Final EIS.

The following list is a summary of the community improvements proposed as OMMs in the Final EIS:

- OMM MY SS-1: Train Detection Cameras.
- OMM MY SS-2: Mobile Emergency Operations Center (EOC).

- OMM MY SS-3: Communications and Radio Systems Upgrade.
- OMM MY NV-1: Quiet Zone Design and Physical Infrastructure.
- OMM MY NV-2: Quiet Zone Technical Support.
- OMM MY TR-7: High Visibility Crosswalk, Mid-Block Location.
- OMM MY TR-8. Intersection Crosswalk Improvements with Cool Street Paving.
- OMM MY TR-9: Bus Shelters.
- OMM MY TR-10: PTZ Smart Cameras, Software, and Screens for Monitoring.
- OMM MY TR-11. AI-Based Traffic Control System (Traffic System Upgrades).
- OMM MY TR-12. Metro Transit Oriented Communities Program Support.

ES.13 Unavoidable Adverse Effects

ES.13.1 National Environmental Policy Act Environmental Impact Statement

FRAs Procedures Section 14(o) and 40 CFR §1502.16 requires a discussion of any unavoidable adverse effects that cannot be avoided if the Project is implemented. Sections 3.2 through 3.15 of this Final EIS provide a detailed analysis of all direct and indirect effects related to construction and operation of the Build Alternative; identify feasible mitigation measures, where available, that could minimize adverse effects; and acknowledge if any unavoidable adverse effects would remain after implementation of applicable mitigation measures.

Table 9-14 in Chapter 9 of the Final EIS provides a summary of the NEPA effect determinations for each environmental topic area for the Build Alternative, the NEPA effect determinations for the Build Alternative Design Option, and a comparative evaluation with evidence to support how the scope of the proposed modifications as part of the Build Alternative Design Option is within the scope and associated environmental analysis of the Build Alternative, and how the environmental effects previously identified for the Build Alternative would be reduced or avoided with the Build Alternative Design Option. Table 9-14 also acknowledges if any unavoidable adverse effects would remain after implementation of applicable mitigation measures for the Build Alternative and Build Alternative Design Option.

Implementation of the Build Alternative would result in unavoidable adverse effects in the following topic areas:

- Noise – Construction (daytime and nighttime noise levels would exceed thresholds at William Mead Homes, Care First Village, Mozaic Apartments, and Metro Gateway Childhood Development Center)
- Cultural Resources – Construction and Operations (adverse effects on the following historic properties would occur during construction and remain throughout operation:

Archaeological Site CA-LAN-1575/H, Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge)

  - The Build Alternative Design Option avoids the adverse effect on Vignes Street Undercrossing.

- Paleontological Resources – Construction and Operations (adverse effect on paleontological resources if paleontologically sensitive sediments are encountered during excavation)

Implementation of the Malabar Yard railroad improvements (either Design Option at both locations) would result in unavoidable adverse effects in the following topic areas:

- Transportation – Operations (potential roadway hazard due to queuing)
- Safety and Security – Operations (potential increased response times for emergency service providers and roadway hazard due to queuing)
- Socioeconomics and Communities Affected – Operations (potential access restrictions to Stacy Medical Center)

ES.14 Summary of Project Benefits

The Build Alternative would improve operational efficiency, capacity, flexibility, and connectivity for trains using LAUS, which would provide the following benefits:

- Improved regional connectivity with one seat rides to key destinations in Southern California.
- Reduced train idling times resulting in shorter wait times and emissions reductions per train, improving the air quality within the Project study area.
- Creation of future retail and transit serving amenities.
- Improved pedestrian access to the train platforms and capacity for passengers connecting to various rail/transit services at LAUS with enhanced accessibility for passengers with disabilities.
- Reduced noise levels from existing train noise with the addition of sound walls at William Mead homes and Care First Village.
- Improved pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit.
- Increased tax revenues generated, along with higher employment and labor income, specifically:
- Increased annual local government tax revenues by $4.0 million (in 2019 dollars) under operations of the Build Alternative.

- Creation of more than 33,000 job years in Los Angeles County during the construction phase for the Build Alternative with job opportunities for low-income and minority populations.
- Creation of up to 146 new full time equivalent positions (including 96 retail jobs) at the concourse in the opening year with job opportunities for low-income and minority populations.
- Creation of an additional 25 full time equivalent positions associated with expanded Metrolink and Amtrak services and the introduction of CHSRA service after the opening year with job opportunities for low-income and minority populations.
- Indirect contribution to cumulative benefits for the region, including a reduction of greenhouse gas (GHG) emissions and vehicle miles traveled in the region.
- Remediation of hazardous materials encountered within the Project study area.

The Build Alternative Design Option would result in the following incremental benefits:

- Reduced cost based on value engineering process and identification of engineering design opportunities to maximize public benefits with reduced public expenditure.
- Changes to the proposed infrastructure in response to public comments received during the Draft EIS/SEIR 45-day public comment period related to historic preservation.
- Avoidance and reduced magnitude and intensity of Project-related environmental effects, as compared to the Build Alternative.

Benefits of Malabar Yard Railroad Improvements

The Malabar Yard railroad improvements would offset the permanent impacts due to loss of storage tracks at the BNSF West Bank Yard. The Malabar Yard railroad improvements and Metro's proposed community improvements in the City of Vernon would provide the following benefits:

- Fewer daily train movements, decreased local emissions, minimized traffic delays.
- Optimized emergency response times with less congestion on local roadways.
- Train detection cameras that provide real-time local emergency dispatch to identify trains approaching at-grade rail crossings.
- Upgraded communications and radio systems and a mobile Emergency Operations Center to provide rapid deployment to disaster areas or large-scale events while contributing to faster, more effective emergency response efforts.
- Enhanced community features with crosswalk improvements to improve visibility and enhance pedestrian and driver safety, bus shelters to improve accessibility, convenience, comfort and provide weather protection for passengers.

- Quiet zone infrastructure to reduce train horn noise, promote safety, enhance pedestrian connectivity, and improve quality of life for existing and future residents and businesses.
- Improved traffic control with road restriping to maintain traffic flow, AI-based traffic control system, and pan-tilt-zoom smart cameras to monitor traffic, roads, intersections, and enable first responders to quickly identify incidents.
- Reduced fuel consumption by rail and associated rail emissions.
- Redistribution of train movements would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place.
- Up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million in labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated.

ES.15 Areas of Controversy

During the public comment period for the NOI, various comment letters were received (see Appendix A of this Final EIS). In general, areas of potential controversy known to Metro include cultural resources and construction impacts (traffic, air quality, noise and vibration, hazardous materials, and water quality). These issues were considered in the preparation of this EIS, where appropriate, and are addressed in the environmental impact analysis presented in Sections 3.2 through 3.15 and Section 3.16 of this Final EIS. 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 Passenger Terminal, 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 (Cesar Chavez Avenue, First Street Viaduct, Fourth Street Viaduct, Seventh Street Viaduct, and Olympic Boulevard (Ninth Street) Viaduct).
- ***Construction Impacts*** – Concerns related to construction 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* – Potential air quality and health risk impacts on nearby sensitive receptors.
    - *Water Quality* – Storm water runoff and potential impacts on impaired water bodies (Los Angeles River).

- *Hazardous Materials* – There is the potential to encounter contaminated soils or other media contaminated with hazardous materials during construction.

During the Draft EIS/SEIR 45-day public comment period, various comment letters were received related to the Malabar Yard railroad improvements in the City of Vernon. Areas of potential controversy known to Metro include the outreach and stakeholder engagement activities performed, traffic impacts and the analysis methodology, sensitive receptors considered and localized air quality analysis for vehicle idling, public safety response times and emergency vehicle access, operational and physical impacts to businesses, and the analysis related to the 2023 Vernon Westside Zone Change and General Plan Amendment. These issues were considered in the preparation of this Final EIS, where appropriate, and are addressed in the environmental impact analysis presented in Volume III and Appendix Q of this Final EIS.

Areas of known controversy are briefly summarized below and addressed as key issue responses to comments in Volume III of this Final EIS:

- **Key Issue Response #1 – Stakeholder Engagement Activities in City of Vernon:** Multiple comments expressed concern that stakeholders and affected property owners were not informed about the proposed Malabar Yard railroad improvements and the environmental process associated with the Link US Project.
- **Key Issue Response #2 – Traffic Impact Analysis for Malabar Yard Railroad Improvements:** Multiple comments were received related to the traffic analysis prepared for the Malabar Yard railroad improvements in the City of Vernon. Comments received were in regard to the timing of the traffic impact analysis and collection of traffic counts during the COVID-19 pandemic, the geographic area of traffic impact analysis performed and why intersections and roadways between Soto Street and the Los Angeles Junction were not considered in the analysis, and potential for queuing to cause LOS-related traffic impacts.
- **Key Issue Response #3 – Sensitive Receptors Considered and Localized Air Quality Analysis for Vehicle Idling:** Multiple comments were received related to a potential increase in vehicle idling emissions upon implementation of the Malabar Yard railroad improvements within the City of Vernon. The commenters were concerned that the Draft EIS/SEIR only included an analysis of regional project-wide emissions and provided no analysis of localized vehicle idling emissions in the City of Vernon.
- **Key Issue Response #4 – Public Safety Response Times and Emergency Vehicle Access:** Multiple comments expressed concerns that the Malabar Yard railroad improvements would increase public safety response times and cause impacts to emergency vehicle access within the City of Vernon.
- **Key Issue Response #5 – Operational and Physical Impacts to Businesses in Vernon:** Multiple comments were received related to operational and physical impacts to businesses upon implementation of the Malabar Yard railroad improvements within the City of Vernon.

- **Key Issue Response #6 – Land Use and Planning Analysis Related to 2023 Vernon Westside Zone Change and General Plan Amendment (adopted July 2023):** Multiple comments were received related to consideration of the future land uses allowable as part of the 2023 Vernon Westside Zone Change and General Plan Amendment and the Project's consistency with future mixed-use residential land uses on the City's westside.

ES.16 Public Circulation and Review

Metro and CHSRA circulated the Draft EIS/SEIR for a 45-day public comment period that began on June 21, 2024, and ended on August 9, 2024. Public noticing of the Draft EIS/SEIR was distributed prior to and during the 45-day public comment period to affected local jurisdictions, State and federal agencies, tribes, community organizations, and individuals identified in the stakeholder database (Appendix R of this Final EIS). Public notice of the Draft EIS/SEIR was also included in local newspapers in areas potentially affected by the Project.

Open House and Public Hearing: After the release of the Draft EIS/SEIR and publication of a Notice of Availability in the FR/posting of the Notice of Availability with the County of Los Angeles, Metro and CHSRA held an open house and public hearing to explain the Project and the Draft EIS/SEIR analysis. All stakeholders who signed up to receive information at meetings, public events, on the Project website, or that called the information line, have been added to the database and were notified of the open house and public hearing. Announcement of the open house and public hearing date and location was in the Notice of Availability that was posted on CHSRA's website: https://hsr.ca.gov/programs/environmental-planning/local-agency-sponsored-projects and on https://www.linkunionstation.com/. Comments from the public were submitted at the public hearing via comment card or verbally and transcribed via court reporter.

Information regarding the open house and public hearing is provided below.

Date: July 9, 2024
Time: 6:00 – 8:00 PM
Location: Metro Headquarters,
One Gateway Plaza
Board Room, 3rd Floor
Los Angeles, California 90012

Metro posted Volume I: Draft EIS/SEIR and Volume II: Technical Appendices on its website for review, and electronic copies were also made available upon request at no cost. Metro also provided electronic copies to the NEPA cooperating and participating agencies and CEQA responsible and trustee agencies (including copies officially posted to the State Clearinghouse). Hard copies of the Draft EIS/SEIR and its Executive Summary were delivered at the following repository locations:

- LAUS/Metro Library – One Gateway Plaza, 15th Floor, Los Angeles, CA 90012

- LAUS/Metro Records Management Center – One Gateway Plaza, Plaza Level, Los Angeles, CA 90012
- High Speed Rail Authority Headquarters, 770 L Street, Suite 620 Sacramento, CA 95814
- Los Angeles Central Library – 630 West 5th Street, Los Angeles, CA 90071
- Chinatown Branch Library – 639 North Hill Street, Los Angeles, CA 90012
- Benjamin Franklin Branch Library – 2200 East 1st Street, Los Angeles, CA 90033
- Lincoln Heights Branch Library – 2530 Workman Street, Los Angeles, CA 90031
- Little Tokyo Branch Library – 203 South Los Angeles Street, Los Angeles, CA 90012
- William Mead Homes Administrative Office, 1300 Cardinal Street, Los Angeles, CA 90012
- Care First Village Administrative Office, 1060 North Vignes Street, Los Angeles, CA 90012
- Vernon City Hall, 4305 Santa Fe Avenue, Vernon, CA 90058

ES.16.1 Public Comment Summary

The public was given the opportunity to comment on the Draft EIS/SEIR during the 45-day public comment period and at the Open House/Public Hearing on July 9, 2024. Public comments were received verbally at the Public Hearing, and via email, regular mail, online comment form, written comment cards, and the Project hotline throughout the 45-day public comment period and after the public comment period up to February 19, 2025. The Public Hearing was conducted in English, with simultaneous translation offered in Spanish, Mandarin Chinese, Cantonese, and Japanese.

A total of 140 speaker cards, comments cards, email or online comments, and letters were received from 7 agencies, 9 organizations, and 123 individuals. Three emails from individuals with comments were received prior to start of the Draft EIS/SEIR public comment period and five emails from individuals with comments were received after the close of the Draft EIS/SEIR public comment period, which were considered as well. Comments from SCRRA, serving as a NEPA Cooperating Agency, were also received after the close of the Draft EIS/SEIR public comment period and comments from HACLA were also received after the close of the Draft EIS/SEIR public comment period. No comments were received from any tribes during the Draft EIS/SEIR public comment period. Table 6 in Volume III: Response to Comments of this Final EIS includes a list of agencies, organizations, and individuals that commented on the Draft EIS/SEIR.

CHSRA and Metro assessed and considered all substantive comments received on the Draft EIS/SEIR and made revisions to the environmental documentation in the Final EIS where appropriate. Responses to comments received are provided in Volume III of this Final EIS.

ES.16.2 Stakeholder Engagement After Draft EIS/SEIR Public Comment Period

After the Draft EIS/SEIR 45-day public comment period, based on comments received from the City of Vernon and community members and property owners in the City of Vernon, additional agency consultation and stakeholder engagement activities were conducted with the City staff, potentially affected property owners and tenants, and other community members to discuss various aspects of the Malabar Yard railroad improvements and to address concerns and comments raised during the public comment period related to the Malabar Yard railroad improvements.

After the Draft EIS/SEIR public comment period, Metro conducted eleven meetings with the City of Vernon to address comments raised during the Draft EIS/SEIR public comment period, comments raised by the Vernon Chamber of Commerce, and comments raised by affected property owners and tenants, and other community members. During each of the meetings with City staff, an emphasis was placed on the alternatives analysis process for the Malabar Yard railroad improvements, reduced train movements that would result in the City from the consolidated freight railroad operations, how fewer train movements on the Harbor Subdivision (parallel with Santa Fe Avenue) would complement the City's initiatives outlined in the Vernon Westside Zone Change and General Plan Amendment and enable quicker emergency response throughout the city, potential impacts on business operations, and community improvements that would further offset potential effects in the City.

In addition, Metro also conducted meetings with individual property owners and/or tenants potentially affected by the Malabar Yard railroad improvements and other community members that provided comments on the Draft EIS/SEIR during the public comment period to address specific concerns, some of which were raised as formal comments during the Draft EIS/SEIR public comment period. Metro conducted these meetings on site at each individual property, Vernon City Hall, or virtually. Between December 2024 and February 2025, Metro met with 10 of 11 property owners/tenants that would be directly impacted by the Malabar Yard railroad improvements and three additional property owners/tenants and/or representatives that are not directly impacted but provided comments on the Draft EIS/SEIR during the Draft EIS/SEIR public comment period. A list of the individual property owner meetings held is provided in Section 1.2.1 of Volume III of the Final EIS.

ES.17 Identification of Preferred Alternative

For the purposes of this EIS, the preferred alternative is the Build Alternative that includes Rail Yard Canopy Design Options 1 and 2 and the Build Alternative Design Option..

- The Build Alternative would meet the Project purpose and need, as stated in Section ES.8. The Build Alternative would increase the regional and intercity rail service capacity of LAUS, improve schedule reliability at LAUS, preserve current levels of freight rail operations, accommodate the planned HSR system in Southern California, increase the

passenger/pedestrian capacity, enhance the safety of LAUS and meet the multi modal transportation demands at LAUS. In addition, the Build Alternative would meet the Project's need generated by the forecasted increase in regional population and employment. The Build Alternative would also address operational, safety, and accessibility needs in and around LAUS that will be required to meet existing demand and future growth.

- The Build Alternative includes safety improvements at the North Main Street railroad crossing, new lead tracks north of LAUS, reconstruction of the Vignes Street and Cesar Chavez Avenue Bridges, an elevated rail yard with an expanded passageway, 10 run-through tracks for regional rail, inter-city rail, and high-speed rail, and removal of some BNSF storage tracks at the BNSF West Bank Yard.
- The Selected Alternative includes design options to the Build Alternative which would provide minor refinements to the above.

This preferred alternative was identified based on careful consideration of the environmental evaluation contained in this EIS, public comments received during and after the Draft EIS/SEIR 45-day public comment period, applicable NEPA requirements, objectives contained in federal, state and local plans, and cost. The No Action Alternative would not meet the Project's purpose and need or objectives contained in federal, state, and local plans.

ES.18 California High-Speed Rail Authority Decision-Making

CHSRA, as NEPA lead agency, will decide on the sufficiency of the effects analysis, feasibility of the mitigation measures, and if any identified adverse effects have been adequately mitigated to a level that is not adverse. CHSRA will consider issuing a Final EIS or a Combined Final EIS/Record of Decision.

A summary of the NEPA analysis for the Build Alternative (as described in full in Chapters 3.2 through 3.15 of this Final EIS), including a description of potential effects (construction, operations, and indirect) and applicable mitigation measures is provided in Table ES-1. A summary of the NEPA analysis for the Malabar Yard railroad improvements (as described in Chapter 3.2 through 3.15 of the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this Final EIS), including a description of potential effects (construction, operations, and indirect) and applicable mitigation measures is provided in Table ES-2. Table ES-3 provides a summary of the NEPA effect determinations for each environmental topic area for the Build Alternative, as well as NEPA effect determinations for the Build Alternative Design Option. A comparative evaluation that demonstrates the reduced magnitude and intensity of effects of the Build Alternative Design Option is also provided in Table ES-3. Pursuant to NEPA and the NEPA Assignment MOU between FRA and the State of California July 23, 2019 (renewed July 22, 2024), CHSRA serves as NEPA lead agency and is empowered to complete the NEPA environmental process with publication of a Record of Decision. The Record of Decision will

describe the Project and alternatives considered, describe the selected alternative, and identify the environmentally preferable alternative; make environmental findings and determinations with regard to the Endangered Species Act, Section 106 of the NHPA, and Section 4(f) of the USDOT Act of 1966; publish the FRA's air quality conformity determination pursuant to the Clean Air Act; and identify any required mitigation measures.

ES.19 Federal Railroad Administration Decision-Making

As established in the NEPA Assignment MOU, the FRA makes findings and determinations with regard to air quality conformity under the Clean Air Act (section 176(c)(4). Based on the quantitative analysis, the annual construction emissions, and annual net change in operational emissions for all analysis years considered for the Build Alternative and Build Alternative Design Option are below the general conformity *de minimis* levels with incorporated mitigation. FRA, on behalf of CHSRA, concluded that after mitigation, the *de minimis* levels for applicable criteria pollutants would not be exceeded upon implementation of the Build Alternative and therefore, formal Conformity Determination procedures are not required.

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.2, Land Use and Planning			
Topic 3.2-A: Alteration of land use patterns.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.2-B: Compatibility with existing or planned land uses.	*Construction* Adverse Effect • Construction activities that could occur near residential communities and commercial properties could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). *Operations* Adverse Effect • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). *Indirect* No Adverse Effect	*Construction* **TR-1** **Prepare a Construction TMP:** During the final engineering phase, 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 among the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, Los Angeles Unified School District, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. The signal timing at affected intersections and on- or off-ramps shall also be adjusted to reduce detoured traffic volumes and maintain traffic flow to the safest degree feasible. LADOT and Caltrans shall be notified in advance of street closures, detours, or temporary lane reductions. During planned closures, traffic shall be rerouted 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, and to maintain safe bicycle and pedestrian access during construction. 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 will	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements. • The contractor shall avoid concurrent closures of Cesar Chavez Avenue and Vignes Street north of LAUS. **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. A Construction Lighting Management Plan shall be prepared and coordinated with Metrolink Operations & Safety to ensure work-zone lights do not impact train engineers' vision or passengers on adjacent platforms. **AQ-1** **Fugitive Dust Control[1]:** 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 earthmoving, 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 earthmoving 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: • The construction contractor shall prepare and update on a monthly basis 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 NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures

		• 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.
		NV-1 **Construct Sound Walls:** As early as possible in the Project construction phase, including prior to any demolition, and in any event prior to substantial construction-related activities, Metro shall construct two permanent sound walls. The first sound wall shall be located between the William Mead Homes and the train tracks near the railroad right-of-way and shall extend up to 22 feet in height and 1,144 feet long to reduce operational noise impacts at William Mead Homes. The second sound wall shall be located between the Care First Village and the train tracks near the railroad right-of-way and shall extend up to 13 feet in height and 347 feet long to reduce operational noise impacts at Care First Village. The sound walls shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have a surface density of at least 4 pounds per square foot.
		NV-2 **Employ Noise- and Vibration-Reducing Measures during Construction:** The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Through weekly and monthly meetings with Metro and the contractor, the means and methods to comply with the overall contract specifications and applicable mitigation measures shall be discussed with Metro and applicable parties prior to implementation. Noise and vibration reduction measures to 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 construction activities and noise-sensitive receivers.
		  ○ Acoustic blankets or soundproof window inserts along facades of sensitive buildings as deemed necessary by the construction contractor.
		  ○ Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available.	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		○ When in use, locate equipment on the construction site as far away from noise-sensitive sites as possible. ○ Construct walled enclosures around especially loud activities or clusters of loud equipment (e.g., 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 loud operations to occur in the same time period. ▪ The total noise level produced would not be substantially 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). ○ Use vibratory rollers in static mode (vibrating motor turned down or off) when operating in close proximity to sensitive buildings. In an effort to keep construction noise levels below FTA's construction noise and 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, Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments, within approximately 300 feet of construction activities. Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance farther 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	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		available to respond to questions and complaints from the community or other interested groups. *Operations* **AES-1** **Aesthetic Treatments:** Retaining walls Segments 1 and 2 and the sound walls in Segment 1 of the Project study area shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes, Care First Village, 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 walls/sound walls to minimize the dominance and scale of the retaining walls/sound walls. Before construction is complete, Metro shall be responsible for the structural maintenance of the sound wall. In most cases, right-of-way agreements require the property owner to perform routine wall maintenance. Metro shall also enter into maintenance agreements with HACLA and Care First Village. Additionally, Metro shall collaborate with HACLA and Care First Village to determine the aesthetics and materials for the sound wall. **AES-3** **Screen Direct Lighting and Glare:** During final design, all new or replacement lighting shall comply with *Metro Rail Design Criteria* (Metro 2013), SCRRA *Design Criteria Manual* (SCRRA 2014), CHSRA design criteria, Illuminating Engineering Society standards (Illuminating Engineering Society 2011a, 2011b, 2014), maximum allowable CALGreen glare ratings (California Building Standards Code 2013 – Title 24, Part 11), and standards for new construction. In addition, all permanent lighting 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 incorporated into the design of the new canopies to reduce daytime glare impacts.	
Topic 3.2-C: Physical division of an established community.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* Adverse Effect • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River. • Conflict with one policy and program of the City of Los Angeles Mobility Plan 2035 and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. *Indirect* No Adverse Effect	*Operations* **LU-1** **Enhance Neighborhood Connectivity:** Consistent with the Los Angeles River Revitalization Master Plan, RIO Overlay District guidelines, LAUS Sustainable Neighborhood Assessment, City of Los Angeles Mobility Plan, Metro's LA River Path Project, and Metro's LAUS Forecourt and Esplanade Improvements Project, to mitigate the identified adverse effect/significant impact, Metro, in coordination with the City of Los Angeles, shall implement either Class II or IV type bike lanes that consist of only pavement striping and bollards (no additional ROW and no raised median will be required) along Commercial Street from Alameda Street to Center Street, enhancing neighborhood connectivity south of US-101. If additional funding is identified, a dedicated bicycle/pedestrian bridge over US-101 could be constructed in addition to the new bicycle lanes described above. **TR-3** **Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street):** Metro shall implement the following: A. Pursuant to Metro Board Motion 2025-0931, Malabar Yard Mitigations and Continued Collaboration Motion (Oct. 23, 2025), Metro shall collaborate with BNSF to explore potential alternative approaches to rail storage to mitigate NEPA/CEQA significant and adverse environmental impacts caused by the loss of BNSF tracks at the West Bank Yard. Any alternative approach, other than the Malabar Yard Railroad Improvements, must be approved by CHSRA, as NEPA lead agency. This collaboration process includes meeting with BNSF and the City of Vernon (together or separately as appropriate) to seek written commitments from BNSF that may minimize impacts to the City of Vernon. As part of Step A above, Metro shall retain an independent railroad consultant to update data and analysis that demonstrates the need for Malabar Yard Railroad Improvements to mitigate the significant environmental effects that would result from the removal of BNSF storage tracks at the West Bank Yard. This independent assessment shall be completed before any implementation of Malabar Yard improvements. On the basis of this independent assessment, Metro and CHSRA may determine, regardless of BNSF concurrence, whether the Malabar Yard Railroad Improvements continue to be needed as a mitigation. B. If Metro does not implement the Malabar Yard Railroad Improvements due to Step A above, Metro need not implement the measures in the City of Vernon identified in Table 2 of the Mitigation Monitoring and Reporting Program (MMRP) [Record of Decision Appendix A (MMRP), Table 2 (MMRP Malabar Yard Railroad Improvements)]. If the collaboration between Metro, the City of Vernon, and BNSF under step A or the analysis under Step A, above, do not result in any mitigation approach other than the Malabar Yard Railroad Improvements, then Metro shall implement Design Option 2 for the Malabar Yard Railroad Improvements as follows: • 49th Street Closure Design Option 2 - Hammerhead Cul-de-Sac: Closure of the 49th Street at-grade railroad crossing would accommodate approximately 3,350 track feet of freight storage capacity at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		• 46th Street Connector Design Option 2 - Northern Alignment: An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction. The timing for implementation and operation of the Malabar Yard Railroad Improvements shall be before elimination of tracks at the West Bank Yard unless Metro and CHSRA, as NEPA lead agency, mutually find and conclude removing those tracks first would not cause CEQA/NEPA significant and adverse environmental effects. Such a finding must be supported by a written analysis undertaken by Metro and approved by CHSRA for NEPA sufficiency, before the removal of BNSF storage tracks at West Bank Yard.	
Section 3.3, Transportation and Traffic			
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • Construction-related activities would result in temporary traffic delays and local street closures, resulting in potential hazards on local roadways and safety of multimodal facilities. • Construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #15: Vignes Street and Main Street and Intersection #27: Mission Road and Cesar Chavez Avenue, traffic delays would exceed the 2.5 second delay significance criteria per LADOT guidelines. *Operations* Adverse Effect • Operational traffic delays would exceed LADOT guidelines at Intersection #4: Center Street and Commercial Street. *Indirect Effects* No Adverse Effect	*Construction* Implement Mitigation Measure TR-1. *Operations* Implement Mitigation Measure LU-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-B: Design of existing roadways and intersections causing increased hazards	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US-101 would also 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. The on and off ramps at Commercial Street would also be subject to temporary lane width reductions. Additionally, short radius curves and/or short sight distances may occur during construction. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure TR-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Significant delays 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 result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure TR-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect • Construction of the expanded passageway and associated concourse-related improvements may result in detours and temporary accessibility disruptions to public transit and bicycle and pedestrian facilities. Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns may occur for passengers accessing the Gold Line, Red Line, and Purple Line and regional/intercity rail platforms during construction at LAUS. • 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). *Operations* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. Adverse Effect • Although the Build Alternative contributes to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, the Build Alternative would conflict with the City's Mobility Plan 2035 due to decreased connectivity between LAUS and neighborhoods surrounding LAUS that facilitate cycling and walking. *Indirect* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations.	*Construction* Implement Mitigation Measure TR-1. **TR-2** **Prepare Passenger Rail Operations Temporary Construction Staging Plan:** During final engineering design and prior to construction, Metro shall prepare an MOU with each current rail operator, including, but not limited to, SCRRA, LOSSAN, and Amtrak, to outline mutually agreed upon on-time performance goals to be achieved throughout construction, and how construction sequencing and railroad operational protocols shall be incorporated into applicable construction documents (plans and specifications). Prior to construction, Metro and the construction contractor shall prepare detailed temporary construction staging plans for each phase of construction that the contractor implements to maintain mutually agreed upon on-time performance goals 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 ensure that any rail-to-bus or rail-to-rail connections are uninterrupted throughout construction. Detailed temporary construction staging 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, SCRRA shall monitor on-time performance during construction and participate in weekly construction coordination meetings to ensure that the mutually agreed upon on-time performance is met. *Operations* Implement Mitigation Measure LU-1.	*Construction* No Adverse Effect *Operations* Beneficial Effect (Public Transit) No Adverse Effect (Bicycle and Pedestrian Facilities) *Indirect* Beneficial Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• The Build Alternative accommodates future roadway improvements, including future active transportation and enhanced mobility improvements identified in the City of Los Angeles' *Mobility Plan 2035*.		
Topic 3.3-E: Freight	*Construction* Adverse Effect • Removal of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard will cause operational inefficiencies when BNSF operates longer trains. *Operations* Adverse Effect • Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF will cause operational inefficiencies when BNSF operates longer trains. *Indirect* Adverse Effect • A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard from construction and operations would indirectly affect operations at other freight rail yards by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards.	*Construction* Implement Mitigation Measure TR-3. *Operations and Indirect* Implement Mitigation Measure TR-3.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.4, Visual Quality and Aesthetics			
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* Beneficial Effect • Visual Assessment Unit #6: Viewer groups are anticipated to have a positive response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS. Adverse Effect • Visual Assessment Unit #1: Construction of a sound wall on top of the retaining wall at William Mead Homes and along Care First Village would result in a moderately-high level of resource change and a high level of viewer response. This would result in a high visual impact. • Visual Assessment Unit #3: Viewer response would be moderately-high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. A moderate level of resource change combined with a moderately-high level of viewer response would result in a moderately-high visual impact.	*Operations* Implement Mitigation Measure AES-1.	*Construction* No Adverse Effect *Operations* Beneficial Effect (Visual Assessment Unit #6) No Adverse Effect (Visual Assessment Units #1 - #5) *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Effects No Adverse Effect		
Topic 3.4-B: Light or Glare	*Construction* Adverse Effect • Direct effects on nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting during the nighttime hours. *Operations* Adverse Effect • If not properly designed and installed, light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure AES-2. *Operations* Implement Mitigation Measure AES-3.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.5, Air Quality and Global Climate Change			
Topic 3.5-A: General Conformity *de minimis* levels for the South Coast Air Basin	*Construction* Adverse Effect • Fugitive dust emissions generated on-site. • The total annual construction emissions associated with the Build Alternative and Malabar Yard railroad improvements would exceed the *de minimis* level for NOx. *Operations* Adverse Effect • NOx emissions would exceed the *de minimis* level in years 2026 and 2031. *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads.	*Construction* Implement Mitigation Measure AQ-1 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-1 (same as Mitigation Measure AQ-1 but applicable to Malabar Yard railroad improvements in City of Vernon). Implement Mitigation Measure AQ-2 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-2 (same as Mitigation Measure AQ-2 but applicable to Malabar Yard railroad improvements in City of Vernon). *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 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	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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's thresholds, the regional and intercity rail operators, in coordination with Metro, who has authority as the owner of Union Station, 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), 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.	
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions.		
Section 3.6, Noise and Vibration			
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* Adverse Effect • Construction noise effects at William Mead Homes and Care First Village associated with construction of the sound wall. • Construction-related noise effects would occur at Category 2 land uses (i.e., residential) because applicable FTA thresholds would be exceeded during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. • The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit: o William Mead Homes - 41 dwelling units and one recreational use; o Care First Village - approximately 36 dwelling units and a playground/park; o Mozaic Apartments - 82 dwelling units; and, o Metro Gateway Childhood Development Center. *Operations* Adverse Effect • In the 2031 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. • In the 2040 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures NV-2 and NV-3. *Operations* Implement Mitigation Measure NV-1.	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* Adverse Effect • Construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller. A severe impact may occur at William Mead Homes, Care First Village, and the Mozaic Apartments from an annoyance perspective.	*Construction* Implement Mitigation Measures NV-2 and NV-3.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations No Adverse Effect *Indirect* No Adverse Effect		
Section 3.7, Biological and Wetland Resources			
Topic 3.7-A: Federally and State listed or candidate plant or animal species	*Construction* Adverse Effect • Construction may involve removal of naturally occurring or ornamental trees, track work, and bridge modifications at Vignes Street and Cesar Chavez Avenue which could disturb western mastiff bat and western yellow bat that may use these areas to roost. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*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 and/or CDFW-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 and/or CDFW-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	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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, generally when temperatures drop below 40 degrees Fahrenheit, (approximately November 1) or as determined by a qualified bat biologist). Should removal of mature trees that provide suitable bat roosting habitat be necessary after the cold weather, a qualified bat biologist shall conduct pre-construction surveys when temperatures are greater than 40 degrees Fahrenheit to ensure that bats are not present during removal. • When removing palm trees, the dead fronds shall be removed first before felling the palm to allow any bats to escape.	
Topic 3.7-B: Nesting birds protected by the MBTA	*Construction* Adverse Effect • Direct effects on an active nests, including removal of mature trees and bridge improvements could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.	*Construction and Indirect* **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 and/or CDFW approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat throughout the BSA. 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, buildings, or other structures 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, buildings, or other structures 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, buildings, or other structures 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. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials 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. All Project personnel and contractors who will be on site during construction shall complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on biological and potentially jurisdictional resources. At a	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		minimum, the training shall include the following topics: (1) locations where special status-species may occur; (2) the purpose for resource protection; (3) protective measures to be implemented in the field; (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.	
Topic 3.7-C: Wildlife movement	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.7-D: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Build Alternative could result in the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. *Operations* No Adverse Effect *Indirect* Adverse Effect • 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.	*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 the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) and LA Metro's Tree Policy, including oaks (Valley Oak [*Quercus lobata*], California Live Oak [*Quercus agrifolia*], or any other tree of the oak genus indigenous to California but excluding the Scrub Oak [*Quercus berberidifolia*]), southern California black walnut (*Juglans californica*), western sycamore (*Platanus racemora*), and California bay (*Umbellularia californica*) 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. 186873. 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.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.8, Floodplains, Hydrology, and Water Quality			
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect	*Construction* **HWQ-1** **Prepare and Implement a SWPPP:** During construction, Metro 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, which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. Construction activities shall not commence until a waste discharger identification number is received	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• An increase of impervious surfaces could cause downstream erosion and increases in suspended particles and sediment that would directly increase the turbidity of receiving waters. *Indirect* No Adverse Effect	from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during Project construction. Metro shall comply with the Risk Level 2 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 (Caltrans ROW):** Metro shall comply with the provisions of the Caltrans MS4 Permit (Order Number 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ) that was adopted June 22, 2022, and became effective January 1, 2023, and any applicable provisions of the Caltrans SWMP for long-term BMPs. 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 (Railroad ROW):** For the portion of the Project outside Caltrans ROW and not under the jurisdiction of the City of Los Angeles, 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). **HWQ-4** **Final Water Quality BMP Selection (City of Los Angeles):** Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (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 the 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.	
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • Sediments, 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 into the Los Angeles River. *Operations* Adverse Effect • Increased impervious area would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not managed properly.	*Construction* Implement Mitigation Measure HWQ-1. **HAZ-1** **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor 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).	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect No Adverse Effect	• 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). *Operations* Implement Mitigation Measures HWQ-2 through HWQ-4.	
Topic 3.8-C: Flooding	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect	*Construction* Implement Mitigation Measure MM HWQ-1. **HWQ-5** **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. **HWQ-6** **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	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Los Angeles. *Operations* Implement Mitigation Measures HWQ-2 through HWQ-4. *Indirect* Implement Mitigation Measures HWQ-1 through HWQ-6 and; **HWQ-7** **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, as amended by Order No. 2015-0122-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.	
Section 3.9, Geology, Soils, and Seismicity			
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-B: Soil erosion	*Construction* Adverse Effect • Loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. *Operations* No Adverse Effect *Indirect* Adverse Effect • If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality.	*Construction* Implement Mitigation Measure HWQ-1. *Indirect* Implement Mitigation Measures AQ-1 and HWQ-1. **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 the 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 and environmental 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, TPH, PCBs, 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	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure		NEPA Effect Determination After Implementation of Mitigation Measures
			under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites.	
Topic 3.9-C: Subsidence, lateral spreading, and corrosive or unstable soils	*Construction* Adverse Effect • Due to presence of compressible layers within the upper 30 feet of soil where infrastructure improvements are proposed in Segment 2 of the Project study area, settlement, both long-term and immediate, is anticipated. • Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of corrosive soils to be exposed during construction. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.	**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; and • Grading practices. The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. 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 Project related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria Manual, 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. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report upon approval by Metro.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-D: Expansive soils	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.		*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.10, Hazardous Waste and Materials				
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect	*Construction* Implement Mitigation Measure HAZ-1.		*Construction* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. • The use of hazardous materials and substances would be required during construction, if a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect		*Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • A total of 13 sites (8 RECs, 2 Historic RECs, and 3 Controlled RECs) were identified within and adjacent to the Project footprint. 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 during construction. • The Project footprint is located in proximity to two oil fields located approximately 0.5-mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil seeps and the accumulation of oil and methane gas also have the potential to occur within the Project footprint. • An accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures HAZ-1 and HAZ-2. **HAZ-3** **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor 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. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. 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, the contractor 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 is expected to vary widely across the Project footprint, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. 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, parcel-specific HASPs shall also be prepared by contractors undertaking work activities and submitted to and DTSC for approval. The HASPs shall be prepared to meet OSHA	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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 HASP 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 proposed infrastructure, and each of the contaminated sites. **HAZ-5** **LUC Sites and Coordination with the DTSC:** Prior to construction on properties with an 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 and the environment. **HAZ-6** **Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials or 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, underground storage tanks, asbestos containing materials (e.g., transite pipes), 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, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant shall be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and the survey report shall be submitted to the SCAQMD with an application for a Rule 1403 permit. 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	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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.	
Topic 3.10-C: Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* Adverse Effect • Transport and disposal of soil or other media contaminated with hazardous materials may result in an indirect effect to nearby schools during an accidental release.	*Indirect* Implement Mitigation Measures HAZ-1 through HAZ-8.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.10-D: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. • Seven sites near the Project footprint have land use restrictions associated with them. 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, which could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures HAZ-2, HAZ-4, and HAZ-5.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.11, Public Utilities and Energy			
Topic 3.11-A: Water supply and infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

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Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect • Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. *Operations* Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure HWQ-1. *Operations* Implement Mitigation Measures HWQ-2 through HWQ-4.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-C: Wastewater treatment capacity and infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-D: Solid waste collection and landfill capacity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-E: Telecommunications infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.11-F: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Build Alternative would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Section 3.12, Cultural and Paleontological Resources			
Topic 3.12-A: Built environment and unknown archaeological historic properties	*Construction* Adverse Effect • Adverse effects may occur on one archeological historic property (CA-LAN-1575/H) and three built environment historic properties (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.	*Construction* **CUL-1** **Archaeological Treatment Plan (ATP):** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in the analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the actions to be taken to resolve adverse effects on historic property CA-LAN-1575/H and the procedures to address inadvertent discoveries. The California SHPO, Caltrans, and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). The ATP shall include, at a minimum, the following elements: • **Research design** – The ATP shall include a robust research design to be used in evaluating whether archaeological features and deposits that may be encountered contribute to the NRHP eligibility of CA-LAN-1575/H under Criterion D, and in recovering scientific data from those features and deposits that are determined to contribute. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions. • **Site-specific sensitivity model** – The ATP shall include provisions for the development of a site-specific sensitivity model to guide efforts to avoid or minimize adverse effects on known portions of CA-LAN-1575/H. The sensitivity model shall compare Project-related infrastructure, based on final design, to available information on previous disturbance from as-built plans, historical maps, geotechnical borings, and past archaeological reports that identify fill depth. A three-dimensional model, a series of stratigraphic profiles, or other relatable graphic depiction shall be created to assist in determining the level of sensitivity for encountering buried archaeological features or deposits for each element of the Project design. Consulting tribes shall	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		have an opportunity to review the sensitivity model and provide insight informed by traditional tribal knowledge. • **Phased testing, evaluation, and data recovery of known features and deposits** – Based on the results of the site-specific sensitivity model, protocols for phased testing, significance evaluation, and data recovery of known features and deposits shall be developed. Due to the extreme constraints posed by the location of the Project (affecting public transportation through closure of roads, transit, etc.), testing shall occur as part of the preconstruction activities. The ATP shall include a summary of anticipated features and artifacts potentially associated with CA-LAN-1575/H, including references to the pertinent research domains and data requirements contained in the research design, as well as standards for documentation, evaluation, data recovery, and analysis. The ATP shall rely on OSHA requirements regarding the safety of testing, evaluation, and data recovery locations and the potential for encountering contaminated soils or other hazards. • **Archaeological and Native American monitoring** – The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction and provisions for determining monitoring locations based on final design, potential impacts to archaeological resources as assessed through the site-specific sensitivity model, and the potential to impact tribal resources including human remains that may be contained in both intact and disturbed contexts (e.g., previously disturbed soils or fill). The ATP shall include the requirement that archaeological monitoring take place under the supervision of an Archaeological Field Director meeting the minimum professional qualifications as defined in 2016 by the Society for California Archaeology, along with the demonstrated ability to identify human and non-human remains. The ATP shall also include requirements that all Archaeological Monitors for project construction have completed at least 12 semester units of undergraduate or graduate coursework in archaeology plus 12 months of archaeological-related field experience in California. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. • **Provisions for the inadvertent discovery of archaeological features or deposits** – The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant under Criterion D, then data recovery and analysis procedures outlined for known resources shall be implemented. • Provisions for the inadvertent discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony – The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner as determined through consultation with the Native American tribe identified by the Native American Heritage Commission as the Most Likely Descendant, and in accordance with applicable regulations. • **Public participation or outreach plan for CA-LAN-1575/H** – The ATP shall include provisions for the development of a public participation or outreach plan for	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		CA-LAN-1575/H that includes continued consultation with Native American tribes, cultural resource professionals, and other potential stakeholders, such as local historical societies. The plan may include preparation of visual/educational exhibits or murals within LAUS and development of an application for handheld electronic devices, 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. Any materials prepared for public distribution shall comply with applicable regulations regarding the confidentiality of culturally sensitive data and information about archaeological resources. • **Cultural resource WEAP training** – The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. • **Standards for reporting** – The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format*. • **Guidelines for curation** – The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79 and the California Guidelines for the Curation of Archeological Collections (May 7, 1993). • **Covenant for transfer of responsibilities under Section 5024 of the California Public Resources Code** – The ATP shall contain provisions for the negotiation of a covenant between the tribes, Caltrans, Metro and SHPO in order to transfer Caltrans' responsibilities under Section 5024 of the California Public Resources Code to Metro for the acquisition of the parcel in Caltrans ROW on the south side of U.S. 101 at Commercial Street, located within the boundary of archaeological site CA-LAN-1575/H. The covenant cannot be completed until the CEQA environmental document and Section 106 agreement documents have received SHPO concurrence, as the final mitigation measures must also be included in the covenant. **CUL-2** **Built Environment Treatment Plan (BETP):** Prior to construction, Metro shall retain a qualified architectural historian, herein defined as a person who meets the Secretary of the Interior's Professional Qualification Standards in Architectural History, to develop a BETP that details the actions to be taken to resolve adverse effects on the built environment historic properties. The California SHPO and continuing consulting parties with specific interest in the historic properties shall be afforded 30 days to review and comment on the draft BETP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised BETP shall be submitted to SHPO for 30-day review and concurrence. The BETP shall include, at a minimum, the following elements: • **HABS documentation** – The BETP shall include provisions for the documentation to HABS standards of LAUS character-defining features proposed for demolition or alteration. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards in History or Architectural History and submitted to the Library of Congress as an addendum to HABS CA-2158. The level of HABS documentation will be	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		selected by the National Park Service Regional Office and shall include, at a minimum, large-format photographic recordation and a written description of character-defining features of LAUS proposed for demolition or alteration that were not included in previous HABS documentation (HABS CA-2158, CA-2158-A, CA-2158-B, CA-2158-C, and CA-2158-D). At a minimum, the following character-defining features shall be reviewed for inclusion in this documentation: o Pedestrian passageway o Ramps o Railings o Platforms o Butterfly shed canopies o South retaining wall o Terminal Tower o Car Supply/Maintenance Building o Cesar Chavez Avenue Undercrossing o Vignes Street Undercrossing (this bridge, which was constructed as part of LAUS, does not require additional individual HABS documentation) • **Restoration of the existing LAUS passenger concourse** – The BETP shall include provisions for the restoration of the existing LAUS passenger concourse (west of the pedestrian passageway) to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration, where feasible, from an engineering and constructability standpoint. This includes possible redesign of the entrance to the Metro Red Line to be more compatible with the historic LAUS design. The Secretary of the Interior's Standards for Rehabilitation shall be followed where restoration is not feasible. • **Educational display for LAUS** – The BETP shall include provisions for the development of an educational display for LAUS that could be viewed by the public to demonstrate the history of LAUS and how it was used by past railroad passengers. Metro shall consider the feasibility of salvaging significant architectural details from LAUS for use in the educational display. • **Relocation of the Terminal Tower** – The BETP shall include provisions to evaluate the feasibility by a multi-disciplinary team (e.g., architectural historian, structural, civil, geotechnical, and railroad engineers) to reorient at grade, vertically raise, or relocate the Terminal Tower. If all of those preservation methods are determined infeasible by the multi-disciplinary team, the Terminal Tower will be demolished. • **Cesar Chavez Avenue Undercrossing, Vignes Street Undercrossing, and south retaining wall design plans** – The BETP shall include provisions for the development of design plans for the replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings and alterations to the south retaining wall that are compatible with the historic character of LAUS, including assessing the feasibility of rehabilitation options that preserve historically significant portions of these structures as design progresses. • **North Main Street Bridge design plans** – The BETP shall include provisions for the development of design plans for work on the character-defining features of North Main	

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		Street Bridge, including, but not limited to, its sidewalks, decking, and wingwalls, in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties with the objective of minimizing visual impacts of the proposed safety improvements to the historic character of the bridge, to the extent feasible. • **Design review** – The BETP shall identify parties—including SHPO, the City of Los Angeles Office of Historic Resources, and the City of Los Angeles Cultural Heritage Commission—to be consulted during early design phases of the Project regarding the following items: o alterations to or demolition of character-defining features of LAUS o restoration of the existing LAUS passenger concourse o educational display for LAUS o alterations to character-defining features of the North Main Street Bridge Metro shall take into consideration the feedback received in progressing the design to completion. • **Response plans** – The BETP shall include requirements for the development of protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources. *Indirect* Implement Mitigation Measure CUL-1.	
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Ground-disturbing construction activities with deeper excavations for proposed bridge structures may have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	*Construction and Indirect* **PAL-1** **Paleontological Mitigation Plan (PMP):** It is anticipated that Quaternary older alluvium or Puente Formation, which are geologic units that have a high sensitivity level, would be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. 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. Monitoring is not recommended for excavations that only impact artificial fill and Quaternary younger 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 activities in the immediate area (within a 25-foot radius of the discovery), and Metro's 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 consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in other areas of the Project site while evaluation and treatment of the	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Build Alternative

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by Metro's qualified paleontologist. **PAL-2** **Paleontological WEAP Training:** Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP. **PAL-3** **Curation**. Metro shall make arrangements for the curation in perpetuity of significant fossils recovered during construction 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 consolidates 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.	
Section 3.13, Economic and Fiscal Impacts			
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • During construction and operation, the Build Alternative would generate employment, labor income, and tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect
Section 3.14, Safety and Security			
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or construction within roadways) could increase emergency response times. *Operations* Beneficial Effect • During operations, the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA	*Construction* Implement Mitigation Measure TR-1.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect

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Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	requirements. Concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress. *Indirect* No Adverse Effect		
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. • Pedestrian and bicycle access to and from LAUS may 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). • Construction activities would potentially create air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. *Operations* Beneficial Effect • Replacement of the Vignes Street and Cesar Chavez Avenue bridges would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. • Proposed concourse-related improvements would increase passenger capacity, enhance safety and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. • Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements on Vignes Street and Cesar Chavez Avenue would also enhance pedestrian and bicycle safety. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures TR-1, AQ-1, and AQ-2.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect
Topic 3.14-C: Security conditions	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

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Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.15, Socioeconomics and Communities Affected			
Topic 3.15-A: Community facilities	*Construction* Adverse Effect • Based on the anticipated construction-related traffic delays, access to community facilities would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the Care First Village playground/park.	*Construction* Implement Mitigation Measure TR-1. *Indirect* Implement Mitigation Measure NV-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.15-B: Government services	*Construction* Adverse Effect • During construction, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in the vicinity of these affected roadways, especially US-101 and Alameda Street, could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. *Operation* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure TR-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.15-C: Population Growth	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

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Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.15-D: Business displacements and the economy	*Construction* Beneficial Effect • During construction, the Build Alternative would generate employment, labor income, and tax revenues. *Operations* Adverse Effect • Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. *Indirect* Beneficial Effect • The Build Alternative would increase tax revenue from business, wages paid to workers, and is expected to generate employment during construction and operations.	*Operations* Implement Mitigation Measure TR-3.	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Topic 3.15-E: Community character and cohesion	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Notes:
[1] Although construction of the Build Alternative or Malabar Yard railroad improvements would not exceed the de minimis levels for $PM_{2.5}$ and PM_{10}; Mitigation Measure AQ-1 would still be implemented as a requirement of the Link US Final EIR and Malabar Yard Mitigation Measure AQ-1 would also be implemented pursuant to SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts.
[2] As construction of the Malabar Yard railroad improvements would overlap the 6-year timeframe for the Build Alternative, construction emissions for both activities were combined.

ACM=asbestos-containing materials; ADA=Americans with Disabilities Act; ATP=Archaeological Treatment Plan; BETP=Built Environment Treatment Plan; BMP=best management practice; BSA=biological study area; CALGreen=California Green Building Standards; 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; CO2e=carbon monoxide equivalent; CP=control point; dBA=A-weighted decibels; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; FTA=Federal Transit Administration; GHG=greenhouse gas; HABS=Historic American Buildings Survey; HACLA=Housing Authority of the City of Los Angeles; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; HSR=high-speed rail; IGP=Industrial General Permits; LADOT=Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; LBP=lead-based paint; LEED=Leadership in Energy and Environmental Design; LID=low impact development; LOSSAN=Los Angeles-San Diego-San Luis Obispo; LUC=land use covenant; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MOU=memorandum of understanding; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; PCB=polychlorinated biphenyls; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RIO=River Improvement Overlay District; RTP=Regional Transportation Plan; RWQCB=Regional Water Quality Control Board; SCAG=Southern California Association of Governments; SCAQMD=South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion; SCRRA (or Metrolink)=Southern California Regional Rail Authority; SCS=Sustainable Communities Strategy; SHPO=State Historic Preservation Officer; SWMP=stormwater management plan; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; VOC=volatile organic compound; WEAP=worker environmental awareness program

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.2, Land Use and Planning			
Topic 3.2-A: Alteration of land use patterns	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.2-B: Compatibility with existing or planned land uses	*Construction* Adverse Effect • Construction activities for any combination of design options for Malabar Yard railroad improvements would result in temporary access disruptions to existing businesses, which could change the travel path to businesses by customers and delivery vehicles during construction. This temporary disruption in existing traffic circulation could result in land use incompatibilities from access restrictions to nearby businesses when road closures are required. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* **MY TR-1** **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon. Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, Los Angeles Unified School District, and emergency service providers to minimize construction-related vehicular and non-vehicular traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, 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 to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. 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, 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 or the contractor shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.2-C: Physical division of an established community	*Construction* No Adverse Effect *Operations* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect No Adverse Effect		*Indirect* No Adverse Effect
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.3, Transportation			
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard). *Indirect Effects* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. **MY TR-2** **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to temporarily restripe the westbound shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and add a right-turn overlap phase in the same direction. The temporary restriping shall remain in place for the duration of construction. Upon completion of the Malabar Yard railroad improvements, the lane shall be returned to its original condition as a shared through/right-turn lane and the right-turn overlap phase shall be eliminated. **MY TR-3** **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to restripe one eastbound through lane to an eastbound turn lane at Vernon Avenue. *Operations* Implement Mitigation Measure MY TR-3. **MY TR-4** **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall restripe the northbound shared through/right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard. **MY TR-5** **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall add a new westbound vehicular lane on Fruitland Avenue.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.3-B: Design of existing roadways and intersections causing increased hazards	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations resulting in temporary construction-related roadway hazards to motorists, pedestrians, and bicyclists. *Operations* Adverse Effect • The New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. *Operations* **MY TR-6** **Obtain Required Approvals for At-Grade Railroad Crossings:** For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain required approvals from the City of Vernon and submit a Formal Application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 *CEQA Compliance*, the Formal Application shall include the Link US Final EIR (June 2019) and Final SEIR.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also impede access for emergency responders throughout construction. In addition, these two intersections are along a designated disaster route. *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may impede access for emergency responders throughout operations. Intersection #6 is located along a designated disaster route. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also impede access for emergency responders. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measures MY TR-3 through TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect • Construction of any combination of design options for the Malabar Yard railroad improvements would require temporary road closures within the traffic study area and may potentially affect public transit and other non-motorized modes of travel. Construction of any combination of design options would require	*Construction* Implement Mitigation Measure MY TR-1. *Operations* Implement Mitigation Measure MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	detour routes and temporary traffic disruptions that may cause decreased performance for transit operators or subject pedestrians and bicyclists to hazardous conditions near work zones. *Operations* Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also cause schedule delays to transit services or disruption of pedestrian and bicycle access. *Indirect* No Adverse Effect		*Indirect* No Adverse Effect
Topic 3.3-E: Freight	*Construction* No Adverse Effect *Operations* Beneficial Effect • Operation of any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency through 2040 for BNSF because local box and tanker train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction. *Indirect* Beneficial Effect • Any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency by eliminating the need to operate on the same track as passenger trains. The increase in operational efficiency is considered a long-term benefit.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect
Section 3.4, Visual Quality and Aesthetics			
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.4-B: Light or Glare	*Construction* No Adverse Effect *Operations*	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations*

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	No Adverse Effect *Indirect* No Adverse Effect		No Adverse Effect *Indirect* No Adverse Effect
Section 3.5, Air Quality and Global Climate Change			
Topic 3.5-A: General Conformity *de minimis* levels for the South Coast Air Basin	*Construction* No Adverse Effect *Operations* Beneficial Effect • Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel resulting in reduced fuel consumption by rail and associated rail emissions. In addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth, thereby avoiding the diversion of rail served demand to long haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and associated truck emissions. From a localized perspective, implementation of the 46th Street Connector would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place. *Indirect* Beneficial Effect • Implementation of the railroad improvements would aid in the overall reduction of criteria air pollutant emissions through regional VMT reductions. The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	*Construction* Although not required, Malabar Yard Mitigation Measure AQ-1 and MY AQ-2 are applicable because Malabar Yard railroad improvements would be constructed at the same time as construction of the Build Alternative. When combined, there would be an exceedance of NOx during construction. Implementation of MY AQ-2 would reduce NOx emissions below the *de minimis* levels. MY AQ-1 is a requirement of the Link US Final EIR for the Build Alternative and SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts. **MY 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 earthmoving, 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 earthmoving 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: • The construction contractor shall prepare and update on a monthly basis 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	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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 the California Air Resources Board (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. **MY AQ-2** **Compliance with U.S. EPA's Tier 4 Final 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.	
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* Beneficial Effect • Any combination of design options for the Malabar Yard railroad improvements would result in a net reduction in regional CO_2 emissions because it would reduce train miles for empty intermodal railcars and reduce truck VMT. *Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would aid in the overall reduction of GHG emissions through regional VMT reductions. The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.6, Noise and Vibration			
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Section 3.7, Biological and Wetland Resources			
Topic 3.7-A: Nesting birds protected by the MBTA	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements has potential to affect nesting birds protected by the MBTA that are present in the BSA during construction. Direct effects on an active nest, including removal of mature trees could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects on an active nest may include increased risk of construction noise above ambient noise levels, vibration, excess dust, night lighting, and human encroachment, all of which may result in nest failure.	*Construction and Indirect* **MY BIO–1** **MBTA species:** During construction, 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 and/or CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. 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 adjusted based on species-specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. 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 buildings, or other structures that will be removed before the nesting	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		season (February 1 through September 30) to prevent nesting at the bridges, buildings, or other structures 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. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials 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. Metro's Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and Regional Water Quality Control Board [RWQCB] jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.	
Topic 3.7-B: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements could result in the removal or disturbance of native tree species protected under the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). The cutting and/or removal of any protected City-owned trees without a tree removal permit would conflict with the City of Vernon Tree Ordinance. *Operations* No Adverse Effect *Indirect* Adverse Effect • 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.	*Construction and Indirect* **MY BIO-2** **Protected Trees:** Prior to construction, City-owned trees (outside of private property) shall be identified and overlaid on Project footprint maps to determine which trees may be protected in accordance with the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). Prior to removal of any City-owned tree, Metro shall prepare a Tree Removal/Tree Protection Plan for review and approval by the City of Vernon Public Works Department that identifies: • Trees proposed to be cut or removed; • Trees proposed to be retained; and • Trees proposed to be provided in replacement of the trees that are to be cut or removed. All street trees shall be planted per the street tree master plan on file in the City of Vernon Public Works Department. In addition, all construction shall preserve and protect the health of trees to remain, relocated trees, and new trees planted to replace those removed in accordance with Section 12.24.090 of the City's Tree Ordinance.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.8, Floodplains, Hydrology, and Water Quality			
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, there would be an anticipated reduction in the rate of stormwater runoff entering the public storm drain system. However, there is still a potential for an adverse effect on drainage if not properly designed for and managed throughout operation. For example, some storm drains may receive more runoff than under existing conditions by concentrating runoff to certain areas. *Indirect* Adverse Effect • During construction and operations, implementation of any combination of design options for the Malabar Yard railroad improvements may result in potential soil erosion and may alter drainage patterns as it may be necessary for the contractor to reroute drainage around one or more construction areas.	*Construction* **MY HWQ-1** **Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements:** During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. 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. Metro or BNSF shall comply with the Risk Level 2 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 the SWRCB within 90 days of completion of construction and stabilization of the site. *Operations* **MY HWQ-5** **Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements:** For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (known as the Phase I Permit). Metro or BNSF shall also prepare a final LID report in accordance with the City of Vernon's *Low Impact Development Guidance Manual*. This document shall identify the required BMPs to be in place prior to Project operation and maintenance. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • 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 into the Los Angeles River. *Operations* Adverse Effect • Any reconstruction of impervious surfaces could affect stormwater runoff if not properly designed for and managed throughout operation.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HAZ-1** **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor 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 for the selected design options, 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).	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Adverse Effect • Construction of any combination of design options for the Malabar Yard railroad improvements may result in changes to existing drainage patterns and could result in in exceedances of the capacity of existing storm drains and stormwater facilities serving the area.	• 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; and (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). *Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HAZ-1, MY HWQ-1, and MY HWQ-5.	
Topic 3.8-C: Flooding	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HWQ-2** **Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements:** 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 Vernon. **MY HWQ-3** **Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements:** 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),	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Adverse Effect • For Design Option 1 at 46th Street, potential impacts could occur on two sites that currently have an active Waste Discharger Identification number under the Industrial General Permit (IGP), which includes the Flores Design (APN 6308-004-012, south side of 46th Street, between Pacific Boulevard and Seville Avenue) and Arcadia Leonis (APN 6308-004-012, southwest corner of 46th Street and Seville Avenue). These sites include active permits with provisions to treat stormwater discharges that include pollutants, and updates to the permit may be required to continue to operate under the same permit. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	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 Vernon. *Operations* Implement Mitigation Measures MY HWQ-5. *Indirect* **MY HWQ-4** **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements:** Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable.	
Section 3.9, Geology, Soils, and Seismicity			
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect • The Malabar Yard study area includes soils that are potentially liquefiable. Construction activities could lead to indirect effects associated with liquefaction, including displacements, and bearing capacity failures.	*Indirect* **MY 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; • Corrosive soils; • Structural foundations; and • Grading practices. The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. 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 Malabar Yard railroad improvements in accordance with the *Manual for Railway Engineering*, and applicable city codes. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-B: Soil erosion	*Construction* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations No Adverse Effect *Indirect* No Adverse Effect		*Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-C: Collapse due to the use of corrosive unstable geologic units or soils	*Construction* Adverse Effect • Due to the limited amount of site-specific geotechnical information available, construction activities may be subject to hydrocollapse. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-D: Expansive soils	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could result in uplift pressures that could lead to structural damage to both track improvements and signal, safety, and civil improvements. *Operations* Adverse Effect • The Malabar Yard railroad improvements would occur in an area with potentially expansive soils which could lead to structural damage from uplift pressures including sidewalk and pavement cracks and track damage. *Indirect* Adverse Effect • Over the Project's lifetime, expansive soils within the Malabar Yard study area may cause structural damage from uplift pressures including sidewalk and pavement cracks and track damage.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.10, Hazardous Waste and Materials			
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect • During construction, the use of hazardous materials and substances would be required, and hazardous wastes would be generated. If a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. • If contaminated soil and/or groundwater is encountered and is not adequately managed, potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction of the Malabar Yard railroad improvements. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY HAZ-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • Two high risk REC sites were identified in close proximity of the Malabar Yard railroad improvements and could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) during construction activities. • One REC site contains petroleum hydrocarbons and the second REC site contains chlorinated solvents (perchloroethylene and trichloroethylene). An accidental release of volatile contaminant vapors during excavation could pose a health hazard to construction employees, the public, and the environment. • An accidental release of asbestos containing materials or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY HAZ-1. **MY HAZ-2** **Prepare Phase II 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 for the selected design options that would be affected by excavation. Phase II activities shall consist of: • Collection of soil, groundwater, and soil vapor samples from borings, for geologic and environmental 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), polychlorinated biphenyls, 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 recommendations. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites. **MY HAZ-3** **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan:	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		• General worker health and safety procedures; • Dust control; • Management of soil stockpiles; • Traffic control; and • Stormwater erosion control using BMPs. **MY HAZ-4** **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP):** Prior to construction, the contractor shall prepare parcel-specific Soil Management Plans for known contaminated 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. The nature and extent of contamination is expected to vary widely across the Project footprint for the selected design options, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: • Soil disposal protocols; • Protocols governing the discovery of unknown contaminants; and • Management of soil on properties within the Project footprint of the selected design options with known contaminants. Prior to construction on individual properties with known contaminants, parcel-specific HASPs shall also be prepared by contractors undertaking work activities to be submitted to and approved 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 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 HASP 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 or BNSF shall coordinate 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. **MY HAZ-5** **Halt Construction Work if Potentially Hazardous Materials are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials are encountered. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, underground storage tanks, and ACM (e.g., transit pipes) encountered during the construction process.	

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		MY HAZ-6 **Pre-Demolition Investigation:** Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. 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.	
Topic 3.10-C: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with high-risk ratings could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* Adverse Effect • Potential indirect effects could occur in the event hazardous materials migrate into other properties while construction is occurring.	*Construction* Implement Mitigation Measures MY HAZ-1 and MY HAZ-2. *Indirect* Implement Mitigation Measures MY HAZ-2 through MY HAZ-4.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.11, Public Utilities and Energy			
Topic 3.11-A: Water supply and infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect	*Construction* Implement Mitigation Measure MY HWQ-1.	*Construction* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Construction-related changes in drainage patterns, including changes to the volume and rate of runoff, may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, drainage could be affected in a manner that could change the rate of stormwater runoff entering the public storm drain system. *Indirect* Adverse Effect • Potential alterations of drainage patterns and the rate of stormwater runoff entering the public storm drain system could indirectly affect water quality and existing drainage route connections.	*Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	*Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-C: Solid waste collection and landfill capacity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-D: Telecommunications infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-E: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• The Malabar Yard railroad improvements would accommodate current and anticipated future increases in rail/freight for the region, resulting in an indirect beneficial effect on energy resources.		
Section 3.12, Cultural and Paleontological Resources			
Topic 3.12-A: Built environment and unknown archaeological historic properties	*Construction* Adverse Effect • Ground-disturbing construction activities would occur in areas with elevated potential to contain buried archaeological sites. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect impacts may result from increased accessibility to buried archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Additionally, damage to improperly curated archaeological resources may occur.	*Construction and Indirect* **MY CUL-1** **Archaeological Treatment Plan (ATP).** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). The ATP shall include, at a minimum, the following elements: • **Research Design:** The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions. • **Archaeological and Native American Monitoring.** The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. • **Provisions for the Accidental Discovery of Archaeological Features or Deposits.** The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop-work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented. • Provisions for the Accidental Discovery of Human Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony. The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop-work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		• **Cultural Resource Worker Environmental Awareness Program (WEAP) Training.** The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. • **Standards for Reporting.** The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format*. • **Guidelines for Curation.** The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.	
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Deeper excavations have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but can be encountered at depths as shallow as 6 feet below the natural ground surface in the Malabar Yard vicinity). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	*Construction and Indirect* **MY PAL-1** **Paleontological Mitigation Plan (PMP).** It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full-time paleontological monitoring if excavations will 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 affect only artificial fill and Quaternary younger alluvium (Qa/Qal). The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery) and Metro's 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 consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in 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 Metro's qualified paleontologist. **MY PAL-2** **Paleontological WEAP Training.** Metro's qualified paleontologist shall prepare paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP. **MY PAL-3** **Curation.** Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction 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) 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 taxonomic 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.	
Section 3.13, Economic and Fiscal Impacts			
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues. o Design Option 1 is expected to generate 143 temporary jobs (representing $9.4 million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. o Design Option 2 is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.14, Safety and Security			
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Temporary roadway closures and detours could cause potential delays in response times for emergency vehicles. Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also affect response times, or performance objectives of emergency responders. *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect response times, or performance objectives of emergency responders during operations.	*Construction* Implement Mitigation Measures MY TR-1 through MY TR-3. *Operations* Implement Mitigation Measures MY TR-3 through MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may affect response times. *Indirect* No Adverse Effect		
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • There is a potential for safety risks to pedestrians and bicyclists due to the temporary detours and lane blockages that would affect local streets. Roadway modifications could affect accessibility to private driveways, parking areas, loading docks, sidewalks, and bike lanes during construction. *Operations* Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may expose pedestrians, bicyclists, or vehicles to accidents/incidents. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. *Operations* Implement Mitigation Measure MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.14-C: Security conditions	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.15, Socioeconomics and Communities Affected			
Topic 3.15-A: Community facilities	*Construction* Adverse Effect Temporary road closures and detours could cause potential delays for emergency vehicles to access Stacy Medical Center. In addition, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measure MY TR-3 through MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect access to the Stacy Medical Facility. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. *Indirect* No Adverse Effect		
Topic 3.15-B: Government services	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.15-C: Business displacements and the economy	*Construction* Beneficial Effect • Up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million is labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated. *Operations* No Adverse Effect *Indirect* Beneficial Effect • Wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally. • Operation of the 46th Street Connector would facilitate enhanced goods movement and freight service to existing and potentially new customers in the City of Vernon.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Section 3.16, Community Analysis			
Result in an adverse effect that is predominantly borne by a minority and/or	The Malabar Yard railroad improvements would not result in adverse effects related to land use and planning, visual quality and aesthetics, air quality and global climate change, noise and vibration, biological and wetland resources, floodplains, hydrology, and water quality, geology, soils, and seismicity, hazardous waste and materials, public utilities and energy, cultural and paleontological resources, and economic and fiscal impacts. Mitigation measures, best management practices (BMP), and compliance with federal, state, and local	*Construction* **MY TR-1 Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**	Adverse effects would not be predominantly borne by a minority community, a low-

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure		NEPA Effect Determination After Implementation of Mitigation Measures
a low-income community or Result in an adverse effect that will be suffered by the minority and/or low-income community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low-income community	requirements would minimize these adverse effects. No adverse effect on minority communities, low-income communities, or non-minority communities within the community analysis study area would occur. Effects related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures; however, minority communities, low-income communities, and non-minority communities are not located within Malabar Yard study area where the Malabar Yard railroad improvements would be implemented. Based the location of minority communities, low-income communities, and non-minority communities relative to the Malabar Yard study area, potential roadway hazards from vehicle queuing along Seville Avenue and the associated transportation, safety and security, and impacts on community facilities would primarily be experienced by the traveling public and people who work in the City of Vernon, which includes both populations that are and are not minority and/or low-income. The potential adverse effects related to transportation, safety, and community facilities would not be predominantly borne by a minority community, a low-income community, or a non-minority community, nor would they be appreciably more severe or greater in magnitude than adverse effects on non-minority or low-income communities; or vice-versa.	**MY TR-2**	**Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection**	income community, or a non-minority community, nor would there be adverse effects that are appreciably more severe or greater in magnitude on a minority community, a low-income community, or a non-minority community
		MY TR-3	**Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**	
		MY AQ-1	**Fugitive Dust Control**	
		MY AQ-2	**Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment**	
		MY BIO-1	**MBTA species**	
		MY BIO-2	**Protected Trees**	
		MY HWQ-1	**Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements**	
		MY HWQ-2	**Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements**	
		MY HWQ-3	**Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements**	
		MY HWQ-4	**Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements**	
		MY HAZ-1	**Prepare a Construction Hazardous Materials Management Plan (HMMP)**	
		MY HAZ-2	**Prepare Phase II ESA**	
		MY HAZ-3	**Prepare a General Construction Soil Management Plan**	
		MY HAZ-4	**Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP)**	
		MY HAZ-5	**Halt Construction Work if Potentially Hazardous Materials are Encountered**	
		MY HAZ-6	**Pre-Demolition Investigation**	
		MY GEO-1	**Prepare Final Geotechnical Report**	
		MY CUL-1	**Archaeological Treatment Plan (ATP)**	
		MY PAL-1	**Paleontological Mitigation Plan (PMP)**	
		MY PAL-2	**Paleontological WEAP Training**	
		MY PAL-3	**Curation**	
		Operation		
		MY TR-3	**Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**	
		MY TR-4	**Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)**	
		MY TR-5	**Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)**	
		MY TR-6	**Obtain Required Approvals for At-Grade Railroad Crossings**	

Table ES-2. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		MY HWQ-5 Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements **MY GEO-1 Prepare Final Geotechnical Report**	
Section 3.17, Section 4(f)			
Use of Section 4(f) resources (permanent use, temporary occupancy, constructive use)	The Section 4(f) determination for the Malabar Yard railroad improvements is that no Section 4(f) use would occur for the National Register of Historic Properties-eligible Solar Manufacturing Corporation Building in Vernon, California. No direct or indirect impacts that could result in a permanent incorporation, temporary occupancy, or constructive use of this property have been identified and the improvements do not hinder the preservation of the property. Therefore, no use of this resource would be required to implement the Malabar Yard railroad improvements, and no further analysis is required. On November 20, 2023, the State Historic Preservation Officer (SHPO) concurred with the findings and conclusions outlined in the Link US Finding of Effect Report (Appendix M of the Link US EIS).	No Mitigation Measures are required.	No Use

Notes:
ACM=asbestos-containing materials; ATP=Archaeological Treatment Plan; BMP=best management practice; CARB=California Air Resources Board; CBC=California Building Code; CCR=California Code of Regulations; CDFW=California Department of Fish and Wildlife; CFR=Code of Federal Regulations; CGP=construction General permit; CO2e=carbon monoxide equivalent; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; GHG=greenhouse gas; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; IGP=Industrial General Permits; LBP=lead-based paint; LID=low impact development; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RWQCB=Regional Water Quality Control Board; SCAQMD=South Coast Air Quality Management District; SHPO=State Historic Preservation Officer; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; V/C=volume-to-capacity; VOC=volatile organic compound; WEAP=worker environmental awareness program

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Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Section 3.2, Land Use and Planning							
Topic 3.2-A: Alteration of land use patterns	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option is in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not alter existing land use patterns, and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-B: Compatibility with existing or planned land uses	*Construction* Adverse Effect • Construction activities that could occur near residential communities and commercial properties could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). *Operations* Adverse Effect • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP AES-2 Minimize Nighttime Work and Screen Direct Lighting 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 NV-1 Construct Sound Walls NV-2 Employ Noise and Vibration Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction activities that could occur near residential communities and commercial properties could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). *Operations* Adverse Effect • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP AES-2 Minimize Nighttime Work and Screen Direct Lighting 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 NV-1 Construct Sound Walls NV-2 Employ Noise and Vibration Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option is in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in magnitude of effects related to compatibility with existing or planned land uses due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it would result in a decrease in the magnitude of effects related to temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions) for Care First Village and other nearby residential land uses. LAUS and Rail Yard • Construction-related effects to land use incompatibilities would be reduced in magnitude raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. • Operational effects from light and glare near Mozaic Apartments and other residential communities would be reduced in magnitude and intensity due to reduced canopy coverage (Individual Canopies). South of LAUS • Reduction in the magnitude of the effects from traffic delays during the construction period from reduced

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
		AES-3 Screen Direct Lighting and Glare			AES-3 Screen Direct Lighting and Glare		run-through tracks and reduced width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-C: Physical division of an established community	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar—** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would result in a decrease in overall scope and scale of the project, effects would be similar and no adverse effect would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* Adverse Effect • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River. • Conflict with one policy and program of the City of Los Angeles Mobility Plan 2035 and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of	*Operations* LU-1 Enhance Neighborhood Connectivity TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* No Adverse Effect *Operations* Adverse Effect • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River. • Conflict with one policy and program of the City of Los Angeles Mobility Plan 2035 and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of	*Operations* LU-1 Enhance Neighborhood Connectivity TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would conflict with plans that promote non-motorized connections from LAUS to the Los Angeles River and with one policy and program of the City of Los Angeles Mobility Plan 2035 and three goals and one policy of the California Transportation Plan 2040 related to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. Although the Build Alternative Design Option would result in a decrease in overall scope and scale of the project, effects would be similar and no adverse effects would occur after mitigation. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. *Indirect* No Adverse Effect			freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. *Indirect* No Adverse Effect			significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.3, Transportation and Traffic							
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • Construction-related activities would result in temporary traffic delays and local street closures, resulting in potential hazards on local roadways and safety of multimodal facilities. • Construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #15: Vignes Street and Main Street and Intersection #27: Mission Road and Cesar Chavez Avenue, traffic delays would exceed the 2.5 second delay significance criteria per LADOT guidelines. *Operations* Adverse Effect • Operational traffic delays would exceed LADOT guidelines at Intersection	*Construction* TR-1 Prepare a Construction TMP *Operations* LU-1 Enhance Neighborhood Connectivity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction-related activities would result in temporary traffic delays and local street closures, resulting in potential hazards on local roadways and safety of multimodal facilities. • Construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #27: Mission Road and Cesar Chavez Avenue, traffic delays would exceed the 2.5 second delay significance criteria per LADOT guidelines. *Operations* Adverse Effect • Operational traffic delays would exceed LADOT guidelines at Intersection #4: Center Street and Commercial Street.	*Construction* TR-1 Prepare a Construction TMP *Operations* LU-1 Enhance Neighborhood Connectivity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction-related effects-related to traffic days that limit the effectiveness of the traffic circulation system when compared to the Build Alternative. This would be due to: North of LAUS • A reduction in the magnitude and intensity of traffic delays from retaining the existing Vignes Street Bridge instead of replacing it, resulting in significant traffic delays at two intersections (Intersection #15: Vignes Street and Main Street; Intersection #27: Mission Road and Cesar Chavez Avenue) during construction would remain the same since it is conservatively assumed that the construction related trips during the AM and PM peak periods would not change. Daily construction related trips would be reduced. LAUS and Rail Yard • Reduction in the overall magnitude and intensity of traffic delays & hazards during the construction period due to raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	#4: Center Street and Commercial Street. *Indirect Effects* No Adverse Effect			*Indirect Effects* No Adverse Effect			South of LAUS • Reduction in the magnitude of traffic delays during the construction period from reduced run-through tracks and the reduced width of run-through structure. Once operational, the Build Alternative Design Option would result in similar effects as the Build Alternative because the trip generation from retail and office land uses would be the same. Operational traffic delays would still exceed LADOT guidelines at Intersection #4: Center Street and Commercial Street. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.3-B: Design of existing roadways and intersections causing increased hazards	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US-101 would also 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. The on and off ramps at Commercial Street would also be subject to temporary lane width reductions. Additionally, short radius curves and/or short sight distances may occur during construction. *Operations* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US101 would also 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. The on and off ramps at Commercial Street would also be subject to temporary lane width reductions. Additionally, short radius curves and/or short sight distances may occur during construction. *Operations* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced -** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to the design of existing roadways and intersections causing increased hazards due to a reduction in project components, including: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, reducing the magnitude of hazards from fewer roadway detours and lane closures during construction. LAUS and Rail Yard • Fewer roadway detours and lane closures from construction of only 4 instead of 6 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet. South of LAUS • Construction of 8 run-through tracks on a single viaduct versus ten tracks on multiple viaducts, resulting in reduced magnitude of effects from temporary closures of US-101 during the night. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Indirect No Adverse Effect			*Indirect* No Adverse Effect			range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Significant delays at two 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 result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Significant delays at two intersections during construction would affect traffic along Commercial and Alameda, construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction-related delays for emergency access when compared to the Build Alternative due to: North of LAUS • The reconstruction of one bridge versus two bridges, resulting in a reduction of the magnitude of effects related to road closures and detours on emergency response and access during the construction period because Vignes Street would remain open during construction. LAUS and Rail Yard • Reduction in magnitude of effects related to road closures and detours and effects on emergency response and access during construction period from construction of only 4 rail yard platforms, not 6. South of LAUS • Reduction in the magnitude and intensity of effects on emergency response and access during the construction period from the reduced run-through tracks and width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect • Construction of the expanded passageway and associated concourse-related improvements may result	*Construction* TR-2 Prepare Passenger Rail Operations Temporary Construction Staging Plan	*Construction* No Adverse Effect *Operations* Beneficial Effect (Public Transit)	*Construction* Adverse Effect • Construction of the expanded passageway and associated concourse-related improvements may result	*Construction* TR-2 Prepare Passenger Rail Operations Temporary Construction Staging Plan	*Construction* No Adverse Effect *Operations* Beneficial Effect (Public Transit)	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction and operation related impacts to public transit, bicycle, or pedestrian facilities when compared to the Build Alternative due to:

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	in detours and temporary accessibility disruptions to public transit and bicycle and pedestrian facilities. Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns may occur for passengers accessing the Gold Line, Red Line, and Purple Line and regional/intercity rail platforms during construction at LAUS. • 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). *Operations* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations.	*Operations* LU-1 Enhance Neighborhood Connectivity	No Adverse Effect (Bicycle and Pedestrian Facilities) *Indirect* Beneficial Effect	in detours and temporary accessibility disruptions to public transit and bicycle and pedestrian facilities. Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns may occur for passengers accessing the Gold Line, Red Line, and Purple Line and regional/intercity rail platforms during construction at LAUS. • 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 at Cesar Chavez Avenue and modifications to local streets (including potential street closures and vacations). *Operations* Beneficial Effect • The Build Alternative Design Option will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. Adverse Effect • Although the Build Alternative Design Option	*Operations* LU-1 Enhance Neighborhood Connectivity	No Adverse Effect (Bicycle and Pedestrian Facilities) *Indirect* Beneficial Effect	North of LAUS • The construction of one bridge replacement versus two bridge replacements, resulting in less roadway closures and detours and temporary disruptions to pedestrian and bicycle facilities during construction of bridge improvements at only Cesar Chavez Avenue. LAUS and Rail Yard • Reduction in the magnitude of effects from hazardous conditions near construction work zones from raising of 4 rail yard platforms a maximum of 9 to 12 feet instead of 15 feet. • Reduction in the magnitude and intensity of disruptions to rail operators at LAUS and temporary disruptions to commuter daily travel from reduced concourse related improvements (elimination of West Plaza and reduced passageway width). South of LAUS • Reduction in the magnitude and intensity of construction related hazardous conditions from the reduced run-through tracks and width of run-through structure. Once operational, the Build Alternative Design Option would result in similar indirect beneficial effects to public transit, bicycle, or pedestrian facilities as the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Adverse Effect • Although the Build Alternative contributes to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, the Build Alternative would conflict with the City's Mobility Plan 2035 due to decreased connectivity between LAUS and neighborhoods surrounding LAUS that facilitate cycling and walking. *Indirect* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. • The Build Alternative accommodates future roadway improvements, including future active transportation and enhanced mobility improvements identified in the City of Los Angeles' *Mobility Plan 2035*.			contributes to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, the Build Alternative would conflict with the City's Mobility Plan 2035 due to decreased connectivity between LAUS and neighborhoods surrounding LAUS that facilitate cycling and walking. *Indirect* Beneficial Effect • The Build Alternative Design Option will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. • The Build Alternative Design Option accommodates future roadway improvements, including future active transportation and enhanced mobility improvements identified in the City of Los Angeles' *Mobility Plan 2035*.			
Topic 3.3-E: Freight	*Construction* Adverse Effect • Removal of approximately 5,500 feet of freight storage track capacity at	*Construction* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th	*Construction* No Adverse Effect *Operations*	*Construction* Adverse Effect • Removal of approximately 5,500 feet of freight storage track capacity at	*Construction* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th	*Construction* No Adverse Effect *Operations*	**Similar -** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would include 8 run-through tracks, it would not result in the loss of any additional freight storage track capacity at the

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	the north end of the BNSF West Bank Yard will cause operational inefficiencies when BNSF operates longer trains. *Operations* Adverse Effect • Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF will cause operational inefficiencies when BNSF operates longer trains. *Indirect* Adverse Effect A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard from construction and operations would indirectly affect operations at other freight rail yards by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards.	Street and 49th Street) *Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	No Adverse Effect *Indirect* No Adverse Effect	the north end of the BNSF West Bank Yard would cause operational inefficiencies when BNSF operates longer trains. *Operations* Adverse Effect • Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF would cause operational inefficiencies when BNSF operates longer trains. *Indirect* Adverse Effect A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard from construction and operations would indirectly affect operations at other freight rail yards by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards.	Street and 49th Street) *Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	No Adverse Effect *Indirect* No Adverse Effect	north end of the BNSF West Bank Yard (5,500 feet) when compared to the Build Alternative. The impact would be the same and would result in no adverse effects after mitigation. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.4, Visual Quality and Aesthetics							
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* Beneficial Effect • Visual Assessment Unit #6: Viewer groups are anticipated have a positive	*Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* Beneficial Effect (Visual Assessment Unit #6)	*Construction* No Adverse Effect *Operations* Beneficial Effect • Visual Assessment Unit #6: Viewer groups are anticipated have a positive	*Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* Beneficial Effect (Visual Assessment Unit #6)	**Reduced –** The Build Alternative Design Option would be located in the same, previously evaluated project footprint as the Build Alternative, but would result in an overall reduction in the magnitude of effects related to visual character or quality when compared to the Build Alternative due to: North of LAUS • The removal of the Vignes Street Bridge replacement (Visual Assessment Unit #2) would result in no

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS. Adverse Effect • Visual Assessment Unit #1: Construction of a sound wall on top of the retaining wall at William Mead Homes and along Care First Village would result in a moderately-high level of resource change and a high level of viewer response. This would result in a high visual impact. • Visual Assessment Unit #3: Viewer response would be moderately-high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. A moderate level of resource change combined with a moderately-high level of viewer response would		No Adverse Effect (Visual Assessment Units #1 - #5) *Indirect* No Adverse Effect	response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS. Adverse Effect • Visual Assessment Unit #1: Construction of a sound wall and retaining wall at William Mead Homes and a sound wall along Care First Village would result in a moderately-high level of resource change and a high level of viewer response. This would result in a high visual impact. • Visual Assessment Unit #3: Viewer response would be moderately-high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. A moderate level of resource change combined with a moderately-high level of viewer response would		No Adverse Effect (Visual Assessment Units #1 - #5) *Indirect* No Adverse Effect	change to the existing conditions regarding visual character and quality. Viewer response for commuters would be low instead of moderate, a low level of resource change would remain, and viewer response would be low instead of moderate as compared to the Build Alternative. Overall visual impact from Visual Assessment Unit #2 would be low instead of moderately low and the no adverse effect determination would remain as compared to the Build Alternative. • The construction of a sound wall along Care First Village, which would still result in a moderately-high level of resource change and viewer response, but the magnitude of effects would be reduced due to the elimination of the retaining wall at this location. • While bridge improvements would only be required at one bridge versus two, residents of Mozaic Apartments (Visual Assessment Unit #3) would still experience a moderately high level of viewer response from exposure to a larger bridge over Cesar Chavez Avenue. LAUS and Rail Yard • With the elimination of Rail Yard Canopy Design Option 2 (Grand Canopy over Rail Yard), the grand canopy would be removed from Key Views #4a and #4b under the Build Alternative Design Option, resulting in views that are the same to the existing condition at these key views. The no adverse effect determination at Visual Assessment Unit #4 would remain. • A reduction in the magnitude of impacts would occur for Visual Assessment Unit #6 from raising 4 rail yard platforms a maximum of 9-12 feet instead of 15, resulting in a shorter construction period. • View A would be eliminated from Visual Assessment Unit #6 with the elimination of West Plaza and the Grand Canopy Design Option. • Views B through F in Visual Assessment Unit #6 would display a reduction of visual enhancements from the reduction of the concourse-related improvements, resulting in slightly less beneficial effects. However, the overall effect determination of beneficial would remain.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	result in a moderately-high visual impact. *Indirect Effects* No Adverse Effect			result in a moderately-high visual impact. *Indirect Effects* No Adverse Effect			South of LAUS • Reduction in magnitude of construction related effects to visual quality from reduced width of run-through structure. Key Views #5a through #5e would show a substantial reduction in width of the portion of viaduct over US-101 (205-feet-wide with the Build Alternative versus 75-feet-wide with the Build Alternative Design Option). Visual impacts determinations would remain the same under the Build Alternative Design Option. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.4-B: Light or Glare	*Construction* Adverse Effect • Direct effects on nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting during the nighttime hours. *Operations* Adverse Effect • If not properly designed and installed, light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare. *Indirect* No Adverse Effect	*Construction* AES-2 Minimize Nighttime Work and Screen Direct Lighting *Operations* AES-3 Screen Direct Lighting and Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Direct effects on nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting during the nighttime hours. *Operations* Adverse Effect • If not properly designed and installed, light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare.	*Construction* AES-2 Minimize Nighttime Work and Screen Direct Lighting *Operations* AES-3 Screen Direct Lighting and Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to light and glare when compared to the Build Alternative due to: North of LAUS • A reduction in the magnitude and intensity of effects of light and glare during nighttime construction for residents of Care First Village. LAUS and Rail Yard • While bridge improvements would only be required at one bridge versus two, residents of Mozaic Apartments would still experience a moderately high level of viewer response from exposure to construction related light and glare impacts from the partial replacement of the Cesar Chavez Avenue Bridge. • During operation, the magnitude of effects from light and glare would be reduced due to the elimination of the West Plaza canopy and the Grand Canopy design option. • A reduction in the magnitude of impacts from nighttime glare would occur from raising 4 rail yard platforms a maximum of 9-12 feet instead of 15.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
				Indirect No Adverse Effect			The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.5, Air Quality and Global Climate Change							
Topic 3.5-A: General Conformity *de minimis* levels for the South Coast Air Basin	*Construction* Adverse Effect • Fugitive dust emissions generated on-site. • The total annual construction emissions associated with the Build Alternative and Malabar Yard railroad improvements would exceed the *de minimis* level for NOx. *Operations* Adverse Effect • NOx emissions would exceed the *de minimis* level in years 2026 and 2031. *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there	*Construction* AQ-1 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-1 (same as Mitigation Measure AQ-1 but applicable to Malabar Yard railroad improvements in City of Vernon). AQ-2 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-2 (same as Mitigation Measure AQ-2 but applicable to Malabar Yard railroad improvements in City of Vernon). *Operations* AQ-3 Adaptive Air Quality Mitigation Plan	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	*Construction* Adverse Effect • Fugitive dust emissions generated on-site. • The total annual construction emissions associated with the Build Alternative Design Option and Malabar Yard railroad improvements would exceed the *de minimis* level for NOx. *Operations* Adverse Effect • NOx emissions would exceed the *de minimis* level in years 2026 and 2031. *Indirect* Beneficial Effect • Once constructed, the Build Alternative Design Option could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there	*Construction* AQ-1 (for the Build Alternative Design Option) and Malabar Yard Mitigation Measure AQ-1 (same as Mitigation Measure AQ-1 but applicable to Malabar Yard railroad improvements in City of Vernon). AQ-2 (for the Build Alternative Design Option) and Malabar Yard Mitigation Measure AQ-2 (same as Mitigation Measure AQ-2 but applicable to Malabar Yard railroad improvements in City of Vernon). *Operations* AQ-3 Adaptive Air Quality Mitigation Plan	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Similar -** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The long-term regional benefits under the Build Alternative Design Option would continue to result in a net reduction in air pollutant emissions as people shift from driving to transit. The Build Alternative Design Option would result in approximately 15 percent less construction equipment usage from the elimination of two run-through tracks, Vignes Street Bridge improvements, and from construction of only 4 rail yard platforms, not 6. Less excavation would also be required as the expanded passageway would be reduced from a 140-foot width to 100-foot width (see Table 9-6). These reductions in construction activity would reduce the magnitude of air pollutant emissions associated with construction. The Build Alternative Design Option would not result in changes to railroad operations at LAUS compared to the Build Alternative. As such, operational characteristics such as train frequency, routing, and equipment type would remain the same, and no change in daily trip generation at LAUS is anticipated. Because operational activities would not differ, the associated emissions, including potential NO_x emissions and any exceedances of applicable air quality thresholds, would be the same as those evaluated for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	would be less vehicle congestion and delay on the roads.			would be less vehicle congestion and delay on the roads.			
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Similar** - The Build Alternative Design Option would be located in essentially in the same location and the within the same, previously evaluated project footprint as the Build Alternative. The reduced construction activity would result in approximately 15 percent less construction-related GHG emissions. The Build Alternative Design Option would not include modifications that would change the daily trip generation at LAUS from what was considered for the Build Alternative. The operational GHG emissions associated with the Build Alternative Design Option would be similar to those evaluated under the Build Alternative. The long-term regional benefits under the Build Alternative Design Option would continue to result in a net reduction in GHG emissions as people shift from driving to using transit. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.6, Noise and Vibration							
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards	*Construction* Adverse Effect • Construction noise effects at William Mead Homes and Care First Village associated with	*Construction* NV-1 Construct Sound Walls NV-2 Employ Noise- and Vibration-Reducing	*Construction* Adverse Effect *Operations* No Adverse Effect	*Construction* Adverse Effect • Construction noise effects at William Mead Homes associated with	*Construction* NV-1 Construct Sound Walls NV-2 Employ Noise- and Vibration-Reducing	*Construction* Adverse Effect *Operations* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in similar effects related to ambient noise when compared to the Build Alternative, but the magnitude would be reduced. North of LAUS

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Topic 3.6-C: Ambient noise levels	construction of the sound wall. • Construction-related noise effects would occur at Category 2 land uses (i.e., residential) because applicable FTA thresholds would be exceeded during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. • The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit: o William Mead Homes - 41 dwelling units and one recreational use; o Care First Village - approximately 36 dwelling units and a playground/park; o Mozaic Apartments - 82 dwelling units; and, o Metro Gateway Childhood Development Center. *Operations* Adverse Effect • In the 2031 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one	Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* NV-1 Construct Sound Walls	*Indirect* No Adverse Effect	construction of the sound wall. • Construction-related noise effects would occur at Category 2 land uses (i.e., residential) because applicable FTA thresholds would be exceeded during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. • The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit: o William Mead Homes - 17 dwelling units and one recreational use; o Care First Village - approximately 25 dwelling units and a playground/park; o Mozaic Apartments - 23 dwelling units; and, o Metro Gateway Childhood Development Center. *Operations* Adverse Effect • In the 2031 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one	Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* NV-1 Construct Sound Walls	*Indirect* No Adverse Effect	• Because the Vignes Street Bridge would not be replaced under the Build Alternative Design Option, approximately 23 dwelling units at Care First Village would be affected, compared to 36 dwelling units under the Build Alternative. This represents a reduction in the magnitude of units that would experience adverse noise effects from construction noise that would exceed the City's 75 dBA limit. • During operation, a similar magnitude of effects from noise would occur at William Mead Homes and Care First Village because daily train trips would not change. LAUS and Rail Yard • While bridge improvements would only be required at Cesar Chavez Avenue, residents of Mozaic Apartments would still experience similar adverse noise effects from construction noise that would exceed the City's 75 dBA limit. However, the magnitude of affected units at Mozaic Apartments would be reduced because fewer platforms would be raised in the partially elevated rail yard and the reduced extent of concourse improvements. This would result in 23 units that would be impacted under the Build Alternative Design Option versus 82 units under the Build Alternative. • Due to platform allocation of the Build Alternative Design Option, HSR trains would operate from Platform 3 and 4 instead of Platform 2 and 3. This shift would result in louder diesel-powered regional/intercity rail trains to operate in closer proximity the Mozaic Apartments, resulting in slightly higher exterior sound levels. As discussed in the Final EIS, impacts would not be adverse because interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower due to City building code requirements. Additionally, over 80 percent of 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. South of LAUS • Reduction in the magnitude of the effects from noise during the construction period from 8 versus 10

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	park/athletic field near William Mead Homes. • In the 2040 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. *Indirect* No Adverse Effect			park/athletic field near William Mead Homes. • In the 2040 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. *Indirect* No Adverse Effect		run-through tracks and reduced width of run-through structure. • Similar noise impacts would occur during operation because although the Build Alternative Design Option would include 8 run-through tracks, the daily train trips would not change when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* Adverse Effect • Construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller. A severe impact may occur at William Mead Homes, Care First Village, and the Mozaic Apartments from an annoyance perspective. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* NV-2 Employ Noise- and Vibration-Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller. A severe impact may occur at William Mead Homes and the Mozaic Apartments from an annoyance perspective. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* NV-2 Employ Noise- and Vibration-Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in a reduced magnitude of construction-related groundborne vibration and noise effects when compared to the Build Alternative. This would be due to: North of LAUS • Reduced magnitude of noise and vibration impacts because the Vignes Street Bridge would not be replaced and the throat tracks would not be elevated adjacent to Care First Village. LAUS and Rail Yard • Reduced magnitude of impacts to residents of the Mozaic Apartments during construction from the reduced extent of concourse related improvements, the construction of only 4 rail yard platforms, not 6, and the reduced width of the pedestrian passageway. Similar to the Build Alternative, no adverse effects related to groundborne vibration and groundborne noise levels would result during operation of the Build Alternative Design Option The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.7, Biological and Wetland Resources							
Topic 3.7-A: Federally and State listed or candidate plant or animal species	*Construction* Adverse Effect • Construction may involve removal of naturally occurring or ornamental trees, track work, and bridge modifications at Vignes Street and Cesar Chavez Avenue which could disturb western mastiff bat and western yellow bat that may use these areas to roost. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* BIO-1 Bats	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction may involve removal of naturally occurring or ornamental trees, track work, and bridge modifications at Cesar Chavez Avenue which could disturb western mastiff bat and western yellow bat that may use these areas to roost. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* BIO-1 Bats	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in reduced magnitude of impacts to Federally and State listed or candidate plant or animal species when compared to the Build Alternative due to: North of LAUS • The existing Vignes Street Bridge would remain instead of being replaced, and the magnitude of potential impacts on the western mastiff bat and western yellow bat roosting areas would be reduced. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7-B: Nesting birds protected by the MBTA	*Construction* Adverse Effect • Direct effects on an active nest, including removal of mature trees and bridge improvements could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction and Indirect* BIO-2 MBTA Species	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Direct effects on an active nest, including removal of mature trees and bridge improvements could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction and Indirect* BIO-2 MBTA Species	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in indirect effects to nesting birds from the reduced magnitude of construction noise, vibration, dust, night lighting, and human encroachment when compared to the Build Alternative. Additionally, construction of track and bridge improvements would only occur at Cesar Chavez Avenue. The existing Vignes Street Bridge would remain instead of being replaced, resulting in a reduced magnitude of direct effects to nesting birds protected by the MBTA that are present in the BSA during construction. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.			• Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.			or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7 C: Wildlife movement	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on wildlife movement would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7-D: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Build Alternative could result in the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. *Operations* No Adverse Effect *Indirect* Adverse Effect • Trenching, grading, soil compaction, and the	*Construction* BIO-3 Protected Trees *Indirect* BIO-3 Protected Trees	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction of the Build Alternative could result in the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. *Operations* No Adverse Effect *Indirect* Adverse Effect • Trenching, grading, soil compaction, and the	*Construction* BIO-3 Protected Trees *Indirect* BIO-3 Protected Trees	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option may require the removal or disturbance of one or more native tree species. The locations and sizes of all protected trees will be identified prior to construction to determine which trees may be removed or replaced in accordance with Ordinance No. 186873 and will not be removed without approval by the City of Los Angeles. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	placement of fill or impervious surfaces within the driplines of protected trees could lead to root damage ultimately resulting in death of the tree.			placement of fill or impervious surfaces within the driplines of protected trees could lead to root damage ultimately resulting in death of the tree.			
Section 3.8, Floodplains, Hydrology, and Water Quality							
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • An increase of impervious surfaces could cause downstream erosion and increases in suspended particles and sediment that would directly increase the turbidity of receiving waters. *Indirect* No Adverse Effect	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • An increase of impervious surfaces could cause downstream erosion and increases in suspended particles and sediment that would directly increase the turbidity of receiving waters. *Indirect* No Adverse Effect	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The effects to drainage patterns, soil erosion, and siltation would be reduced in magnitude and intensity when compared to the Build Alternative due to: North of LAUS • Decrease in magnitude of effects from erosion due to retaining the existing Vignes Street Bridge instead of replacing it. LAUS and Rail Yard • Decrease in construction related drainage pattern alterations and sediment accumulation from the reduced extent of concourse related improvements and reduced pedestrian passageway width. • Decrease in construction related drainage pattern alterations and sediment accumulation from the reduced elevated rail yard height with fewer rail yard platforms raised. South of LAUS • Decrease in construction related drainage pattern alterations and sediment accumulation from reduced run-through tracks and width of run-through structure. Once operational, there would be a decrease in the magnitude and intensity of effects to the turbidity of receiving waters when compared to the Build Alternative due to the reduced project extent and associated decrease in impervious surfaces associated with one less bridge being reconstructed, no West Plaza canopy, individual canopies and a narrower run-through track structure.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • Sediments, 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 into the Los Angeles River. *Operations* Adverse Effect • Increased impervious area would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not managed properly. *Indirect* No Adverse Effect	*Construction* HWQ-1 HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP) *Operations* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Sediments, 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 into the Los Angeles River. *Operations* Adverse Effect • Increased impervious area would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not managed properly. *Indirect* No Adverse Effect	*Construction* HWQ-1 HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP) *Operations* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, during construction, the Build Alternative Design Option would require excavation and site disturbance, which could expose soil, some of which would be contaminated soils, to temporary erosion from surface runoff exposure, contaminating water quality. However, the amount of grading, excavation, and disturbed surface area would be reduced because the refinements include a decrease in the disturbed surface area. This would result in an overall reduced magnitude and intensity of impacts to water quality during construction. Similar to the Build Alternative, construction activities would need to comply with the Los Angeles RWQCB Order No. R4-2021-0105, NPDES No. CAS004004. Compliance would minimize the potential for any discharges that could otherwise exceed existing wastewater treatment requirements. Once operational, an overall decrease in stormwater runoff is anticipated to result from a decrease in impervious surface area, which would decrease the volume of flow and capacity of on-site drainage systems when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Topic 3.8-C: Flooding	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, and would not introduce any new infrastructure in a flood hazard area or that would increase people's exposure to flooding. Overall effects related to flooding would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and	*Construction* HWQ-1 Prepare and Implement a SWPPP HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and	*Construction* HWQ-1 Prepare and Implement a SWPPP HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would require excavation and site disturbance during construction, which could expose soil to temporary erosion from surface runoff exposure, contaminating water quality. However, the amount of grading, excavation, and disturbed surface area would be reduced because the Build Alternative Design Option reflects a decrease in the scope and scale of the project. This would result in an overall reduced magnitude and intensity of effects related to water quality. Similar to the Build Alternative, construction of the Build Alternative Design Option would need to comply with the Los Angeles RWQCB Order No. R4-2021-0105, NPDES No. CAS004004. Compliance with these permits would minimize the potential for any discharges that could otherwise exceed existing wastewater treatment requirements. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	*Indirect* HWQ-1 Prepare and Implement a SWPPP HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites HWQ-7 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses		grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	*Indirect* HWQ-1 Prepare and Implement a SWPPP HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites HWQ-7 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses		or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.9, Geology, Soils, and Seismicity							
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, effects to seismic ground shaking or seismic-related ground failure, would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.9-B: Soil erosion	*Construction* Adverse Effect • Loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. *Operations* No Adverse Effect *Indirect* Adverse Effect • If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality.	*Construction* HWQ-1 Prepare and Implement a SWPPP *Indirect* AQ-1 Fugitive Dust Control HWQ-1 Prepare and Implement a SWPPP HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. *Operations* No Adverse Effect *Indirect* Adverse Effect • If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality.	*Construction* HWQ-1 Prepare and Implement a SWPPP *Indirect* AQ-1 Fugitive Dust Control HWQ-1 Prepare and Implement a SWPPP HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative during construction, the Build Alternative Design Option would require excavation and site disturbance, which could expose unprotected soils to erosion. However, the amount of grading and excavation and disturbed surface area would be reduced because the Build Alternative Design Option reflects a reduced project scope and scale. This would result in an overall reduced magnitude and intensity of effects from soil erosion. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.9-C: Subsidence, lateral spreading, and corrosive or unstable soils	*Construction* Adverse Effect • Due to presence of compressible layers within the upper 30 feet of soil	GEO-1 Prepare Final Geotechnical Report	*Construction* No Adverse Effect *Operations* No Adverse Effect	*Construction* Adverse Effect • Due to presence of compressible layers within the upper 30 feet of soil	GEO-1 Prepare Final Geotechnical Report	*Construction* No Adverse Effect *Operations* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the effects from subsidence, lateral spreading, and corrosive or unstable soils would be reduced when compared to the Build Alternative due to:

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	where infrastructure improvements are proposed in Segment 2 of the Project study area, settlement, both long-term and immediate, is anticipated. • Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of corrosive soils to be exposed during construction. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.		*Indirect* No Adverse Effect	where infrastructure improvements are proposed in Segment 2 of the Project study area, settlement, both long-term and immediate, is anticipated. • Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of corrosive soils to be exposed during construction. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.		*Indirect* No Adverse Effect	North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, resulting in less ground disturbance and less risk of corrosive soils to be exposed. LAUS and Rail Yard • Reduced concourse related improvements, including the reduced pedestrian passageway width and removal of the West Plaza, would result in less ground disturbance and less risk of corrosive soils to be exposed. South of LAUS • Slight increase in magnitude of effects of damage to bridge foundations because additional bents with deep foundations would be required to support the aerial viaduct from LAUS to the west bank of the Los Angeles River. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.9-D: Expansive soils	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Soils within the project footprint are considered to have a low expansion potential. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							likelihood of encountering expansive soils would remain low and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.10, Hazardous Waste and Materials							
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. • The use of hazardous materials and substances would be required during construction, if a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* Adverse Effect • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. • The use of hazardous materials and substances would be required during construction, if a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would decrease the overall scope and scale of the project, use of hazardous materials during construction would still be required. The risk of accidental release of hazardous materials from routine transport, use, or disposal if not properly managed would be reduced when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. Quantification of the reduction in hazardous materials transport, use, or disposal would depend on estimates of those quantities that are generally not available until the 100 percent design level.
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • A total of 13 sites (8 RECs, 2 Historic RECs, and 3 Controlled RECs) were	*Construction* HAZ-1 Prepare a Construction Hazardous Materials	*Construction* No Adverse Effect	*Construction* Adverse Effect • A total of 13 sites (8 RECs, 2 Historic RECs, and 3 Controlled RECs) were	*Construction* HAZ-1 Prepare a Construction Hazardous Materials	*Construction* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of the transport, use, or disposal of hazardous materials under the

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	identified within and adjacent to the Project footprint. 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 during construction. • The Project footprint is located in proximity to two oil fields located approximately 0.5-mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil seeps and the accumulation of oil and methane gas also have the potential to occur within the Project footprint. • An accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation	*Operations* No Adverse Effect *Indirect* No Adverse Effect	identified within and adjacent to the Project footprint. 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 during construction. • The Project footprint is located in proximity to two oil fields located approximately 0.5-mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil seeps and the accumulation of oil and methane gas also have the potential to occur within the Project footprint. • An accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment.	Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation	*Operations* No Adverse Effect *Indirect* No Adverse Effect	Build Alternative Design Option would be slightly reduced when compared to the Build Alternative due to: North of LAUS • The reduced extent of the throat track reconstruction beginning south of the Vignes Street Bridge would result in a reduced volume of excavation or disturbance of potentially contaminated soils. LAUS and Rail Yard • Reduced volume of excavation or disturbance of potentially contaminated soils for the concourse improvements and reduced width of pedestrian passageway • Reduced demolition activity from two fewer platforms being elevated. Quantification of the above reductions would depend on estimates of those quantities that are generally not available until the 100 percent design level. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The risk of hazardous materials being released into the environment was not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-1 through HAZ-8 are still considered sufficient to reduce the risk to No Adverse Effect.
Topic 3.10-C: Hazardous emissions or handling of hazardous waste or materials within 0.25	*Construction* No Adverse Effect *Operation* No Adverse Effect	*Indirect* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect	*Construction* No Adverse Effect *Operation* No Adverse Effect	*Indirect* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of effects from hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
mile of an existing or proposed school	*Indirect* Adverse Effect • Transport and disposal of soil or other media contaminated with hazardous materials may result in an indirect effect to nearby schools during an accidental release.	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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation	*Indirect* No Adverse Effect	*Indirect* Adverse Effect • Transport and disposal of soil or other media contaminated with hazardous materials may result in an indirect effect to nearby schools during an accidental release.	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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation	*Indirect* No Adverse Effect	would be reduced under the Build Alternative Design Option when compared to the Build Alternative due to the reduced extent of the throat track construction, partially elevated rail yard, fewer platforms demolished, and one less bridge being replaced. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The risk of hazardous emissions, waste, or materials being transported within 0.25 mile of a school was not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-1 through HAZ-8 are still considered sufficient to reduce the risk to No Adverse Effect.
Topic 3.10-D: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. • Seven sites near the Project footprint have land use restrictions associated	*Construction* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. • Seven sites near the Project footprint have land use restrictions associated	*Construction* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of the transport, use, or disposal of hazardous materials for the Build Alternative Design Option would be the reduced when compared to the Build Alternative due to: North of LAUS • The reduced extent of the throat track reconstruction beginning south of the Vignes Street Bridge would result in a reduced volume of excavation or disturbance of potentially contaminated soils.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	with them. 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, which could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect			with them. 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, which could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect			LAUS and Rail Yard • Reduced volume of excavation or disturbance of potentially contaminated soils for the concourse improvements and reduced width of pedestrian passageway. Quantification of the above reductions would depend on estimates of those quantities that are generally not available until the 100 percent design level. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The relative risks that hazardous materials sites pose to the Project were not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-2, HAZ-4, and HAZ-5 are still considered sufficient to reduce the risk to No Adverse Effect.
Section 3.11, Public Utilities and Energy							
Topic 3.11-A: Water supply and infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on water supply and infrastructure would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect	*Construction*	*Construction* No Adverse Effect	*Construction* Adverse Effect	*Construction*	*Construction* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The effects related to drainage capacity and

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. *Operations* Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. *Indirect* No Adverse Effect	HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Operations* No Adverse Effect *Indirect* No Adverse Effect	• Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. *Operations* Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. *Indirect* No Adverse Effect	HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Operations* No Adverse Effect *Indirect* No Adverse Effect	infrastructure would be reduced in magnitude and intensity when compared to the Build Alternative due to: North of LAUS • Decrease in the magnitude of construction changes in drainage patterns from the reduced extent of throat track reconstruction and retaining the existing Vignes Street Bridge instead of replacing it. LAUS and Rail Yard • Decrease in construction related drainage changes and impervious surfaces from reduced extent of concourse related improvements, including the elimination of the West Plaza, reduced canopy coverage, and reduced width of the pedestrian passageway. • Decrease in construction related drainage changes and impervious surfaces from raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet. South of LAUS • Decrease in construction related drainage changes and impervious surfaces from reduced width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-C: Wastewater treatment capacity and infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on wastewater treatment capacity and infrastructure would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-D: Solid waste collection and landfill capacity	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would reduce the overall scope and scale of the project components when compared to the Build Alternative, resulting in a reduction in the magnitude of waste generated during construction. Effects on solid waste collection and landfill capacity throughout operations would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-E: Telecommunications infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of project components when compared to the Build Alternative, effects on telecommunications infrastructure would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-F: Energy demand, infrastructure, and compliance with initiatives for	*Construction* No Adverse Effect *Operations* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect	*Construction* No Adverse Effect *Operations* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would result in beneficial effects related to energy demand, infrastructure, and compliance with initiatives for energy or energy efficiency as it would increase rail/transit

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
renewable energy or energy efficiency	*Indirect* Beneficial Effect • The Build Alternative would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources.		*Indirect* Beneficial Effect	*Indirect* Beneficial Effect • The Build Alternative Design Option would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources.		*Indirect* Beneficial Effect	for the region, resulting in an indirect beneficial effect on energy resources. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.12, Cultural and Paleontological Resources							
Topic 3.12-A: Cultural Resources	*Construction* Adverse Effect • Adverse effects may occur on one archeological historic property (CA-LAN-1575/H) and three built environment historic properties (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.	*Construction* CUL-1 Archaeological Treatment Plan (ATP) CUL-2 Built Environment Treatment Plan (BETP)	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction* Adverse Effect • Adverse effects may occur on one archeological historic property (CA-LAN-1575/H) and two built environment historic properties (Los Angeles Union Passenger Terminal and North Main Street Bridge). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.	*Construction* CUL-1 Archaeological Treatment Plan (ATP) CUL 2 Built Environment Treatment Plan (BETP)	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect	**Reduced** - The Build Alternative Design Option would be located in the same location as the Build Alternative and would result in similar effects to the built environment and known and unknown archaeological historic properties, but the magnitude and intensity would be reduced due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it would reduce the magnitude of effects to historic properties and require less ground disturbance, resulting in reduced effects to archaeological historic properties. LAUS and Rail Yard • Reduced width of expanded pedestrian passageway from 140 feet to 100 feet and elimination of the West Plaza would result in less ground disturbance and reduced potential for effects to archaeological historic properties. • Reduced elevated rail yard height with fewer platforms raised and only partial reconstruction of the Cesar Chavez Bridge would result in reduced physical effects to character-defining features of Los Angeles Union Passenger Terminal. • Reduced canopy coverage and change in type, limited to individual canopies over rail yard platforms would result in reduced visual effects to Los Angeles Union Passenger Terminal.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							South of LAUS • Construction of a single aerial viaduct from LAUS to the BNSF West Bank Yard instead of a combination of bridges and embankments would result in increased ground disturbance from bridge piles and increased potential for effects to archaeological historic properties. Overall, the Build Alternative Design Option would result in a decrease in the magnitude of effects related to cultural resources. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Ground-disturbing construction activities with deeper excavations for proposed bridge structures may have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction	*Construction and Indirect* PAL-1 Paleontological Mitigation Plan (PMP) PAL-2 Paleontological WEAP Training PAL-3 Curation	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Ground-disturbing construction activities with deeper excavations for proposed bridge structures may have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction	*Construction and Indirect* PAL-1 Paleontological Mitigation Plan (PMP) PAL-2 Paleontological WEAP Training PAL-3 Curation	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location as the Build Alternative and would result in similar effects to paleontological resources, but the magnitude and intensity would be reduced due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, resulting in reduced potential for ground disturbance in paleontologically sensitive deposits. LAUS and Rail Yard • Reduced width of expanded pedestrian passageway from 140 feet to 100 feet and elimination of the West Plaza, resulting in less potential for ground disturbance in paleontologically sensitive deposits. South of LAUS • Construction of a single viaduct structure instead of a combinations of aerial viaducts and embankments would result in increased potential for ground disturbance in paleontologically sensitive deposits from deep excavation for bridge piles. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	activities leading to potential resource looting or vandalism activities.			activities leading to potential resource looting or vandalism activities.			or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.13, Economic and Fiscal Impacts							
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • During construction and operation, the Build Alternative would generate employment, labor income, and tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect	*Construction, Operations, and Indirect* Beneficial Effect • During construction and operation, the Build Alternative Design Option would generate employment, labor income, and tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect	**Similar** – The Build Alternative Design Option would be located in the same, previously evaluated project footprint, and would result in similar impacts when compared to the Build Alternative. During construction, the Build Alternative Design Option would generate 27,440 job years, which would also translate to $4.28 billion in output and $0.61 billion in federal, state, and local tax revenues (in dollars of 2019), compared to the Build Alternative, which would generate 33,536 job years, $5.2 billion in output, and $0.7 billion in total federal, state, and local tax revenues. The Build Alternative Design Option would also require the full or partial acquisition of several parcels that are expected to result in the loss of 13 to 20 jobs (depending on how many relocate within Los Angeles County) and reduced annual property tax revenues of up to $335,221 (in dollars of 2019). The Build Alternative would result in the loss of up to 20 to 60 jobs and reduced annual property tax revenues of up to $202,683. When compared to the Build Alternative, Build Alternative Design Option would result in 7 to 40 fewer lost jobs and $66,274 more in tax revenues The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.14, Safety and Security							
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect*	*Construction* Adverse Effect • Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect*	**Reduced** - The Build Alternative Design Option would result in a reduction in the magnitude and intensity of construction-related traffic delays and access disruptions that would lead to community safety service delays when compared to the Build Alternative due to:

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	construction within roadways) could increase emergency response times. *Operations* Beneficial Effect • During operations, the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress. *Indirect* No Adverse Effect		No Adverse Effect	construction within roadways) could increase emergency response times. *Operations* Beneficial Effect • During operations, the Build Alternative Design Option would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress. *Indirect* No Adverse Effect		No Adverse Effect	North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, reducing the magnitude of traffic delays, roadway closures, and access disruptions from the closure of only Cesar Chavez Avenue. LAUS and Rail Yard • Reduced magnitude of construction-related traffic that could contribute to increased traffic congestion due to raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. South of LAUS • Construction of 8 run-through tracks on a single viaduct track structure versus 10 run-through tracks on multiple viaduct track structures, resulting in reduced magnitude of temporary closures of US-101 during the night. Once operational, the reduced extent of concourse-related improvements described above would not reduce beneficial effects to passenger safety, flow, capacity, and accessibility because the proposed concourse-related improvements would still achieve these objectives. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or	*Construction* TR-1 Prepare a Construction TMP AQ-1 Fugitive Dust Control AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or	*Construction* TR-1 Prepare a Construction TMP AQ-1 Fugitive Dust Control AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Proposed changes as part of the Build Alternative Design Option would result in a reduction in the magnitude and intensity of effects to safety conditions when compared to the Build Alternative due to: North of LAUS • Fewer construction activities from the reduced extent of the throat track reconstruction and elimination of the Vignes Street Bridge replacement eliminating

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. • Pedestrian and bicycle access to and from LAUS may 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). • Construction activities would potentially create air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. *Operations* Beneficial Effect • Replacement of the Vignes Street and Cesar Chavez Avenue bridges would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. • Proposed concourse-related improvements would	Diesel Fuel for Off Road Equipment		vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. • Pedestrian and bicycle access to and from LAUS may also be temporarily affected and bicyclists could be subject to hazardous conditions near work zones during the construction of bridge improvements at Cesar Chavez Avenue and modifications to local streets (including potential street closures and vacations). • Construction activities would potentially create air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. *Operations* Beneficial Effect • Partial replacement of the Cesar Chavez Avenue bridge would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. • Proposed concourse-related improvements would increase passenger capacity, enhance safety	Diesel Fuel for Off Road Equipment		potentially hazardous conditions at that location. No hazardous conditions near work zones on Vignes Street would be required. LAUS and Rail Yard • Reduced extent of partially elevated rail yard and concourse related improvements would result in a reduced scale of construction area and a reduced construction schedule, resulting in reduced safety risk from construction. • Reduced construction related safety hazards for multimodal commuters travelling through LAUS due to the reduced extent of concourse-related improvements. South of LAUS • Construction of 8 run-through tracks on a single viaduct track structure versus 10 run-through tracks on multiple viaduct tract structures would require a shorter construction period, reducing the magnitude of safety risks from construction. Once operational, with exception of the Vignes Street Bridge Replacement and the portion of the Cesar Chavez Bridge that would remain, the beneficial effects of the Build Alternative Design Option would be similar when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	increase passenger capacity, enhance safety and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. • Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements on Vignes Street and Cesar Chavez Avenue would also enhance pedestrian and bicycle safety. *Indirect* No Adverse Effect			and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. • Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements at Cesar Chavez Avenue would also enhance pedestrian and bicycle safety. *Indirect* No Adverse Effect			
Topic 3.14-C: Security conditions	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated footprint as the Build Alternative. Although the Build Alternative Design Option would decrease the scope and scale of the project, the security risks from human-caused and natural-caused threats would remain the same as those considered for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.15, Socioeconomics and Communities Affected							
Topic 3.15-A: Community facilities	*Construction* Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect	*Construction* Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in magnitude of

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• Based on the anticipated construction-related traffic delays, access to community facilities would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. *Operations* No Adverse Effect *Indirect* Adverse Effect Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the Care First Village playground/park.	*Indirect* NV-1 Construct Sound Walls	*Operations* No Adverse Effect *Indirect* No Adverse Effect	• Based on the anticipated construction-related traffic delays, access to community facilities would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. *Operations* No Adverse Effect *Indirect* Adverse Effect Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the Care First Village playground/park.	*Indirect* NV-1 Construct Sound Walls	*Operations* No Adverse Effect *Indirect* No Adverse Effect	effects related to access to community facilities when compared to the Build Alternative due to: North of LAUS • The construction of one bridge versus two bridges, reduces construction related traffic delays on Vignes Street and access to community facilities. LAUS and Rail Yard • The raising of only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway reduces construction related traffic delays and access to community facilities. South of LAUS • The reduced width of the run-through structure reduces construction related traffic delays and access to community facilities. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-B: Government services	*Construction* Adverse Effect • During construction, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in the vicinity of these	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • During construction of the Build Alternative Design Option, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to traffic congestion and access disruptions which could affect emergency response times when compared to the Build Alternative due to: North of LAUS • The construction of one bridge versus two bridges, resulting in a reduction of the magnitude of effects related to emergency response and access from significant delays at one intersection (Intersection #27, Mission Road and Cesar Chavez Avenue) versus two (Intersection #15: Vignes Street and Main Street and Intersection #27: Mission Road and Cesar Chavez Avenue). Vignes Street would not require

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	affected roadways, especially US-101 and Alameda Street, could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. *Operation* No Adverse Effect *Indirect* No Adverse Effect			the vicinity of these affected roadways, especially US-101 and Alameda Street, could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. *Operation* No Adverse Effect *Indirect* No Adverse Effect			closure with removal of the Vignes Street Bridge replacement. LAUS and Rail Yard • Reduction in magnitude and intensity of traffic congestion and access disruptions during construction raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. South of LAUS • The reduced width of the run-through structure reduces construction related traffic delays and the magnitude and intensity of effects on emergency access. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-C: Population Growth	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not include residential land uses as part of the project that would result in a substantial increase unplanned population growth. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-D: Business displacements and the economy	*Construction* Beneficial Effect • During construction, the Build Alternative would generate employment,	*Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street)	*Construction* Beneficial Effect *Operations* No Adverse Effect	*Construction* Beneficial Effect • During construction, the Build Alternative Design Option would generate	*Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street)	*Construction* Beneficial Effect *Operations* No Adverse Effect	**Reduced -** The Build Alternative Design Option would be in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduced project scope and scale. The Build Alternative Design Option would no longer require acquisition and demolition of Amay's Bakery as it would under the Build Alternative. The Build Alternative

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	labor income, and tax revenues. *Operations* Adverse Effect • Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. *Indirect* Beneficial Effect • The Build Alternative would increase tax revenue from business, wages paid to workers, and is expected to generate employment during construction and operations.		*Indirect* *Beneficial Effect*	employment, labor income, and tax revenues. *Operations* Adverse Effect • Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. *Indirect* Beneficial Effect • The Build Alternative Design Option would increase tax revenue from business, wages paid to workers, and is expected to generate employment during construction and operations.		*Indirect* Beneficial Effect	Design Option would still require the removal of freight storage track capacity at the north end of the BNSF West Bank Yard (5,500 feet) similar to the Build Alternative. This would result in reduced impacts related to business displacement. The Build Alternative Design Option would generate less employment, labor income and tax revenues due to less construction expenditures. The reduced scale of concourse-related improvements would not reduce the economic benefit of the Build Alternative Design Option when compared to the Build Alternative. The net fiscal impacts of the Build Alternative Design Option are estimated to be $4.0 million, considering the incremental retail sales, lease revenues, property taxes and the incremental cost of facility operations, which is consistent with the net fiscal impacts of the Build Alternative. acquisition and demolition as part of the Build Alternative Design Option. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-E: Community character and cohesion	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not result in permanent street closures affecting residences, and no residential communities would be displaced with the Build Alternative Design Option. The Build Alternative Design Option would provide the same access, connectivity, and non-motorized circulation benefits as the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Chapter 4, Community Analysis							
Topic 4.0A: Result in an adverse effect predominantly borne by a minority community, low-income community, or non-minority community	*Construction* Adverse effects *Operations and Indirect* No Adverse effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* Adverse effects not predominantly borne by a minority community, low-income community, or non-minority community.	*Construction* Adverse effects related to Noise, Cultural and Paleontological Resources would not be predominantly borne by a minority community, low-income community, or non-minority community. *Operations and Indirect* Adverse effects not predominantly borne by a minority community, low-income community, or non-minority community.	No Mitigation Measures are required.	*Construction, Operations, and Indirect* Adverse effects not predominantly borne by a minority community, low-income community, or non-minority community.	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Like the Build Alternative, construction and operation activities associated with the Build Alternative Design Option would have impacts on all the communities in the study area, including minority communities, low-income communities, or non-minority communities. However, application of mitigation measures would achieve a reduction in impacts and eliminate the adverse impacts on all communities. Consequently, construction activities associated with the Build Alternative Design Option would not result in an adverse effect that is predominantly born by a minority community, low-income community, or non-minority community. There would be a decrease in magnitude of effects that would be experienced by minority and/or low-income communities and non-minority and/or non-low-income communities related to: Noise and Vibration Construction impacts would be reduced for the Build Alternative Design Option, specifically throughout the duration of construction. The maximum number of impacts at each receptor group are: • 17 units impacted at William Mead Homes, compared to 41 for the Build Alternative. • 23 units impacted at Mozaic Apartments, compared to 82 units impacted for the Build Alternative. • 25 units impacted at Care First Village, compared to 36 units impacted for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Topic 4.0B: Result in an adverse effect that will be suffered by the minority community and/or a low-income community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority communities.	*Construction* Adverse effects that will be suffered by the minority community and/or low-income community related to Noise, Cultural and Paleontological Resources would not be appreciably more severe or greater in magnitude than the adverse effects that will suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority communities. *Operations and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities.	*Construction* Adverse effects that will be suffered by the minority community and/or low-income community related to Noise, Cultural and Paleontological Resources would not be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority community. *Operations and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities.	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Adverse effects that will be suffered by minority communities and/or low-income communities were not determined to be appreciably more severe or greater in magnitude than adverse effects that will be suffered by the non-minority communities and/or non-low-income communities; or vice-versa for non-minority communities. The Build Alternative Design Option would not result in new adverse effects that will be suffered by minority communities and/or low-income communities that would be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority communities and/or low-income communities; or vice-versa for non-minority communities. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Chapter 5, Section 4(f)							
Topic 5.0A: Result in the use of a Section 4(f) Properties - Public Park and Recreation Areas	*Construction, Operations, and Indirect* No Use • The Build Alternative would not result in a use of any public park and recreation areas.	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Use	*Construction, Operations, and Indirect* No Use • The Build Alternative Design Option would not result in a use of any public park and recreation areas.	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Use	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would not result in a temporary or permanent use of a Section 4(f) public park and recreation area. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 5.0B: Result in the use of a Section 4(f)	*Construction* • The Build Alternative would result in a temporary	*Construction*	*Construction* • The Build Alternative	*Construction* • The Build Alternative Design Option would result	*Construction*	*Construction* • The Build Alternative	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in the elimination of one

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Properties - Historic Property	occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Indirect* The Build Alternative would not result in proximity impacts that would rise to a level of constructive use.	CUL-2 Built Environment Treatment Plan (BETP) PR-1 Restoration of Affected Areas. CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.	would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Indirect* The Build Alternative would not result in proximity impacts that would rise to a level of constructive use.	in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative Design Option would result in the permanent use of two historic sites (Los Angeles Union Passenger Terminal and North Main Street Bridge). *Indirect* The Build Alternative Design Option would not result in proximity impacts that would rise to a level of constructive use.	CUL-2 Built Environment Treatment Plan (BETP) PR-1 Restoration of Affected Areas. CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.	Design Option would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative Design Option would result in the permanent use of two historic sites (Los Angeles Union Passenger Terminal and North Main Street Bridge). *Indirect* The Build Alternative Design Option would not result in proximity impacts that would rise to a level of constructive use.	permanent use of a Section 4(f) historic property. This would be due to: North of LAUS • Elimination of the Vignes Street Bridge would avoid permanent use of one Section 4(f) property compared to the Build Alternative. LAUS and Rail Yard • Reduced extent of permanent use of one Section 4(f) property (Los Angeles Union Passenger Terminal) from reduced width of expanded passageway from 140 feet to 100 feet and elimination of the West Plaza. • Reduced elevated rail yard height with fewer platforms raised and partial reconstruction of Cesar Chavez Bridge would result in reduced physical effects to character-defining features, and therefore reduced extent of permanent use of one Section 4(f) property (Los Angeles Union Passenger Terminal). Pursuant to 23 CFR 774.3I, a Least Overall Harm Analysis was performed and after considering the analysis, the Build Alternative Design Option causes the least overall harm to Section 4(f) Historic Properties, in light of the statute's preservation purpose. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Notes:
1 Although construction of the Build Alternative or Malabar Yard railroad improvements would not exceed the de minimis levels for PM2.5 and PM10; Mitigation Measure AQ-1 would still be implemented as a requirement of the Link US Build Alternative Design Option and Malabar Yard Mitigation Measure AQ-1 would also be implemented pursuant to SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts.
2 As construction of the Malabar Yard railroad improvements would overlap the 6-year timeframe for the Build Alternative, construction emissions for both activities were combined.

Table ES-3. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	

ACM=asbestos-containing materials; ADA=Americans with Disabilities Act; ATP=Archaeological Treatment Plan; BETP=Built Environment Treatment Plan; BMP=best management practice; BSA=biological study area; CALGreen=California Green Building Standards; 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; CO2e=carbon monoxide equivalent; CP=control point; dBA=A-weighted decibels; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; FTA=Federal Transit Administration; GHG=greenhouse gas; HABS=Historic American Buildings Survey; HACLA=Housing Authority of the City of Los Angeles; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; HSR=high-speed rail; IGP=Industrial General Permits; LADOT=Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; LBP=lead-based paint; LEED=Leadership in Energy and Environmental Design; LID=low impact development; LOSSAN=Los Angeles-San Diego-San Luis Obispo; LUC=land use covenant; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MOU=memorandum of understanding; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; PCB=polychlorinated biphenyls; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RIO=River Improvement Overlay District; RTP=Regional Transportation Plan; RWQCB=Regional Water Quality Control Board; SCAG=Southern California Association of Governments; SCAQMD=South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion; SCRRA (or Metrolink)=Southern California Regional Rail Authority; SCS=Sustainable Communities Strategy; SHPO=State Historic Preservation Officer; SWMP=stormwater management plan; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; VOC=volatile organic compound; WEAP=worker environmental awareness program

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ES.20 Section 4(f)/6(f) Determination

ES.20.1 Build Alternative

There are no Section 6(f) properties in the Project study area. Upon implementation of the Build Alternative, the Section 4(f) determinations are as follows:

1. The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge);
1. The Build Alternative would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant);
2. No constructive use would occur;

After considering the harm analysis performed in Chapter 9 of the Final EIS, the Build Alternative would better meet the purpose and need because it includes two additional run through tracks with expanded passenger capacity through LAUS. If the Build Alternative Design Option is implemented, the use of one of the three Section 4(f) properties (Vignes Street Undercrossing) would be avoided and the extent of permanent use and temporary occupancy of another Section 4(f) property (Los Angeles Union Passenger Terminal) would be reduced.

Upon consideration of the impacts and benefits for the Build Alternative and the Build Alternative Design Option and balancing of the seven least overall harm factors in Table 9-13 of the Final EIS, neither would result in substantially more or less harm. Therefore, either the Build Alternative or the Build Alternative Design Option would include all possible planning, as defined in 23 CFR § 774.17, to minimize harm to the Section 4(f) properties considered. In addition to Mitigation Measure CUL-2, the following measure is proposed to mitigate temporary construction impacts once construction of the Build Alternative or the Build Alternative Design Option is complete:

PR-1 **Restoration of Affected Areas.** CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.

ES.20.2 Malabar Yard Railroad Improvements

The Section 4(f) determination for the Malabar Yard railroad improvements is that no Section 4(f) use would occur for the NRHP-eligible Solar Manufacturing Corporation Building in Vernon, California.

No direct or indirect impacts that could result in a permanent incorporation, temporary occupancy, or constructive use of this property have been identified and the improvements do not hinder the preservation of the property. Therefore, no use of this resource would be required to implement the Malabar Yard railroad improvements, and no further analysis is required.

On November 20, 2023, the SHPO concurred with the findings and conclusions outlined in the *Link US Finding of Effect Report* (Appendix M of the Link US EIS).

1.0 Purpose and Need

1.1 Introduction and Lead Agency Roles

The Los Angeles County Metropolitan Transportation Authority (Metro) is a regional transportation planning agency responsible for administering public transportation in the Los Angeles metropolitan area. Metro directly operates bus, light rail, heavy rail, and bus rapid transit services and also administers funding and planning for rail and freeway projects within Los Angeles County. Metro's vision is to provide a world-class transportation system that enhances quality of life for all who live, work, and play within Los Angeles County. To achieve this vision, Metro, as the owner of Los Angeles Union Station (LAUS), is proposing the infrastructure improvements associated with the Link Union Station (Link US) Project (Project or proposed action) to address existing capacity constraints at LAUS.

In May 2016, the Federal Railroad Administration (FRA) and Metro issued the Notice of Intent (NOI)/Notice of Preparation (NOP) to prepare a joint environmental impact statement (EIS)/environmental impact report (EIR) for the Project. In October 2018, Metro, as the California Environmental Quality Act (CEQA) lead agency for the Project, elected to prepare a standalone EIR for the Project in compliance with CEQA. Metro certified the Final EIR on June 27, 2019 (State Clearinghouse No. 2016051071), and on October 28, 2021, Metro approved CEQA Addendum No.1 to the Final EIR.

The California High-Speed Rail Authority (CHSRA) was established by the California State Legislature in 1996 and is authorized and directed by statute to undertake the planning for the development of a proposed statewide high-speed rail (HSR) system that is fully coordinated with other public transportation services. Pursuant to 23 United States Code (USC) Section 327, FRA and the State of California executed a Memorandum of Understanding (MOU) dated July 23, 2019, in which the State of California, acting through the California State Transportation Agency (CalSTA) and CHSRA, assumed FRA's responsibilities under the National Environmental Policy Act (NEPA) and other federal environmental laws for projects necessary for the design, construction, and operation of the California HSR system and for other railroad projects directly connected to stations on the California HSR system, including the Project.

In October 2019, CHSRA and Metro began preparation of a standalone Draft EIS for the Project. In September 2020, in response to the potential need for railroad improvements at Malabar Yard in the City of Vernon, CHSRA issued a Revised NOI to initiate additional scoping and solicit additional public and agency input regarding the development of the Draft EIS for the Project. In December 2022, Metro elected to prepare a CEQA Supplemental EIR (SEIR) to disclose to decision makers, public agencies, and the general public the minor additions or changes (referred to as changed circumstances) that have occurred since certification of the Final EIR on June 27, 2019, and subsequent approval of CEQA Addendum No. 1 and adoption of the Revised Mitigation Monitoring and Reporting Program (MMRP) on October 28, 2021.

In April 2023, CHSRA and Metro agreed to prepare a joint EIS/SEIR. For the purposes of NEPA, CHSRA is the lead agency for complying with NEPA and other federal environmental laws for the Project. Metro is the joint lead agency under NEPA, project sponsor, and lead agency under CEQA.

1.2 Los Angeles Union Station

LAUS opened for service in 1939 and has operated as the central hub for regional transit in Southern California for 80 years. Today, LAUS is the busiest rail terminal west of Chicago and one of the top five busiest passenger terminals in the United States (U.S.), serving over 110,000 passenger trips per day with nearly 1,400 trains moving in and out of LAUS rail yard each week, from the main line tracks on the west bank of the Los Angeles River via the entrance to the rail yard, known as the LAUS throat. The LAUS throat contains five existing lead tracks that provide access to the platforms at the LAUS rail yard, which is a terminal (stub-end) tracks station (Figure 1-1 and Figure 1-2). LAUS functions as a regional transfer point for passengers using multiple transit modes in Los Angeles and throughout Southern California and is an essential component of California's transportation network, providing direct linkages to Metro's rail systems (e.g., Red, Purple, and Gold Lines),[1] Metro's Patsaouras Transit Plaza, Metrolink regional rail (commuter) trains, Amtrak regional and intercity rail trains, and Amtrak's long-distance trains. The role of LAUS in the regional transportation network is becoming increasingly critical, as regional growth in both population and employment dictates a growing need for increased regional transit capacity and connectivity.

LAUS Throat

A complex network of lead tracks, switches, and crossovers where all arriving and departing trains travel to access the LAUS Rail Yard.

Lead Tracks

Provides entrance and exit for trains into and out of the LAUS Rail Yard.

Stub-End Tracks

Tracks that terminate at the southern extent of the LAUS Rail Yard.

Main Line Tracks

Tracks along the Los Angeles River providing trains access to LAUS are considered artery lines within the system and connect multiple towns.

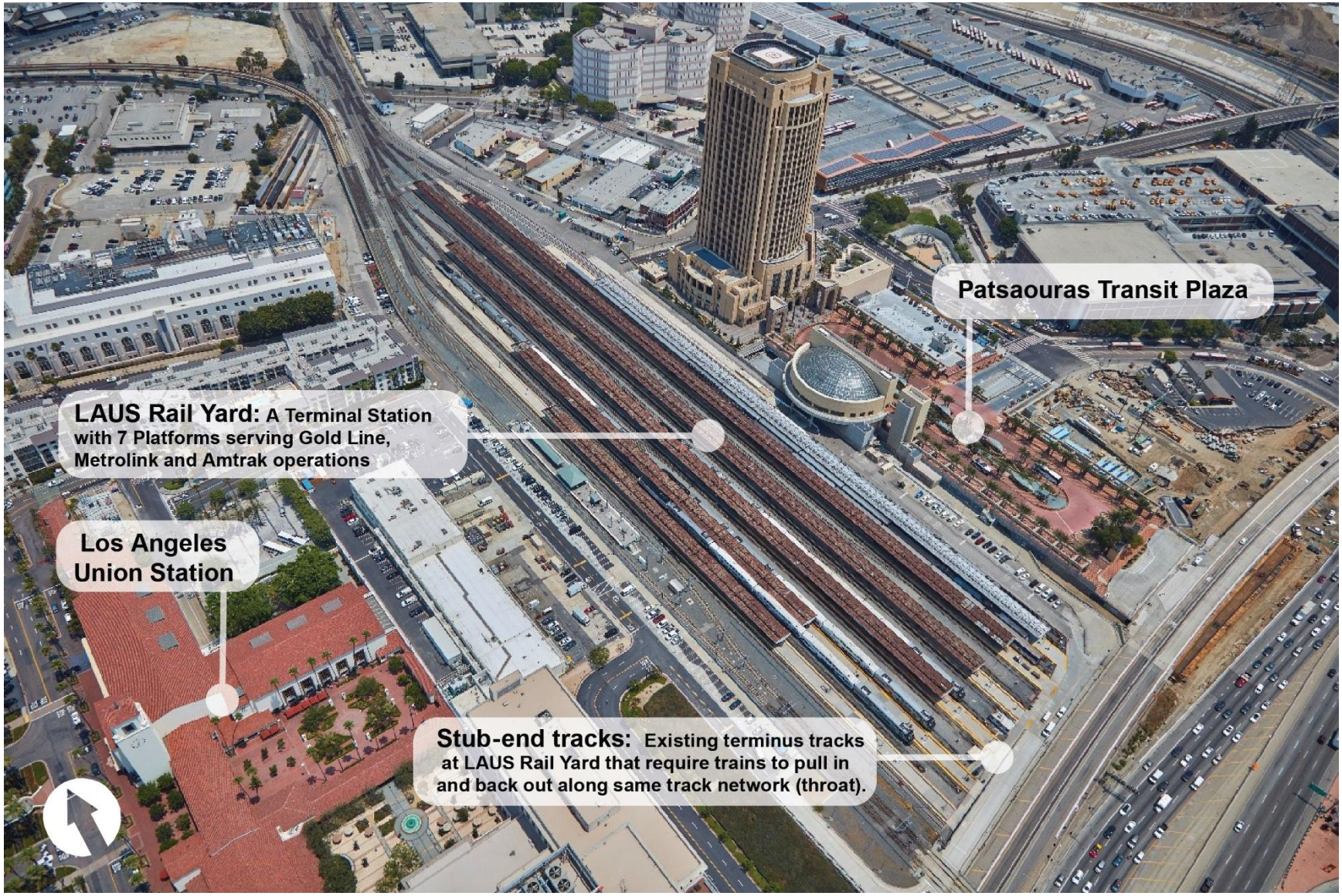
[1] With the renaming of the Metro system lines which occurred in 2019 and operation of the Regional Connector commencing on June 16, 2023, the Red, Purple, and Gold Lines were renamed in the Metro system. The stretch of the Gold Line from LAUS to Azusa is now part of the A Line, while the portion from LAUS to East Los Angeles has been added to the E Line. The Red Line is now the B Line stretching from North Hollywood to LAUS, and the Purple Line is now the D Line stretching from Wilshire/Western to LAUS.

Figure 1-1. Existing Lead Tracks and LAUS Throat



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Figure 1-2. Existing Los Angeles Union Station Rail Yard and Stub-End Tracks



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1.2.1 Rail Yard Operations

As depicted on Figure 1-3, the LAUS rail yard includes 15 tracks and 7 platforms. Two active tracks (Tracks 1 and 2) serve the Gold Line on Platform 1, and 12 active stub-end terminal platform tracks (Tracks 3 through 14) serve Metrolink and Amtrak trains on Platforms 2 through 7. Track 15 is used for rail equipment layovers and not revenue service. On the west side of the tracks, just north of the platforms and adjacent to the existing Gold Line aerial guideway, there are additional stub-end tracks known as the Garden Tracks, where private train cars are currently stored. Amtrak currently has services available to allow for private train cars stored on the Garden Tracks to be connected to specific Amtrak trains that also originate/terminate at LAUS.

The LAUS throat consists of complicated track configurations that require train dispatchers to direct trains in and out of the appropriate assigned terminal platform tracks, thereby limiting the operational capacity and train frequency through LAUS. The existing stub-end rail yard configuration at LAUS requires all trains to pull into the station terminal then reverse their direction of travel on the same set of tracks after loading/unloading passengers. As such, trains using LAUS are subject to delays and extended periods of idling time either at the station platforms or on the connecting tracks while awaiting a slot at the platforms or access onto the main lines.

1.2.2 Bus Operations

LAUS serves a variety of local, regional, and interstate bus routes operated by Metro, Antelope Valley Transit Authority, BoltBus, Greyhound, LADOT, Foothill Transit, Los Angeles International Airport (LAX) Flyaway, Megabus, Orange County Transportation Authority, Santa Clarita Transit, Santa Monica Municipal Bus Lines, and the University of Southern California Tram. In addition, the Foothill Transit Silver Streak, Metro Silver Line, and Metro Express have bus stops on the El Monte Busway south of LAUS along Arcadia Street and surrounding the station property. Amtrak Thruway bus service, which is Amtrak's system of intercity motor coaches that offers connecting service to areas unserved by rail, also operates from LAUS and provides linkages to the Amtrak lines to Bakersfield, Santa Barbara, San Diego, and other major cities. Patsaouras Transit Plaza offers essential bus connections with approximately 1,500 arriving and departing buses every day (California Transit Association 2019).

1.2.3 Passenger Movements and Accessibility

The current configuration of the 28-foot-wide pedestrian passageway restricts capacity and cross-campus circulation and associated access to and from transit modes served at LAUS. It also poses safety hazards because the current layout and arrangement of the platforms in the rail yard and the relationship to the existing passenger ramps and pedestrian passageway is constricted and highly congested during peak travel hours (6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, respectively). In addition, the current configuration causes ponding during rain events because water drains down stairways and ramps that provide passenger access to the rail platforms. Existing LAUS facilities are nonconforming with current applicable California Building Code (CBC) requirements (CBC 2022, as amended) and National Fire Protection Association

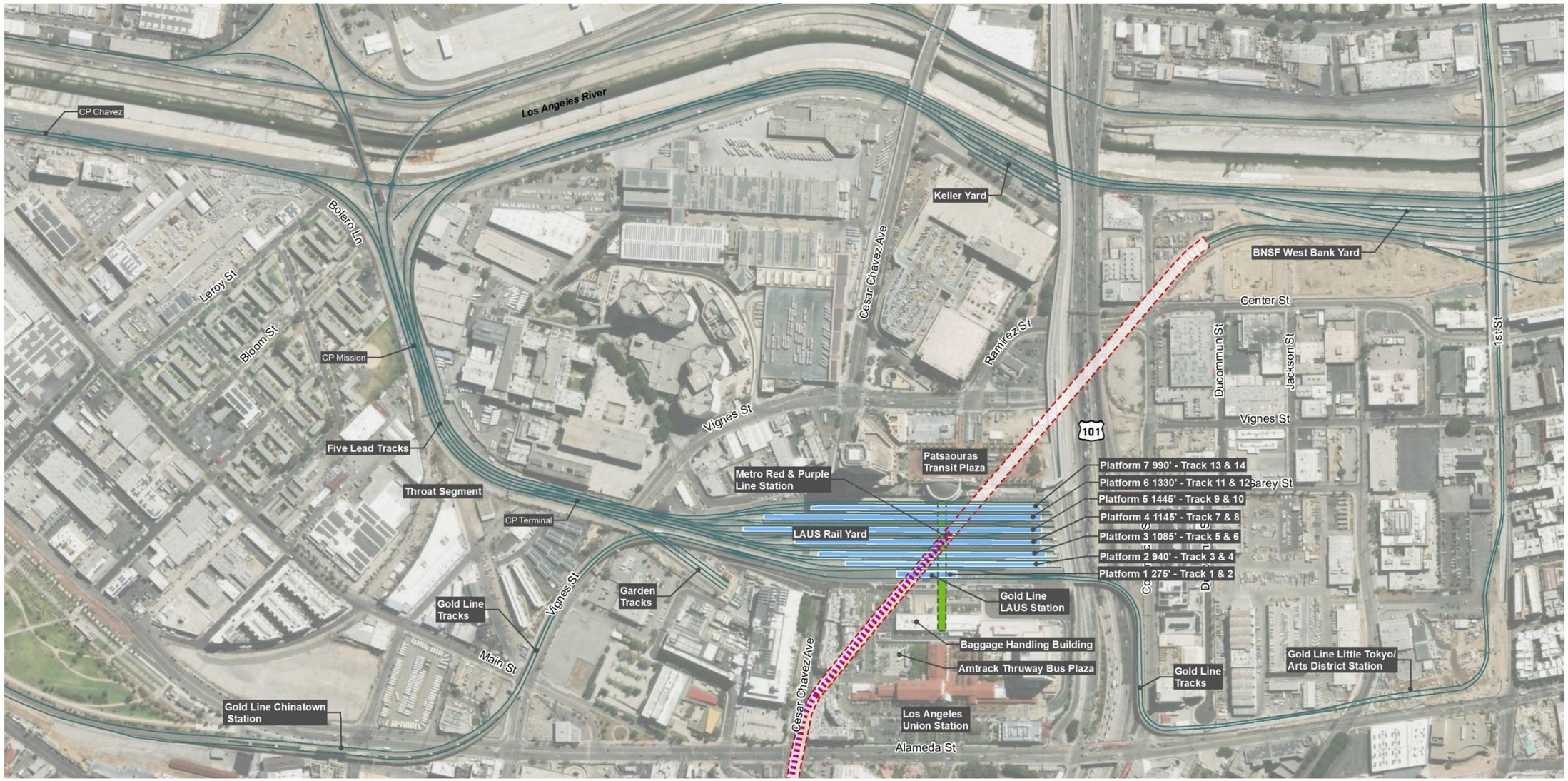
(NFPA) performance requirements for egress and safe evacuation (NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2020 edition). Platform 1 (serving the Gold Line) is a high-level platform that is 30 feet wide, which meets current standards due the recent construction of this facility. Platforms 2 through 7 (serving Metrolink and Amtrak) are low-level platforms that are 21 feet wide, which is 9 feet less than the Southern California Regional Rail Authority (SCRRA or Metrolink) Engineering Standard 3003 of 30 feet.

Figure 1-3 depicts the existing LAUS track and platform layout and other key facilities in and around LAUS, including the location of the pedestrian passageway.

1.2.4 Freight Rail Operations

BNSF Railway (BNSF) freight rail operations in the vicinity of LAUS primarily occur along the Metrolink River Subdivision on the east and west bank of the Los Angeles River and along the nearby Alameda Corridor. Just south of the U.S. Highway 101 (US-101) overpass on the River Subdivision West Bank, BNSF utilizes a dedicated lead track to access an intermodal staging yard, known as the BNSF West Bank Yard. The dedicated lead track for BNSF trains branches from SCRRA Main Track 4 along the west bank of the Los Angeles River. The BNSF West Bank Yard is used to store empty intermodal train car sets and is considered a critical piece of BNSF's service to the Ports of Los Angeles and Long Beach. Freight trains do not enter LAUS itself, but freight train operations can affect many of the passenger trains that enter and exit LAUS from the San Bernardino Subdivision as it is a heavily congested rail corridor, with precise timetables for both freight and passenger train traffic that coincide to maximize the operable space across the corridor.

Figure 1-3. Existing Los Angeles Union Station Track and Platform Layout



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1.3 Project Purpose

Run-Through Tracks

Tracks that allow trains to run-through LAUS as opposed to terminating at LAUS.

The purpose of the proposed action is to increase the regional and intercity rail service capacity of LAUS and to improve schedule reliability at LAUS through the implementation of a run through tracks configuration and elimination of the current stub end tracks configuration while preserving current levels of freight rail operations, accommodating the planned HSR system in Southern California, increasing the passenger/pedestrian capacity and enhancing the safety of LAUS through the implementation of a new passenger concourse meeting the multi modal transportation demands at LAUS.

1.4 Project Need

The need for the proposed action is generated by the forecasted increase in regional population and employment; implementation of federal, state, and regional transportation plans (RTP) that provide for increased operational frequency for regional and intercity trains; and introduction of the planned HSR system in Southern California. Localized operational, safety, and accessibility upgrades in and around LAUS will be required to meet existing demand and future growth.

1.4.1 Population and Employment Forecasts

The most applicable population, growth, and travel demand projections for the Project are the anticipated passengers per day and train trips through LAUS that result from LAUS being a regional transfer point for train riders in the six-county Southern California Association of Governments (SCAG) region and throughout Southern California. Los Angeles County experienced a 5.2 percent increase in population growth from 2010 to 2019 (SCAG 2020). The SCAG growth forecasts indicate that long-term population growth in Los Angeles County and the City of Los Angeles is expected to increase by 13 and 18 percent, respectively, through 2045 (SCAG 2020). According to Downtown Los Angeles 2023: Outlook & Insights, there are approximately 77,662 residents in Downtown Los Angeles (Downtown Center Business Improvement District 2023). From 2010 to 2022, the residential population growth in Downtown Los Angeles increased by 37 percent and includes 20,222 new residential units since 2010 (Downtown Center Business Improvement District 2023). Downtown Los Angeles is projected to add 176,000 residents, 99,000 housing units, and 86,000 jobs in 2040 (Los Angeles Department of City Planning 2022b).

1.4.2 Existing and Future Daily Train Movements at Los Angeles Union Station

Based on available train schedules and operational frequencies, as well as input from the rail operators, Table 1-1 summarizes the estimated total daily train movements (revenue and nonrevenue) through LAUS and the total trips during the two 3-hour AM and PM peak operating

periods (6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, respectively) for 2016, the years 2026 and 2031 that correspond to the two major phases of project implementation (interim condition and full build-out condition), and the horizon year considered in this EIS (2040).[2] Revenue trains operating through LAUS, such as the existing Pacific Surfliner and future Metrolink run-through trains, count as two movements: one inbound and one outbound.

Table 1-1. Existing (2016) and Future Daily Train Movements

Transit Operator	Frequency	2016	As Early As 2026	As Early As 2031	As Early As 2040
Metrolink (regional rail)	**Total daily**	**185**	**410**	**690**	**690**
	Revenue trains	139	370	678	678
	Nonrevenue trains[a]	46	40	12	12
	6-hour peak	80	144	250	250
Amtrak/LOSSAN	**Total daily**[b]	**48**	**68**	**80**	**140**
	Pacific Surfliner	32	48	56	112
	Long-distance trains	5	5	5	5
	Nonrevenue trains[c]	11	15	19	23
	6-hour peak	**13**	**21**	**21**	**39**
CHSRA	**Total daily**	—	—	—	**272**
	Nonrevenue trains[d]	—	—	—	50
	6-hour peak	—	—	—	132

Source: Rail Planning Technical Memorandum (Appendix C of this EIS)
Notes:
Revenue/Nonrevenue Train Movements indicates whether a train moving through LAUS is carrying passengers (revenue) or not (nonrevenue)
[a] This includes all deadhead equipment movements between LAUS and the Central Maintenance Facility.
[b] This includes through trains on the LOSSAN corridor, as well as proposed Coachella Valley Service starting in 2026.
[c] 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.
[d] This includes deadhead equipment movements for HSR trains between LAUS and the planned HSR Los Angeles Maintenance Facility along the west bank of the Los Angeles River.

CHSRA=California High-Speed Rail Authority; EIS=environmental impact statement; HSR=high-speed rail; LAUS=Los Angeles Union Station; LOSSAN=Los Angeles–San Diego–San Luis Obispo

As shown in Table 1-1, only Metrolink and Amtrak trains currently operate through LAUS. Total daily train movements presented in Table 1-1 include nonrevenue train movements required at the LAUS terminal to service passenger train equipment and position equipment at the station platforms for revenue service and revenue trains.

[2] As discussed in the Environmental Impact Statement (EIS) Chapter 2 (Section 2.4, Project Implementation Approach), the infrastructure improvements as part of the interim and full build-out conditions would be implemented as early as 2026 and 2031, respectively. The year 2040 corresponds to the horizon year with corresponding service goals and objectives of multiple statewide plans and mandates.

As early as 2040, estimated daily regional/intercity rail service train movements (revenue and nonrevenue regional/intercity trains) through LAUS are forecasted to increase from 233 trains per day in 2016 to 830 trains per day in 2040, an increase of 256 percent. When HSR trains are added, estimated train movements through LAUS are forecasted to increase in 2040 by 372 percent with the addition of up to 272 HSR trains per day through LAUS.

1.4.3 Capacity Constraints Generating the Need for the Link Union Station Project at Los Angeles Union Station

Existing facilities at LAUS do not have adequate operational and passenger capacity to serve future rail transportation needs. In its current configuration, the physical constraints of the LAUS throat and stub-end rail yard, combined with the existing 28-foot-wide pedestrian passageway, limits Metro's ability to accommodate planned increases in regional and intercity rail service or new HSR service and the corresponding increase in passengers through LAUS. The operational, safety, and accessibility deficiencies in, and around, LAUS are further described below.

Limited Rail Yard Capacity

Under existing conditions, inbound and outbound trains are required to operate over the same five-track network in and out of the LAUS throat. As a result, the rail yard capacity is operationally constrained because opposing train movements take approximately twice as long to clear track segments than under a scenario with run-through tracks in place. As discussed in the *Link US Rail Planning Technical Memorandum* (Appendix C of this EIS), changing the train's operating end to allow the train to move in the reverse direction requires additional time for the train crew to make the necessary changes, and the time the train has to backtrack at slow yard speeds also reduces efficiency. This leaves the trains subject to delays either at the station platforms or on the connecting lead tracks while awaiting a slot at the platforms or access onto the main lines.

The design of the LAUS throat leading to the rail yard entrance limits the number of trains that can enter and exit LAUS during the 3-hour AM and PM peak operating periods when activity at the station is at its highest level. The current one-way in-and-out configuration requires trains to enter and exit through the same set of tracks.

Service and schedule reliability is expected to further deteriorate 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 departure/loading could be lost, which may interfere with other train slots, and there are likely to be even fewer opportunities for schedule recovery with the current stub-end configuration.

Limited Pedestrian Capacity and Accessibility

Passenger trips through LAUS each weekday are expected to increase from 110,000 passengers per day to approximately 200,000 passengers per day by 2040 (Metro 2015a). LAUS functions as a regional transfer point for passengers using multiple transit modes in Los Angeles and throughout Southern California. Passengers require access to the various transit operations

occurring at the rail yard, including Patsaouras Transit Plaza (off Vignes Street), Amtrak Thruway bus plaza (on the north side of LAUS), Gold Line station, and Red and Purple Line station. These locations are connected via the existing 28-foot-wide reinforced concrete pedestrian passageway located under the rail yard platforms, which is inadequate for passenger safety, capacity, and compliance with Americans with Disabilities (ADA) requirements (Figure 1-4 through Figure 1-6).

Existing LAUS facilities are nonconforming with current applicable CBC requirements or NFPA performance requirements for egress and safe evacuation. Platform 1 (serving the Gold Line), which was more recently constructed, is a high-level platform that is 30 feet wide and meets current standards. 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.

Figure 1-4. Crowding on Platform during Peak Operating Period

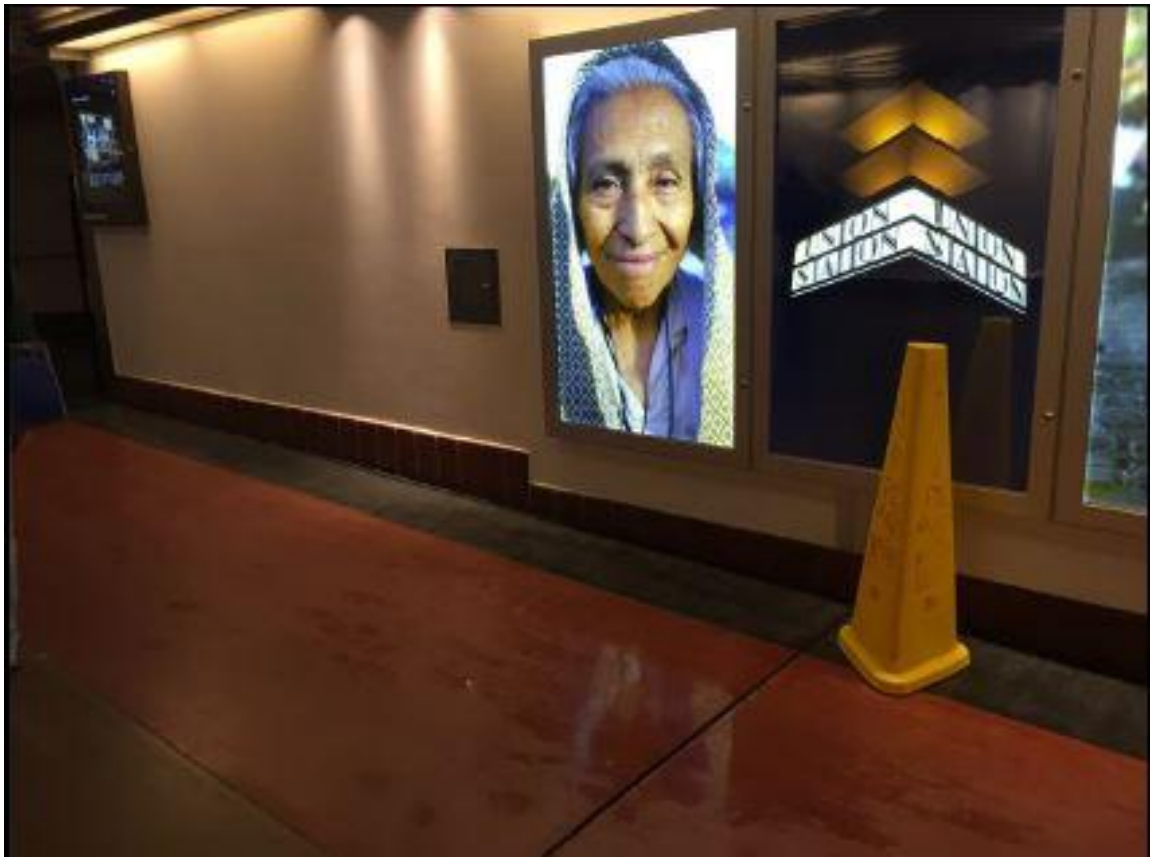


Note: This photo was taken in 2014 to represent the overcrowded conditions that are similar to the existing condition.

Figure 1-5. Pedestrian Activity on Passenger Ramps during Peak Operating Period



Figure 1-6. Water Ponding in Pedestrian Passageway



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. One wheelchair may occupy this space at a time. 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. ADA access to trains occurs at the south end of the platforms, where there is a common baggage cart and pedestrian aisle, which also creates a conflict between passengers and carts. The existing platform ramps depicted on Figure 1-5 have a steep incline with a grade that varies (14 to 20 percent slope) and does not conform to CBC requirements. The current combination of narrow platforms with insufficient space for passenger and baggage services in the rail yard area and non-ADA-compliant connections to and from the rail yard and pedestrian passageway limit the functionality and overall circulation through LAUS.

The Project is needed to improve and increase pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current building code and ADA requirements.

1.4.4 Statewide and Regional Plans and Programs

Table 1-1 summarizes the projected total daily train movements (revenue and nonrevenue) through LAUS and the total trips during the two 3-hour AM and PM peak operating periods for 2016, 2026, 2031, and 2040. The Project is needed to substantially increase train movements through LAUS to achieve the vision of the following statewide and regional plans and programs that propose increased frequencies for Metrolink and Amtrak train service and new HSR service at LAUS:

- ***California Transportation Plan 2050*** **(California Department of Transportation [Caltrans] 2021)** – The vision of the *California Transportation Plan* 2050 is a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health.
- ***2020-2045 RTP/Sustainable Communities Strategy (SCS): Connect SoCal*** **(SCAG 2020)** – The 2020 RTP/SCS identifies the Project as part of the Metrolink Southern California Optimized Rail Expansion (SCORE) Program and acknowledges the Project will greatly improve regional rail by providing through service at LAUS, reducing rail travel times in the region, and allowing one-seat ride opportunities to many more destinations. The Project is included in the 2023 Federal Transportation Improvement Program (FTIP), adopted as part of RTP/SCS Amendment #2, under FTIP Identification Number LA0G1051. The Project aligns with the benefits outlined in the 2020 RTP/SCS because it would reduce air pollution and greenhouse gas (GHG) emissions from idling locomotives.
- ***2018 California State Rail Plan: Connecting California*** **(Caltrans 2018a)** – The 2018 California State Rail Plan identifies the investments needed to reach state goals for increased passenger rail service frequency and improved connectivity. The Project is needed to increase rail capacity, improve trip times and service frequencies, and enhance

the entire rail travel experience within the greater Los Angeles area in alignment with the California State Rail Plan.

- ***2022 Business Plan* (CHSRA 2022)** – The objective of the *2022 Business Plan,* adopted April 27, 2022, is to initiate HSR passenger service as soon as possible. The Project accommodates the design of the planned HSR system by establishing a development footprint that accounts for regional/intercity rail improvements, as well as HSR-related infrastructure improvements for planned service levels provided by CHSRA for use in the environmental documentation for the Project.
- **2018 SCORE Program** – The SCORE Program calls for significant investments in rail infrastructure (such as track additions, grade-crossing improvements, and station and signal improvements) in Southern California to provide more frequent and reliable passenger rail service, consistent with the goals of the *2018 California State Rail Plan*. As LAUS is the core of the Metrolink operations, the Project-related capacity enhancements are needed as the Project is the central element of the program.
- **Measure M** – On November 8, 2016, the citizens of Los Angeles County approved Measure M as the county's fourth local sales tax dedicated to transportation. The Project, partially funded by Measure M, is needed because it is instrumental in providing regional system connectivity and meeting the growing mobility needs of the Southern California region, including economically disadvantaged communities in the Project study area and the broader region. LAUS is a key component of the planned HSR system and is a vital regional transit hub that patrons will use for decades to come.

1.5 Project Background and History

The following sections describe the background and history of the Project, including changes in land use, population, and traffic patterns (commuter and freight), that led to proposing the Link US Project.

1.5.1 Run-Through Tracks Project

In 2002, Caltrans and FRA (in cooperation with Amtrak) initiated conceptual engineering and preparation of an EIS/EIR for a capacity improvement project known as the Run-Through Tracks Project. The need to increase the capacity of the rail yard at LAUS, reduce passenger travel times, improve the reliability of passenger rail service, and increase the utilization of Metrolink and Amtrak rolling stock was documented in the 2002 Run-Through Tracks Project Alternatives Analysis Report (Caltrans and FRA 2002). In 2005, Caltrans and FRA published a final EIR/EIS (Caltrans and FRA 2005) for the Run-Through Tracks Project, which would include a new four-track connection from LAUS over US-101 to the main line railroad tracks along the west bank of the Los Angeles River. As documented in the Run-Through Tracks Project EIS, adding new run-through tracks would improve efficiency and reliability of trains using LAUS, improve pedestrian access and connectivity, and increase capacity of LAUS to accommodate future increases in the number of trains. The Run-Through Tracks Project did not include major

improvements to the pedestrian passageway to enhance passenger capacity, nor did it accommodate the planned HSR system at LAUS.

The relevant aspects of the Run-Through Tracks Project, relative to the discussion of track alignment alternatives considered as part of the Link US Project alternatives analysis process, are discussed and reflected in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS).

Loop Track

A run-through track that would provide a circular route or "loop" around LAUS to provide even greater operational flexibility with enhanced schedule reliability and capacity at trains using LAUS

1.5.2 Southern California Regional Interconnector Project

Following completion of the environmental review process for the Run-Through Tracks Project, numerous changes in area planning required a change in how planned improvements to the LAUS infrastructure would be implemented. These changes included:

- **Change in ownership of LAUS** – In 2011, Metro purchased LAUS from Catellus Operating Limited Partnership. In 2012, Metro began a master planning effort for the LAUS campus and surrounding areas (i.e., LAUS Master Plan). The LAUS Master Plan includes 38 acres of land at LAUS with 5.9 million square feet of entitlements that would allow for Metro to build on the property and draw lease revenues from both transit operators and businesses (Metro 2015b). The LAUS Master Plan identified the Southern California Regional Interconnector Project (SCRIP) as one of five related projects and included other development strategies for the area within and surrounding the LAUS campus.
- **LAUS capacity needs** – Service operators identified a need to increase the capacity of the rail yard by up to 300 percent while further enhancing operational flexibility with a northern loop track south of LAUS.
- **LAUS forecast passenger demand** – Metro determined the existing 28-foot-wide pedestrian passageway connecting the east and west ends of LAUS would be unable to meet forecast passenger demand on existing and planned modes of transportation that were projected at the time to result in over 200,000 passenger trips through LAUS each weekday by 2040 (Metro 2015b) and began evaluating concepts for a new passenger concourse.

As a result of these area-wide planning changes, Metro initiated work on SCRIP concurrent with the development of the LAUS Master Plan to identify new run-through track alternatives in conjunction with a new at grade passenger concourse at LAUS (below the rail yard), an elevated rail yard, and a northern loop track.

Under SCRIP, Metro initiated the planning and design of a new passenger concourse below an elevated rail yard, with up to 10 new run-through tracks south of LAUS to meet current building code standards while implementing long term rail, transit, and mobility improvements at LAUS.

Initially in 2005, LAUS was identified as a potential station location in the Tier 1 documents associated with the planned HSR system (CHSRA and FRA 2005). The planned HSR system was not considered as part of the SCRIP because Metro and CHSRA had yet to enter into an agreement to accommodate the planned HSR system through the Project limits.

The relevant aspects of SCRIP, relative to the discussion of track alignment alternatives and concourse concepts considered as part of the Link US Project alternatives analysis process, are discussed and reflected in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans (*Appendix B of this EIS).

1.5.3 Link Union Station Project

In 2016, Metro rebranded SCRIP as the Link US Project. Through the alternatives analysis process conducted for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system, LAUS became the preferred station location for the planned HSR system in Downtown Los Angeles (CHSRA 2021). For this reason, Metro and CHSRA also entered into an agreement to complete the necessary project-level environmental analysis and preliminary engineering to accommodate the planned HSR system as part of the Link US Project.

The run-through tracks over US-101 have been included since 2002 as part of the Run-Through Track Project and remain the fundamental component to improving operational efficiency, capacity, flexibility, reliability, and connectivity for trains using LAUS.

2016 Notice of Intent and Scoping Meeting

In May 2016, FRA and Metro issued an NOI to prepare an EIS for the Link US Project [81 *Federal Register* (FR) 34429–34431, May 31, 2016]. FRA also transmitted scoping initiation letters on May 31, 2016. At the time of scoping, FRA (the NEPA lead agency at the time) and Metro intended to prepare a joint EIS/EIR pursuant to CEQA and NEPA. The Project, as described in the 2016 NOI, included three main elements (elevated throat and rail yard, new passenger concourse, and up to 10 run-through tracks over US-101, including a loop track). The NOI outlined the draft purpose and need, goals and objectives (prepared pursuant to CEQA), probable effects, and disclosed the no build alternative would be considered as well as a number of build alternatives.

The deadline for submitting scoping comments was June 30, 2016. Agencies were notified of the EIS scoping period, which was described in the NOI and on the Project website (metro.net/projects/link-us/). The NOI was also described in several local, multicultural publications in different languages, including the *Los Angeles Downtown News* (English), *La Opinion* (Spanish), *Rafu Shimpo* (Japanese), and the *Chinese LA Daily News* (Chinese). These were the predominant newspapers circulated in the neighborhoods around LAUS in 2016 and cover the main languages spoken in these areas.

FRA and Metro held a scoping meeting on June 2, 2016, from 6:00 to 8:00 PM on the first-floor plaza of Metro Headquarters (One Gateway Plaza, Los Angeles, California 90012). The meeting included a presentation on the Project and provided an open forum for public and agency

comments on the preliminary draft purpose and need, concepts under consideration, and issues and areas of concern to be considered in the environmental documentation. At the scoping meeting, members of the public were invited to ask questions regarding the Project and the environmental review process and comment verbally and in writing on the scope and content of the environmental documentation. Written comments received during the 30-day scoping comment period as well as written and verbal comments received during the public scoping meeting, are included in the *2016 Notice of Intent Scoping Summary Report* (Appendix A of this EIS).

In total, 30 letters were received: 8 letters from federal, state, and local agencies and organizations and 22 letters from individuals. The primary concerns expressed by the public in comments received during scoping were related to transportation-related effects on nearby businesses and historical resources. The primary concerns expressed by the agencies in comments received during scoping were related to consistency with regional and local transportation goals and policies and effects on transportation (traffic and rail system operations and safety), air quality, and historic resources. The input received during the scoping comment period and public outreach informed the development of the purpose and need and was factored into the screening criteria to support the alternatives evaluation. Further details regarding the scoping process and comments received during early public outreach activities can be found in the *2016 Notice of Intent Scoping Summary Report* (Appendix A of this EIS).

2020 Revised Notice of Intent and Virtual Scoping Meeting

After FRA published the 2016 NOI, completed Project scoping, and executed the MOU with the State of California to delegate NEPA authority to CHSRA as the federal lead agency (July 2019), CHSRA and Metro, in coordination with the CalSTA and BNSF, identified railroad improvements to the BNSF Malabar Yard in the City of Vernon that would offset the loss of storage track capacity at the BNSF West Bank Yard.

On September 17, 2020, FRA, on behalf of CHSRA, issued a Revised NOI to solicit additional public and agency input into the development of the scope of the Link US Project EIS with respect to the railroad improvements to the BNSF Malabar Yard in the City of Vernon. The deadline for submitting scoping comments was October 19, 2020. Agencies were notified of the EIS scoping period, which was described in the Revised NOI and on the Project website (metro.net/projects/link-us/) and virtual meeting room (LinkUnionStation.com). Similar to the 2016 NOI, the Revised NOI was also described in several local, multicultural publications in different languages, including the *Los Angeles Times* (English), *Los Angeles Downtown News* (English), *Los Angeles Daily News* (English), *La Opinion* (Spanish), *Rafu Shimpo* (Japanese readership), and the *Chinese LA Daily News* (Chinese). These are the predominant newspapers circulated in the neighborhoods around LAUS in 2020 and cover the main languages spoken in these areas.

During the Revised NOI scoping comment period, CHSRA and Metro held a virtual scoping meeting on October 8, 2020, from 6:00 to 8:00 PM, which was accessible via a virtual meeting room hosting site: LinkUnionStation.com. The meeting was held virtually due to COVID-19 pandemic and stay-at-home orders within Los Angeles County. The meeting included a live

presentation from 6:00 to 6:30 PM and public scoping comments accepted digitally and verbally from 6:30 to 8:00 PM. The virtual meeting room and Open House was available for the entire 30-day duration of the scoping comment period, September 17, 2020, to October 19, 2020.

The virtual public scoping meeting helped notify stakeholders about the Revised NOI scoping comment period (September 17, 2020, through October 19, 2020). The primary goals for the public scoping meeting were to educate the public about the Malabar Yard railroad improvements, share the Project history, how the Project has evolved, outline the Project benefits, highlight the Project elements and alternatives considered, present the Project timeline, explain the next steps, and satisfy statutory requirements for scoping and collecting public comment in accordance with NEPA.

In total, 81 comment submissions were received, most of which were made during the virtual scoping meeting. Three comment submissions were from public agencies, two comment submissions were from community organizations, and 76 individual comment submissions were from individual stakeholders. Two of the 76 individual comments were received after the close of the 30-day public comment period. The primary concerns expressed by the public in comments received during Revised NOI scoping comment period were related to transportation-related effects on property owners and businesses near Malabar Yard, loss of BNSF tracks, and local traffic circulation in the City of Vernon. Further details regarding the Revised NOI scoping process and comments received during early public outreach activities can be found in the *2020 Revised Notice of Intent Scoping Summary Report* (Appendix A of this EIS).

Planned High-Speed Rail System – Burbank to Los Angeles and Los Angeles to Anaheim Project Sections

The planned HSR system would connect the San Francisco Bay Area and Central Valley to Southern California, encompassing nearly 800 miles of rail, with up to 24 stations throughout the state. Given the extent and size of the planned HSR system, 10 separate project sections were identified, with 2 major phases of implementation. Phase 1 of the planned HSR system would connect San Francisco to Los Angeles and Anaheim via the Pacheco Pass and the Central Valley, and Phase 2 would address the extensions from Merced to Sacramento and from Los Angeles to San Diego via the Inland Empire.

The Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system converge at LAUS. The Burbank to Los Angeles Project Section is approximately 14 miles long and would connect the Burbank Airport Station at the Hollywood Burbank Airport to LAUS. In March 2022, CHSRA certified the Final EIR and issued a Final Record of Decision for the Burbank to Los Angeles Project Section of the planned HSR system and identified a Selected Alternative for the Burbank to Los Angeles Project Section (HSR Build Alternative).

The Los Angeles to Anaheim Project Section is approximately 30 miles long and would connect LAUS to the Anaheim Regional Transportation Intermodal Center. CHSRA is currently preparing a joint EIR/EIS for the Los Angeles to Anaheim Project Section.

CHSRA is responsible for the planning, design, construction, and operation of the planned HSR system, as well as preparing all environmental clearance documentation required for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections. The Link US Project footprint accommodates the design and location where HSR infrastructure improvements would be implemented (see Chapter 2, Alternatives and Design Options Considered, Section 2.4). Physical construction of common rail infrastructure that would accommodate HSR trains throughout the Link US Project limits is part of the Project and evaluated within this EIS.

Common Rail Infrastructure

Tracks, platforms, bridges, embankments, and associated civil/railroad infrastructure that would accommodate both regional/intercity rail trains and high-speed rail trains.

As part of the Project, the following common rail infrastructure is environmentally evaluated in this EIS:

- North of LAUS - Shared lead tracks (compatible tracks), and the new Vignes Street Bridge and new Cesar Chavez Avenue Bridge are considered common rail infrastructure.
- At LAUS, Platforms 2 and 3, tracks, and concourse related improvements to support HSR operations are considered common rail infrastructure.
- South of LAUS, bridges, tracks, and embankments (extending from LAUS to First Street constructed wide enough to support run-through tracks for both regional intercity rail and HSR use and catenaries) are considered common rail infrastructure.

2.0 Alternatives and Design Options Considered

This chapter describes the alternatives analysis process conducted for the track alignments and concourse-related improvements. This chapter also provides a detailed description of the No Action Alternative and the Build Alternative (with associated design options) that are evaluated under NEPA in this EIS. The location and regional vicinity of proposed infrastructure improvements, including a description of how the planned HSR system is accommodated[2] by the Link US Project and evaluated within this EIS, and a timeline for implementation of proposed infrastructure are also described in this chapter.

The physical footprint and associated track, structural, concourse, rail signal, utility, drainage and water quality, and circulation/streetscape improvements that are part of the Build Alternative are also described in this chapter, in addition to project cost, funding sources, and anticipated agency involvement during the NEPA/CEQA process.

2.1 Alternatives Analysis Process

To facilitate the alternatives analysis process, the Purpose and Need was used to guide and develop criteria to screen track alignment alternatives and concourse concepts. This section summarizes the criteria and the results of screening 14 track alignment alternatives and 6 concourse concepts as identified in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS). Based on the screening process, this section also identifies the track alignment alternative and concourse concept that was recommended for detailed evaluation as part of the Build Alternative and the design modifications as part of the Build Alternative Design Option. The alternatives considered in the EIS evolved over 7 years of Project planning/development (2016-2023), and have been developed as a result of substantial public, agency, and stakeholder feedback received during the initial Link US Project joint EIS/EIR process (not completed), the Link US Project standalone EIR process (completed June 2019), CHSRA's environmental processes for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (Burbank to Los Angeles EIR/EIS completed March 2022), and the Link US Project standalone EIS process.

As discussed below and in Chapter 9, Metro proposed design modifications to the track alignment alternative, which required reconsideration of the criteria and results of the previous track alignment alternatives considered. The Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the SHPO and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the

[2] When this EIS states the planned HSR system is "accommodated", it means Metro would construct the common rail infrastructure described in this EIS consistent with specifications and requirements that CHSRA designates as appropriate for CHSRA to operate its HSR system within the limits of the Link US Project footprint.

engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.

2.1.1 Track Alignment Alternative Screening Criteria

The application of each screening criterion and how each track alignment alternative was evaluated considering that criterion is described below. A detailed discussion of the screening criteria is provided in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS).

1. **Accommodate Ten Run-Through Tracks from LAUS to West Bank of Los Angeles River:** Track alignment alternatives that do not accommodate six run-through tracks for regional/intercity trains and four run-through tracks for HSR trains from LAUS to the west bank of the Los Angeles River were rejected from further consideration because they would constrain and limit flexibility to achieve the increases in train movements and associated passenger volumes forecasted by existing (SCRRA, Amtrak, Los Angeles San Diego San Luis Obispo [LOSSAN]) and future (CHSRA) operators at LAUS.

   All track alignment alternatives considered during preparation of the Draft EISSEIR included a run-through track configuration that would achieve the forecasted increase in train movements on dedicated tracks south of LAUS. In collaboration with rail operators, Metro determined that a shared tracks configuration, as compared to dedicated tracks configuration, would also support future passenger operations south of LAUS. Metro also determined that an alignment with fewer than ten run-through tracks would not cause potential constraints or limits on operational flexibility that Metro had initially planned for when Track Alignment Alternative Screening Criteria 1 was developed. This is because run-through service at LAUS would facilitate enhanced capacity and operational benefits at LAUS, even with fewer than ten run-through tracks.

   Screening Criterion 1 is retained in the Final EIS; however, to properly analyze and consider the benefits of alternatives with fewer than ten run-through tracks, including the proposed design modifications and reductions of the Build Alternative Design Option, the screening method was modified from pass/fail (Yes or No) to no-longer-pass/fail. Screening Criterion 1 is retained in the Final EIS; however, as discussed below in Section 2.1.5, because the Build Alternative Design Option includes 8 run-through tracks, other track alignment alternatives with 8 run-through tracks were reconsidered to determine if they would qualify for detailed evaluation.

2. **Avoid Shared Lead Tracks for Freight Trains and Intercity Trains at BNSF West Bank Yard:** Track alignment alternatives that require BNSF freight trains to share the same tracks as Amtrak trains at the BNSF West Bank Yard were rejected from further consideration due to the potential impacts on intermodal freight operations as well as Amtrak on time performance to and from LAUS.

3. **Avoid Lowering the Existing Red and Purple Line Subway:** Track alignment alternatives that require lowering of the existing Red and Purple Line subway were rejected from further consideration due to the transit service disruptions during construction that could extend over years thereby affecting a high volume of passengers. In addition, lowering the Red and Purple Line subway would result in substantially higher construction costs that could exceed allocated public funds.
4. **Avoid Lowering the US-101 and the El Monte Busway:** Track alignment alternatives that require lowering US-101 and the El Monte Busway were rejected from further consideration due to design criteria requirements, substantially higher construction costs, and the multiple years of traffic and transit service disruptions during construction.
5. **Avoid Stacking Platforms for Regional/Intercity Rail Trains and HSR Trains:** Track alignment alternatives that require stacking platforms for regional/intercity rail trains and HSR trains were rejected from further consideration due to design criteria requirements (vertical grade and curvature requirements).
6. **Avoid Adding an Eighth Platform for Regional/Intercity Rail Trains or HSR Trains:** Track alignment alternatives that require an eighth platform were rejected from further consideration due to right-of-way (ROW) impacts and the multiple years of transit service disruptions during construction that would affect a high volume of passengers.

2.1.2 Concourse Concept Screening Criteria

The application of each screening criterion and how each concourse concept was evaluated considering that criterion is described below.

1. **Add Passenger Capacity:** Passenger concourse concepts that would not add passenger capacity in the form of additional physical space were rejected from further consideration because they would not support increased frequency of service and ridership or provide an easily navigable environment for passengers.
2. **Provide Egress Routes and Safe Evacuation:** Passenger concourse concepts that would not meet NFPA 130 performance requirements (NFPA Standard for Fixed Guideway Transit and Passenger Rail Systems 2020 edition) were rejected from further consideration because they do not provide adequate egress routes for safe evacuation of passengers from platforms within 15 minutes.
3. **Enhance Passenger Safety and Accessibility:** Passenger concourse concepts that would not include new vertical circulation elements (VCE) throughout LAUS were rejected from further consideration because they do not enhance safety and ADA accessibility for passengers.

4. **Optimize Concourse Space and Back-of-House Operations:** Passenger concourse concepts that would not optimize the organization of space for concourse operations were rejected from further consideration because they would not provide for the separation of public passenger spaces from back-of-house operational/maintenance spaces, improve baggage handling operations by optimizing pick-up and drop-off operations, or provide an enhanced passenger experience with new amenities.
5. **Maintain or Improve Passenger Transfer Times**: Passenger concourse concepts that would not maintain or improve current passenger transfer times between transportation connections were rejected from further consideration because transfer times would be longer than in the existing condition.
6. **Align with Community Preference:** Passenger concourse concepts that include an above-grade component were rejected from further consideration because they do not align with the overwhelming community feedback on the configuration of the passenger circulation space.

2.1.3 Track Alignment Alternatives and Concourse Concepts Considered

Any track alignment alternative or passenger concourse concept that did not meet all screening criteria noted above was rejected from further consideration. As summarized in Table 2-1 and Table 2-2 and described in more detail in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS), 14 track alignment alternatives were screened, of which 13 were rejected; and 6 concourse concepts were screened, of which 5 were rejected.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
1. 4 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; five platforms for regional/intercity rail trains, one platform for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; four regional/intercity rail run-through tracks (with a single loop track); and accommodation for two HSR run-through tracks from LAUS to First Street.	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 6 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.
2. 4 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; four platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 8 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; four regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street.							
3. 5 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; five platforms for regional/intercity rail trains, one platform for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; five regional/intercity rail run-through tracks (with a single loop track); and accommodation for two HSR run-through tracks from LAUS to First Street.	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 7 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
4. 5 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; four platforms for regional/intercity rail trains; two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; five regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street.	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 9 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.
5. 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS) - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; five platforms for regional/intercity rail trains, one platform for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 8 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for two HSR run-through tracks from LAUS to First Street.							
6. 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with shared lead tracks north of LAUS) - The track alignment includes six lead tracks north of LAUS (two shared tracks for regional/intercity rail trains and HSR trains); removal of the Garden Tracks, four platforms for regional/intercity rail trains, one platform for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment where Commercial Street currently exists, extending to Center Street; lowering the intersection of Center Street and Commercial Street; realignment of Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks and (with a single loop track); and	**No**	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes 8 total run-through tracks and shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
accommodation for two HSR run-through tracks from LAUS to First Street.							
7. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS) - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; four platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street.	Yes	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.
8. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with double loop tracks) - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north of LAUS; four platforms for	Yes	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment south of Commercial Street extending to Center Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with two loop tracks); and accommodation for four HSR run-through tracks from LAUS to First Street.							
9. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with shared lead tracks north of LAUS) - The track alignment includes six lead tracks north of LAUS (two shared tracks for regional/intercity rail trains and HSR trains); removal of the Garden Tracks; four platforms for regional/intercity rail trains; two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment where Commercial Street currently exists extending to Center Street; lowering the intersection of Center Street and Commercial Street; realignment of Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage	Yes	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration – includes shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street.							
10. 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with HSR double decked) - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; four platforms for regional/intercity rail trains, one platform for HSR trains above the existing platform for the Gold Line LRT; two separate bridges over the El Monte Busway and US-101; two separate overhead viaducts over and south of Commercial Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for two HSR run-through tracks from LAUS to First Street.	**No**	**No**	Yes	Yes	**No**	Yes	Rejected from further consideration – includes 8 total run-through tracks, shared lead tracks for BNSF freight trains and Amtrak trains at the West Bank Yard, and double deck platforms.
11. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with permanent realignment of Gold Line due to addition of eighth platform) - The track alignment includes six lead tracks north of LAUS (two shared tracks for	Yes	**No**	Yes	Yes	Yes	**No**	Rejected from further consideration – includes shared lead tracks for BNSF freight trains and Amtrak trains at the

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
HSR trains outside existing railroad ROW); removal of the Garden Tracks; permanent realignment of the Gold Line north and south of LAUS; modification to the existing Gold Line viaduct over US-101; five platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; two separate bridges over the El Monte Busway and US-101; two separate overhead viaducts over and south of Commercial Street; lowering the intersection of Center Street and Commercial Street; two separate bridges over Center Street and the Amtrak lead track; two separate rail embankments on the west bank of the Los Angeles River with lowering and reconstruction of storage tracks at the BNSF West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street.							BNSF West Bank Yard and an eighth platform at LAUS.
12. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with shared lead tracks north of LAUS, no loop track, and shared lead tracks for BNSF freight trains and Amtrak trains) - The track alignment includes six lead tracks north of LAUS (two shared tracks for regional/intercity rail trains and HSR trains); removal of the Garden Tracks; four platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment north of Commercial Street extending to Center Street; a	Yes	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration - includes shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
common bridge over Center Street; a common embankment east of Center Street and common bridge over the Amtrak lead track; a common embankment on the west bank of the Los Angeles River extending to the First Street Bridge; permanent removal of 5,565 feet of BNSF storage tracks at the north end of the West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (no loop track); and accommodation for four HSR run-through tracks from LAUS to First Street. No lowering of Center Street or realignment of Commercial Street is required. BNSF storage tracks would not be reconstructed resulting in a permanent loss of storage track capacity at the BNSF West Bank Yard.							
13. 6 Regional/Intercity Rail Run-Through Tracks +4 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS, loop track, and shared lead tracks for BNSF freight trains and Amtrak trains) - The track alignment includes seven lead tracks north of LAUS (two dedicated tracks for HSR trains outside existing railroad ROW); removal of the Garden Tracks; four platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment where Commercial Street currently exists extending to Center Street; lowering the intersection of Center Street and Commercial Street; realignment of Commercial Street; separate bridges over Center Street for regional/intercity trains and HSR trains; an embankment for regional/intercity rail	Yes	**No**	Yes	Yes	Yes	Yes	Rejected from further consideration - includes shared lead tracks for BNSF freight trains and Amtrak trains at the BNSF West Bank Yard.

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
trains and separate viaduct for HSR trains east of Center Street; a common bridge over the Amtrak lead track; a common embankment on the west bank of the Los Angeles River extending to the First Street Bridge; permanent removal of 5,565 feet of BNSF storage tracks at the north end of the West Bank Yard; shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (with a single loop track); and accommodation for four HSR run-through tracks from LAUS to First Street. Similar to Alternative 12, BNSF storage tracks would not be reconstructed resulting in a permanent loss of storage track capacity at the BNSF West Bank Yard.							
14. 6 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks (with shared lead tracks north of LAUS, no loop track, and dedicated lead tracks for BNSF freight trains and Amtrak trains) - The track alignment includes six lead tracks north of LAUS (two shared tracks for regional/intercity rail trains and HSR trains); removal of the Garden Tracks; four platforms for regional/intercity rail trains, two platforms for HSR trains, and one platform for the Gold Line LRT; a common bridge over the El Monte Busway and US-101; a common embankment north of Commercial Street extending to Center Street; a common bridge over Center Street; common embankments and/or bridges east of Center Street; a common bridge over the Amtrak lead track; a common embankment on the west bank of the Los Angeles River extending to the First Street Bridge; permanent removal of 5,500 feet of BNSF storage	Yes	Yes	Yes	Yes	Yes	Yes	Recommended to be carried forward for detailed evaluation in EIS

Table 2-1. Track Alignment Alternatives Screening Summary

Track Alignment Alternative	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
tracks at the north end of the West Bank Yard; dedicated lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard; six regional/intercity rail run-through tracks (no loop track); and accommodation for four HSR run-through tracks from LAUS to First Street. No lowering of Center Street or realignment of Commercial Street is required. Similar to Alternatives 12 and 13, BNSF storage tracks would not be reconstructed resulting in a permanent loss of storage track capacity at the BNSF West Bank Yard.							

Notes:
**** Embankments and/or bridges with associated civil/railroad infrastructure south of LAUS could be constructed in a phased manner.***
EIS=environmental impact statement; HSR=high-speed rail; LAUS=Los Angeles Union Station

Table 2-2. Passenger Concourse Concepts Screening Summary

Passenger Concourse Concept	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
Concourse Concept 1 (Maintain Passageway Concourse) - This concept would preserve the existing pedestrian passageway by maintaining the existing passageway, its utilities, and structure. Passenger loading platforms would be accessible via stairs and ramps, similar to existing conditions. Ramps servicing the platforms would be reconstructed to accommodate the vertical rise of the new top of rail and would be nearly 300 feet in length. The existing entrance and exit portals along the pedestrian passageway walls would be relocated to support the widened platforms, and the pedestrian passageway ceiling would also need to be reconstructed.	**No**	**No**	**No**	**No**	**No**	Yes	Rejected from further consideration – no added capacity, does not meet egress and safe evacuation requirements, no enhanced ADA accessibility, no improvements to baggage handling or separation of public and back-of-house spaces, and does not maintain or improve passenger transfer times.
Concourse Concept 2 (Widened Passageway Concourse) - This concept would widen the existing pedestrian passageway to a width of approximately 90 feet. The floor elevation would remain unchanged from the existing passageway. The widened passageway would be limited to passenger circulation and would not allow for station amenities, such as restrooms, waiting areas, information kiosks, retail space, or enhanced baggage handling	Yes	**No**	**No**	**No**	**No**	Yes	Rejected from further consideration – does not meet egress and safe evacuation requirements, no enhanced ADA accessibility, no improvements to baggage handling or separation of public and back-of-house spaces and does not maintain or improve passenger transfer times.

Table 2-2. Passenger Concourse Concepts Screening Summary

Passenger Concourse Concept	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
services. The concept would require demolition of the existing north and south ramps and stairs and would eliminate the historic pedestrian passageway walls to allow access to a wider passageway area.							
Concourse Concept 3 (At-Grade Concourse) - This concept would result in a new passenger concourse below the tracks with a minimum head clearance of 10 feet, 6 inches. This concept would require the temporary relocation of the Gold Line with a temporary platform while Platform 1 is raised, widened, and lengthened. For this concept, a structural system of girders would support the Gold Line platform and rail to create a wider, more open concourse space below. The installation of girders would require the Gold Line Platform 1 and Tracks 1 and 2 to be replaced in their entirety. In addition, the depth of proposed concrete girders requires the Gold Line Platform 1 be elevated to achieve a more desirable concourse height. The addition of East and West Plazas would provide opportunities for new open spaces and terraces. It would include additional space for transit amenities such as waiting areas, restrooms,	Yes	Yes	Yes	Yes	Yes	Yes	Rejected from further consideration – Although this concourse concept meets all screening criteria, this concept is not feasible and removed from further consideration due to cost and potential for increased environmental impacts related to emissions and traffic during construction, archaeological resources, contaminated soils, and contaminated groundwater as disclosed in the Final EIR for the Link US Project. A summary of the increased environmental impacts, as disclosed in Metro's Final EIR are as follows: • The emissions during construction of an at-grade concourse would expose sensitive land uses to an increased cancer risk of more than 10 in 1 million for total diesel particulate matter (PM_{10}). • The at-grade concourse would require additional truck trips and construction traffic resulting in more significant delays at nearby intersections • The at-grade concourse would require substantially more excavation activities and would result in a greater potential

Table 2-2. Passenger Concourse Concepts Screening Summary

Passenger Concourse Concept	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
retail areas, and other ancillary support functions.							for encountering archaeological resources, contaminated soils, and contaminated groundwater during construction.
Concourse Concept 4 (Above-Grade Concourse) - This concept would include an elevated component roughly 90 feet above the grade of the existing passageway. The above-grade concourse would span over the platforms and offer transit amenities such as waiting areas, lounges, and retail space while also meeting the egress capacity needs for the projected ridership growth. The concept would allow for high ceilings and maximize panoramic views of Downtown Los Angeles. The existing pedestrian passageway would be demolished.	Yes	Yes	Yes	Yes	**No**	**No**	Rejected from further consideration – includes an above-grade component that does not maintain or improve passenger transfer times or align with community preferences.
Concourse Concept 5 (Above-Grade Concourse with New Expanded Passageway) - This concept would include an elevated structure roughly 90 feet above the grade of the existing passageway. The elevated portion would span over the platforms and offer transit amenities such as waiting areas, lounges, and retail space while also meeting the egress capacity needs for the projected ridership growth.	Yes	Yes	Yes	Yes	**No**	**No**	Rejected from further consideration – includes an above-grade component that does not maintain or improve passenger transfer times or align with community preferences.

Table 2-2. Passenger Concourse Concepts Screening Summary

Passenger Concourse Concept	Meets Screening Criteria						Screening Outcome
	1	2	3	4	5	6	
The concept would allow for high ceilings and maximize panoramic views of Downtown Los Angeles. Additionally, it also includes a 120-foot-wide expanded passageway below the rail yard that would be four times the width of the existing pedestrian passageway.							
Concourse Concept 6 (Expanded Passageway) - This concept would include widening of the existing 28-foot-wide pedestrian passageway to a 140-foot-wide passageway below the rail yard to provide safe and accessible circulation through LAUS with modern passenger accommodations. New VCEs (stairs, escalators, and elevators) would provide connectivity from the expanded passageway that is at grade and below the rail yard to the passenger platforms above. The addition of East and West Plazas would provide opportunities for new open spaces and terraces. It would include additional space for transit amenities such as waiting areas, restrooms, retail areas, and other ancillary support functions.	Yes	Yes	Yes	Yes	Yes	Yes	Recommended to be carried forward for detailed evaluation in EIS.

Notes:
ADA=Americans with Disabilities Act; EIS=environmental impact statement

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2.1.4 Recommended Track Alignment Alternatives and Concourse Concepts for Detailed Evaluation

As summarized in Table 2-1 and Table 2-2, at the conclusion of the screening process, one track alignment alternative and one concourse concept was recommended for detailed evaluation as the Build Alternative in the Draft EIS/SEIR. Table 2-3 identifies the major components of the track alignment alternative and concourse concept recommended for detailed evaluation in this EIS.

Table 2-3. Track Alignment Alternative and Concourse Concept Recommended for Detailed Evaluation

Screening Name	Description Summary
Track Alignment Alternative 14	• Shared lead tracks north of LAUS • Common bridges and embankments with associated civil/railroad infrastructure that would accommodate six run-through tracks for regional/intercity rail trains and four run-through tracks for HSR trains from LAUS to the west bank of the Los Angeles River • Dedicated lead tracks for BNSF freight trains and Amtrak trains at BNSF West Bank Yard
Concourse Concept 6 (Expanded Passageway)	• 140-foot-wide expanded passageway • New VCEs (stairs, escalators, and elevators) • East and West Plazas

Notes:
HSR=high-speed rail; VCE=vertical circulation element

2.1.5 Reconsideration of Track Alignment Alternatives with 8 Run-Through Tracks

The Build Alternative Design Option includes 8 run-through tracks, is consistent with all applicable provisions of the purpose and need, meets all other screening criteria, and would avoid and reduce the magnitude and intensity of Project-related environmental effects. Other track alignment alternatives described in Table 2-1 above that also include 8 run-through tracks, previously rejected from further consideration for not meeting Criteria 1, were reconsidered to determine if they would qualify for detailed evaluation in the Final EIS. The reconsideration of alternatives analysis addressed:

- Purpose and Need Consistency
- Ability to Meet Other Screening Criteria
- Additional Environmental Considerations (based on identified impacts acknowledged in the Final EIS)

As summarized below, Track Alignment Alternatives 2, 5, 6, and 10, all of which include 8 run-through tracks, fulfill the provisions of the purpose and need; however, they do not meet other specified criteria and would result in greater environmental impacts. For these reasons, Track Alignment Alternatives 2, 5, 6, and 10 do not qualify for further consideration in the Final EIS.

Analysis Results

- **Track Alignment Alternative 2: 4 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks**
    - ***Purpose and Need -*** Track Alignment Alternative 2 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 2 accommodates the planned HSR system; however, it does not include construction of common infrastructure from LAUS to First Street.
    - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 2 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.
    - ***Additional Environmental Considerations -*** Track Alignment Alternative 2 includes two dedicated HSR lead tracks in the throat segment, which requires partial acquisition of the William Mead Homes, which is a public housing complex with a significant low-income/minority resident population, Section 106 historic property, and Section 4(f) resource. Constructing railroad tracks outside of the existing railroad ROW closer to the residences would introduce additional noise, vibration, and air quality impacts to the community, and would cause greater impacts on historic property and Section 4(f) resources. Track Alignment Alternative 2 requires permanent realignment of the Gold Line and also includes a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101. These additional components increase construction-related impacts (Traffic, Air Quality, Noise) and would cause greater impacts to the local community.
- **Track Alignment Alternative 5: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS)**
    - ***Purpose and Need -*** Track Alignment Alternative 5 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 5 accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
    - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 5 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak

trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.

- ***Additional Environmental Considerations -*** Similar to Track Alignment Alternative 2, Track Alignment Alternative 5 requires partial acquisition of the William Mead Homes, permanent realignment of the Gold Line and also includes a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101; thereby resulting in a greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community.

- **Track Alignment Alternative 6: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS)**
  - ***Purpose and Need -*** Track Alignment Alternative 6 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 6 accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
  - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 6 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.
  - ***Additional Environmental Considerations -*** Track Alignment Alternative 6 does not require encroachment into the William Mead property or permanent realignment of the Gold Line, but does include a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101, thereby resulting in a greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community.
- **Track Alignment Alternative 10: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with HSR Double Decked).**
  - ***Purpose and Need -*** Track Alignment Alternative 10 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). This track alignment alternative accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
  - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 10 does not meet Screening Criterion 2 or 5 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard and stacked platforms at LAUS rail yard. This configuration would potentially impact intermodal freight operations and Amtrak

on-time performance to and from LAUS and would not meet applicable design criteria (vertical grade and curvature requirements).

- ***Additional Environmental Considerations -*** Similar to Track Alignment Alternatives 2 and 5, Track Alignment Alternative 10 requires partial acquisition of the William Mead Homes and includes a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101. Alternative 10 also includes an additional bridge over US-101 because an HSR platform would be stacked above the Gold Line; thereby resulting in an even greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community than Track Alignment Alternatives 2 and 5.

The analysis above demonstrates that other track alignment alternatives with 8 run-through tracks would not fulfill the applicable provisions of the purpose and need, would conflict with other screening criterion, and result in greater environmental impacts. Therefore, Track Alignment Alternatives 2, 5, 6, and 10 would not qualify for detailed consideration in the Final EIS. The Build Alternative Design Option includes 8 run-through tracks, is consistent with all applicable provisions of the purpose and need related to the track alignment, meets all other specified criteria, and would avoid and reduce the magnitude and intensity of Project-related environmental effects. For these reasons, a detailed consideration of the Build Alternative Design Option and the associated environmental effects is included in the Final EIS. The Final SEIR certified by the Metro Board of Directors on October 23, 2025, includes the CEQA analysis of the refinements to the CEQA Modified Proposed Project and Chapter 9 includes the NEPA analysis of the Build Alternative Design Option.

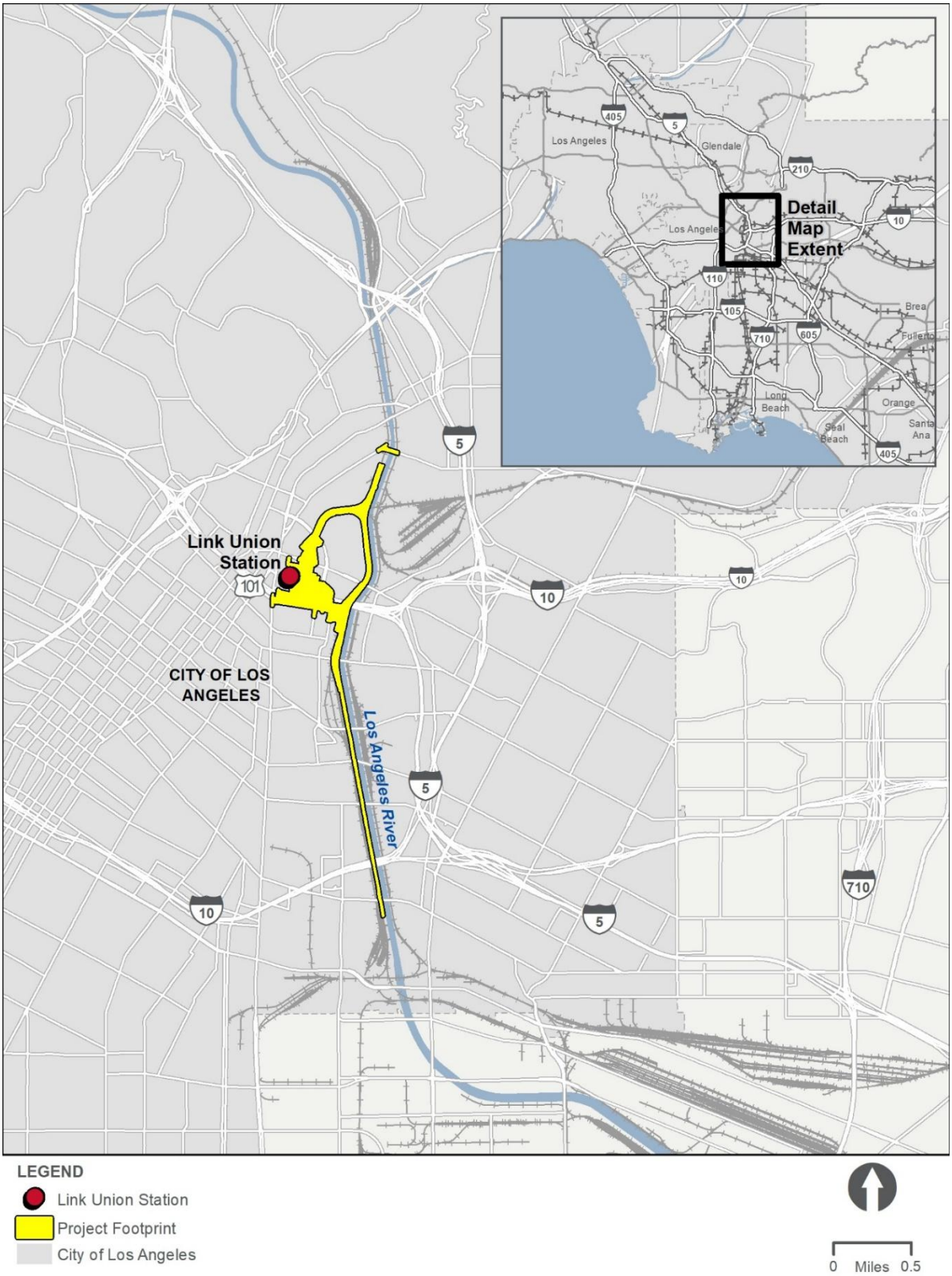
2.2 Project Location and Regional Vicinity

The Build Alternative consists of infrastructure improvements in Downtown Los Angeles in the vicinity of LAUS. The Project footprint extends north and south of LAUS to accommodate proposed infrastructure improvements. The northern Project limit is at North Main Street (Mile Post [MP] 1.18) and the southern Project limit is in the vicinity of Control Point (CP) Olympic, south of Interstate 10 and Olympic Boulevard (MP 142.70). Major Project components are primarily located between Main Street and First Street. The end-to-end distance from Main Street to First Street is approximately 1.4 miles. The Project location and regional vicinity is depicted on Figure 2-1.

Control Point

Location of signals and/or switches that are controlled from a distant location.

Figure 2-1. Project Location and Regional Vicinity



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2.3 High-Speed Rail Design Accommodation

LAUS is located between the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system. CHSRA is responsible for the planning, design, construction, and operation of the planned HSR system, as well as preparing all environmental clearance documentation required for the entirety of the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections. The Link US Project footprint is large enough to include common rail infrastructure and additional infrastructure elements that CHSRA requires to operate its HSR system. Physical construction of common rail infrastructure that would allow CHSRA to construct the remaining infrastructure elements for the HSR system and to operate HSR trains within the Link US Project footprint is part of the Build Alternative and evaluated within this EIS. The Link US Project footprint also accommodates the space required for installation of overhead catenary system (OCS) poles and other HSR related utility improvements. When this EIS states the planned HSR system is “accommodated”, it means Metro would construct the common rail infrastructure described in this EIS consistent with specifications and requirements that CHSRA designates as appropriate for CHSRA to operate its HSR system within the limits of the Link US Project footprint. The northern and southern limits of the design accommodation for the planned HSR system within the Link US Project footprint is depicted on Figure 2-2. A summary of the HSR design accommodation in this EIS is below.

- North of LAUS, the Build Alternative includes 6 new shared lead tracks to support regional/intercity trains. Two of the shared lead tracks are designed to be compatible with HSR trains. The northern limit of HSR design accommodation in this EIS is where new lead tracks would converge with mainline tracks north of LAUS at MP 0.91 (Figure 2-2).
- At LAUS, the Build Alternative would include new platforms on an elevated rail yard. Platforms 2 and 3 would meet CHSRA's level boarding requirements to support HSR trains. Other concourse-related improvements, including new VCEs and other back-of-house areas, would be designed to support HSR operations at LAUS.
- South of LAUS, the Build Alternative would include common rail bridges and embankments from LAUS to First Street, along the west bank of the Los Angeles River. Common rail infrastructure south of LAUS would support regional/intercity rail run-through tracks and HSR run-through tracks. Figure 2-7 (Maps 1 through 5) depict the location of HSR run-through tracks evaluated in this EIS. The southern limit of HSR design accommodation is First Street along the west bank of the Los Angeles River at MP 141.10 (Figure 2-2).

Common Rail Infrastructure

Tracks, platforms, bridges, embankments, and associated civil/railroad infrastructure that would accommodate both regional/intercity rail trains and HSR trains.

As part of the Link US Project, the following common rail infrastructure is environmentally evaluated in this EIS:

- North of LAUS - Shared lead tracks (compatible tracks), and the new Vignes Street Bridge and new Cesar Chavez Avenue Bridge are considered common rail infrastructure.
- At LAUS, Platforms 2 and 3, tracks, and concourse related improvements to support HSR operations are considered common rail infrastructure.
- South of LAUS, bridges, tracks, and embankments (extending from LAUS to First Street constructed wide enough to support run-through tracks for both regional intercity rail and HSR use and catenaries) are considered common rail infrastructure.

All other HSR-related infrastructure north and south of the Mile Post limits described above, and operation of the planned HSR system is or will be considered in CHSRA's environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

2.4 Project Implementation Approach

In April 2018, CalSTA awarded an $875 million grant under the Transit and Intercity Rail Capital Program (TIRCP) to SCRRA for implementation of the SCORE Program, of which SCRRA announced $398 million would be made available to implement run-through track improvements as part of the Project.

The scenario years considered in this EIS (the interim condition and the full build-out condition) correspond to the earliest timeframe when infrastructure could be constructed and operational. The infrastructure improvements as part of the interim and full build-out condition is described below.

2.4.1 Interim Condition (Phase A)

The interim condition (also referred to as Phase A) is when the run-through track infrastructure south of LAUS would be implemented, in addition to the associated signal modifications, property acquisitions, and civil/structural improvements to facilitate new run-through service (Figure 2-3). The preliminary engineering plans for the infrastructure improvements that are part of the interim condition (Build Alternative - Phase A Plan Sheets) are included in Appendix B of this EIS.

As depicted on Figure 2-3, the interim condition does not include new lead tracks north of LAUS, or the elevated rail yard and new concourse-related improvements at LAUS. The infrastructure improvements as part of the interim condition align with a construction completion date as early as 2026.

A summary of the proposed activities associated with the interim condition is provided below.

- Acquire properties south of LAUS within the Project footprint
- Relocate utilities north and south of LAUS
- Acquire a portion of the BNSF West Bank Yard (majority north of First Street) and remove 5,500 feet of existing storage tracks at BNSF West Bank Yard
- Construct special track work and modify signal/communication infrastructure north of LAUS
- Construct a run-through track ramp on the southern extent of Platform 4 at LAUS
- Construct a common viaduct/deck over US-101
- Construct a common embankment from Vignes Street to Center Street south of LAUS
- Construct common Center Street Bridge south of LAUS
- Construct common embankment or new common bridge from Center Street to Amtrak Bridge south of LAUS
- Construct common Amtrak Bridge south of LAUS
- Construct Division 20 access road
- Construct common rail embankment on the west bank of the Los Angeles River (from Amtrak Bridge to First Street Bridge)
- Construct new dedicated lead tracks for BNSF freight trains and Amtrak trains
- Construct two run-through tracks from Platform 4 at LAUS to the mainline tracks along the west bank of the Los Angeles River that would continue south past First Street

Some embankments and/or bridges south of LAUS could be constructed in a phased manner.

2.4.2 Full Build-Out Condition (Phase B)

The full build-out condition (also referred to as Phase B) is when new lead tracks and the elevated throat north of LAUS, along with the elevated rail yard and concourse-related improvements at LAUS would be implemented (Figure 2-4). The conceptual engineering plans for the infrastructure improvements that are part of the full build-out condition (Build Alternative - Phase B Plan Sheets) are included in Appendix B of this EIS.

Regional/intercity rail trains would operate on all lead tracks north of LAUS, including compatible lead tracks identified for HSR service. Regional/intercity rail trains would also have full use of tracks in the rail yard (with exception of Tracks 1 and 2) and regional/intercity rail run-through tracks south of LAUS. The full build-out condition aligns with a construction completion date as early as 2031.

A summary of the proposed activities associated with the full build-out condition is provided below.

- Construct new compatible lead tracks and reconstruct throat north of LAUS
- Construct new bridges over Vignes Street and Cesar Chavez Avenue north of LAUS
- Construct elevated rail yard, concourse-related improvements, and East/West Plazas at LAUS
- Construct 10 run through tracks (on previously constructed bridges and embankments south of LAUS) that would extend south of LAUS Platforms 2 through 6 and merge into a minimum of four tracks on the US-101 viaduct that would merge with the two run-through tracks (for both regional/intercity rail and HSR use) through to First Street that were previously constructed in the interim condition.

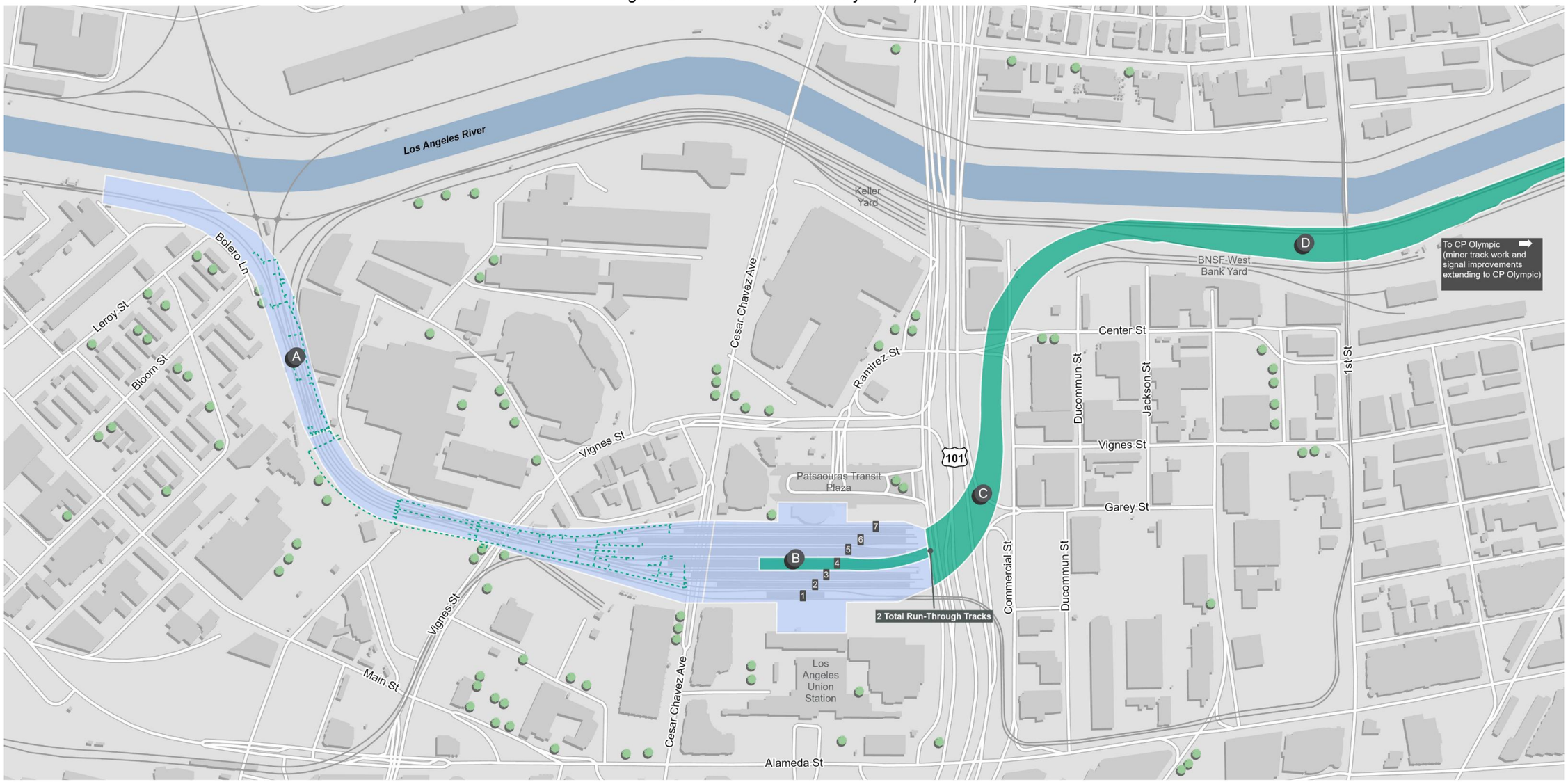
The full build-out condition includes the common rail infrastructure for the planned HSR system that would be located throughout the Link US Project limits, including improvements at LAUS. Operation of HSR trains would occur on two lead tracks north of LAUS, Platforms 2 and 3 and associated Tracks 3 through 6 at LAUS, and on HSR run-through tracks supported by common rail bridges and embankments south of LAUS. As discussed above in Section 2.3, operation of the planned HSR system is or will be considered in CHSRA's environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

Figure 2-2. Limits of HSR Design Accommodation in Link US Project



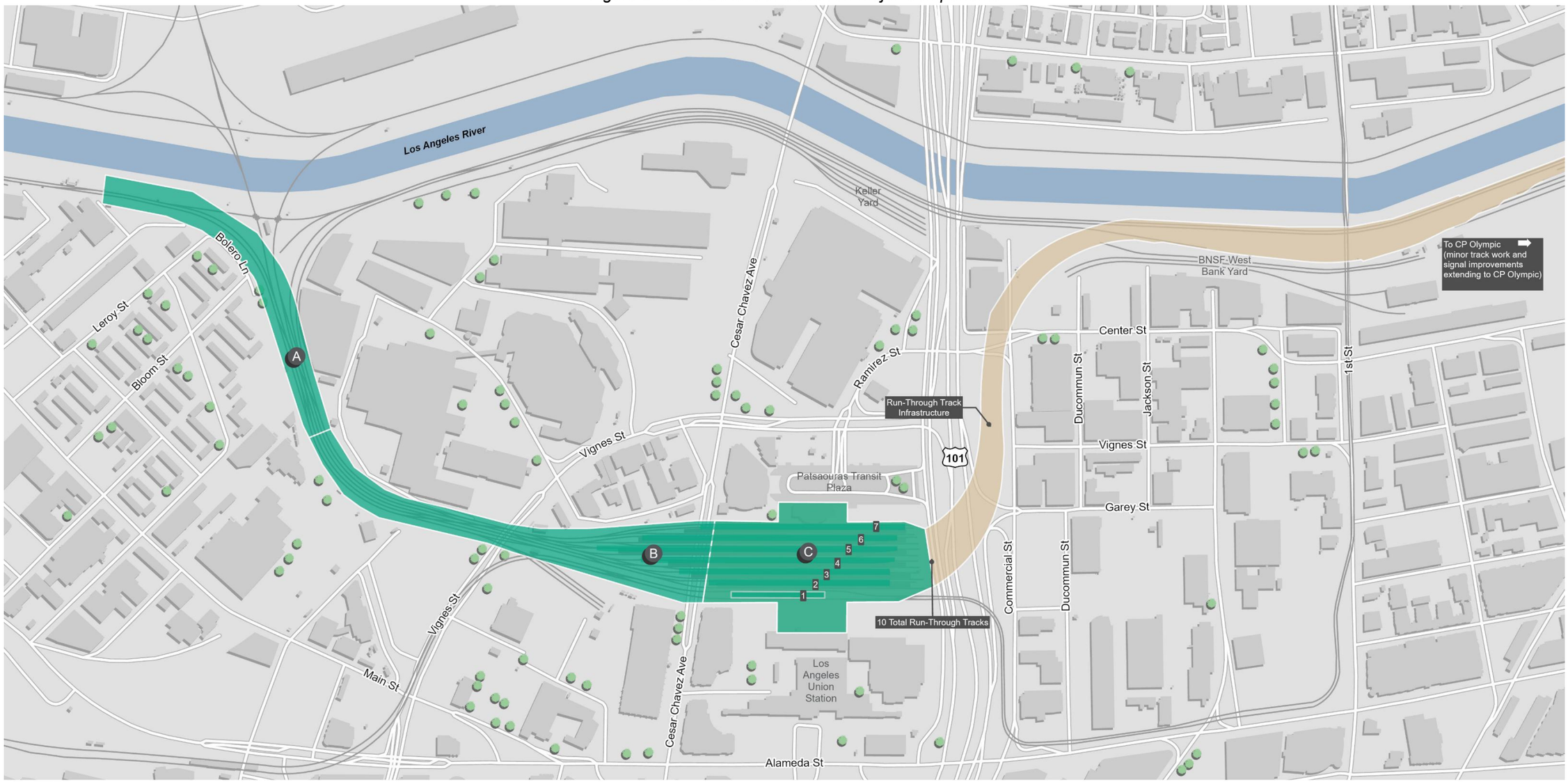
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Figure 2-3. Interim Condition Major Components



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Figure 2-4. Full Build-Out Condition Major Components



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2.5 Rail Yard Capacity Enhancements

Concurrent with the planning and development of the Project, SCRRA is initiating 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 Build Alternative is a critical component of the SCORE Program because it provides the capacity enhancements for Metro to accommodate the increase in train movements and associated passenger volumes forecast by existing (SCRRA, Amtrak, LOSSAN) and future (CHSRA) operators at LAUS. The Build Alternative 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. Implementation of the Build Alternative would also indirectly contribute to other cumulative benefits for the region, including a regional reduction of GHG emissions and vehicle miles traveled (VMT).

Table 1-1 in Chapter 1 of this EIS summarizes the projected total daily train movements (revenue and nonrevenue) through LAUS and the total trips during the two 3-hour AM and PM peak operating periods for 2016, the years 2026 and 2031 that correspond to the two major phases of project implementation (interim condition and full build-out condition), and the horizon year considered in this EIS (2040).[3] The proposed capacity enhancements would facilitate enhanced railroad operations to enable the rail operators at LAUS to meet the forecasted daily train movements through LAUS (in conjunction with other infrastructure improvements not related to the Project that would be implemented by other entities):

- Metrolink would operate 410 train movements through LAUS per day as early as 2026 and 690 train movements through LAUS per day as early as 2031. The projected service level for 2031 is consistent with the SCORE service plan and would represent a full build-out of Metrolink services for the foreseeable future, so the projected train movements remain the same for 2040.
- Amtrak and LOSSAN would operate 68 train movements through LAUS per day as early as 2026, 80 train movements through LAUS per day as early as 2031, and 140 train movements through LAUS per day as early as 2040.
- CHSRA would operate 272 HSR train movements through LAUS per day as early as 2040 (148 originating from/terminating at LAUS and 74 operating through LAUS to-and-from Anaheim). There would also be 50 daily deadhead equipment movements. HSR train movements into and out of LAUS (revenue and nonrevenue train movements) were provided by CHSRA for use in the environmental documentation for the Project.

[3] As discussed in Section 2.4, Project Implementation Approach, the infrastructure improvements as part of the interim and full build-out conditions would be implemented as early as 2026 and 2031, respectively. The year 2040 corresponds to the horizon year with corresponding service goals and objectives of multiple statewide plans and mandates.

As shown above, the Build Alternative would facilitate a substantial increase in Metrolink and Amtrak/LOSSAN service and new HSR service through LAUS, thereby contributing toward achieving the vision of multiple statewide and regional planning documents, including the California Transportation Plan 2050 (Caltrans 2021), 2020 RTP/SCS: Connect SoCal (SCAG 2020), and the 2018 California State Rail Plan: Connecting California (Caltrans 2018a), that provide for increased operational frequency for regional and intercity trains and introduction of the planned HSR system in Southern California by 2040. The operational scenarios for 2026, 2031, and 2040 are influenced by these statewide and regional plans for service increases but are only achievable upon implementation of other off-site infrastructure in the region (i.e., SCORE Program). The operational scenarios represent a conservative (high) estimate of the forecast increases in regional/intercity rail train trips and HSR train trips that could occur at LAUS and are used for environmental evaluation purposes.

Infrastructure improvements unrelated to the Build Alternative that are required to implement SCRRA's system-wide SCORE Program are the responsibility of SCRRA and other agency partners. Furthermore, the operational aspects of the planned HSR system and the associated environmental impacts resulting from implementation of the planned HSR system are not evaluated in this EIS because operation of the planned HSR system and the associated effects are addressed separately in the environmental documentation prepared by CHSRA for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

2.6 No Action Alternative – Detailed Description

NEPA (40 Code of Federal Regulations [CFR] 1502.14(d))[4] requires federal agencies to include an analysis of "the alternative of no action." For NEPA purposes, the No Action Alternative is the baseline against which the effects of implementing the Build Alternative are evaluated to determine the extent of environmental and community effects. For the No Action Alternative, the baseline year is 2016 and the horizon year is 2040.

The No Action Alternative represents the future conditions that would occur if the proposed infrastructure improvements and the operational capacity enhancements at LAUS were not implemented, and reflects the foreseeable effects of growth planned for the area in conjunction with other existing, planned, and reasonably foreseeable projects and infrastructure improvements in the Los Angeles area, as identified in planning documents prepared by SCAG, Metro, and/or Metrolink, including the 2023 FTIP (SCAG 2023), *Final 2008 Regional Comprehensive Plan* (SCAG 2008), and the 2020 RTP/SCS (SCAG 2020).

[4] The Council on Environmental Quality (CEQ) has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the California High-Speed Rail Authority (CHSRA) is relying on the regulations, as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* 15618 (Apr. 25, 1986).

Conditions in and around LAUS would remain similar to the existing condition, as described below:

- **North of LAUS** – Trains would continue to operate on five lead tracks north of LAUS and the throat tracks would retain the current configuration. The tracks north of LAUS would remain at the current elevation, and the Vignes Street Bridge and Cesar Chavez Avenue Bridge would remain in place.
- **LAUS** – 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 be retained in its current configuration. No modifications to the existing passenger circulation routes or addition of VCEs (escalators and elevators) at LAUS would occur.
- **South of LAUS** – The configuration of existing roadways would remain similar to the existing condition, and implementation of active transportation improvements would likely be implemented along Center Street in concert with the *Connect US Action Plan* (Metro 2015b) and Eastside Access Improvements. No modifications to the BNSF West Bank Yard would occur.

As discussed above, under the No Action Alternative, Metro would not realize enhanced operational capacity at LAUS to meet the demands of the broader rail system, thereby further constraining its ability to accommodate the forecast travel demands at LAUS.

2.6.1 Population and Employment Characteristics

As discussed in Chapter 1 of this EIS, Los Angeles County experienced a 5.2 percent increase in population growth from 2010 to 2019 (SCAG 2020). The SCAG growth forecasts indicate that long-term population growth in Los Angeles County and the City of Los Angeles is expected to increase by 13 and 18 percent, respectively, through 2045 (SCAG 2020). Section 3.13, Economic and Fiscal Impacts, and Section 3.15, Socioeconomics and Communities Affected, provide additional detail on population and employment characteristics within the LAUS Project study area.

2.6.2 Other Planned Projects and Infrastructure Improvements

Regional transportation projects planned and programmed by SCAG, Metro, and/or Metrolink and included as part of the 2023 FTIP (SCAG 2023), *Final 2008 Regional Comprehensive Plan* (SCAG 2008), and the 2020 RTP/SCS (SCAG 2020) would be implemented in accordance with applicable laws and regulations. These planned projects would be implemented regardless of if the Build Alternative is implemented and include a range of local traffic and transit improvements, new regional transit infrastructure improvements proposed by Metro, and system-wide enhancements by other agencies (e.g., Metrolink).

Additionally, planned and other reasonably foreseeable projects also include commercial and industrial land developments and utility construction projects in the City of Los Angeles. Large residential housing developments consisting of single and multifamily residential units,

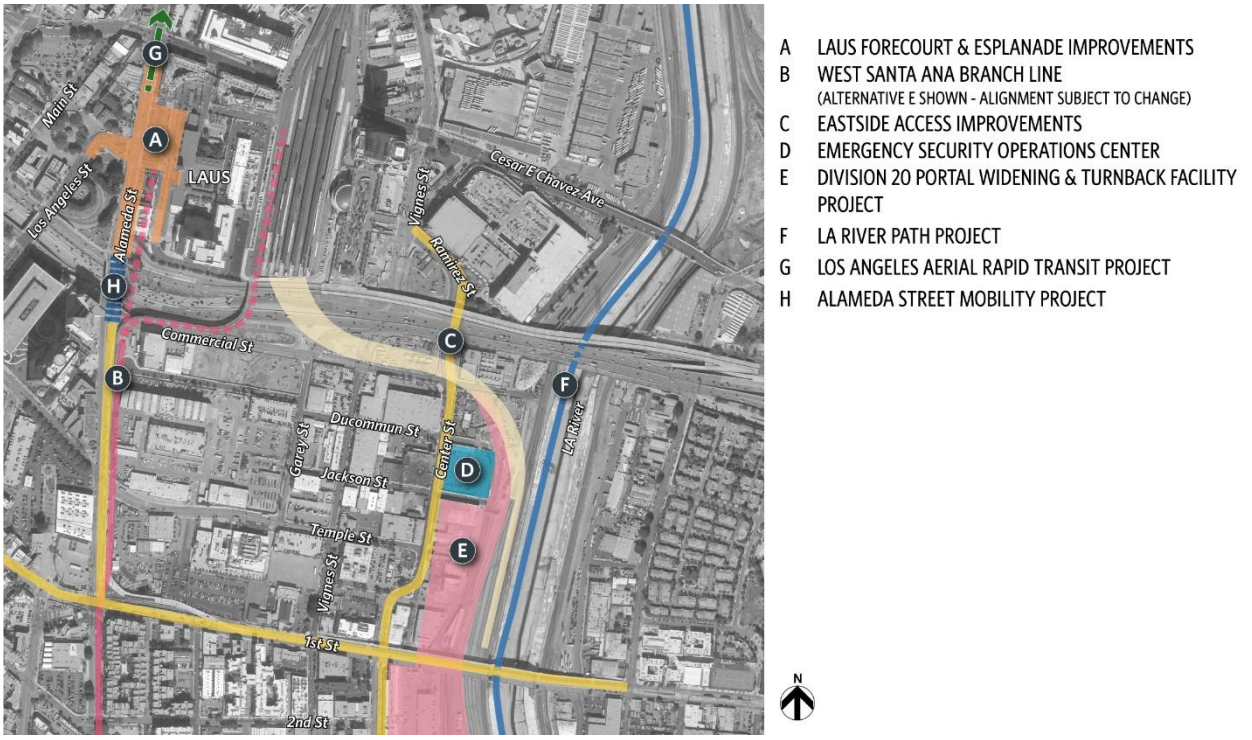
condominiums, and apartment projects are also planned regardless of the Build Alternative. These other projects are collectively considered as cumulative projects in Section 3.16, Cumulative Effects, of this EIS.

Figure 2-5 depicts other committed projects in the Project study area and their general geographic location. Each of these projects are summarized below:

- **Metro LAUS Forecourt and Esplanade Improvements Project –** The LAUS Forecourt and Esplanade Improvements Project would enhance 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 and the two driveways off Alameda Street into LAUS would be consolidated into one (Figure 2-6). 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 of Directors in March 2018. Metro has completed the final design for this project and is working towards advertising it for construction bidding. The forecasted opening is anticipated to be 2025 or 2026.
- **Metro West Santa Ana Branch (WSAB) Transit Corridor Project –** The WSAB Line Project is a proposed 19-mile light-rail transit line originally planned by Metro and the FTA to include a terminal platform at LAUS and connect Downtown Los Angeles to southeast Los Angeles County. On May 24, 2018, the Metro Board of Directors 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). The Draft EIS/EIR was released in July 2021. The project is partially funded under Measures R and M and based on the Measure M expenditure plan, completion of the full WSAB corridor is not expected to be completed until 2041.
- **Metro *Connect US Action Plan* and Eastside Access Improvements –** The *Connect US Action Plan* (formerly *Los Angeles Union Station and First/Central Linkages Study*) was developed to improve connections and access around Downtown Los Angeles and LAUS. Elements of the *Connect US Action Plan* include ultimate roadway widths and streetscape improvements (Cesar Chavez Avenue, Vignes Street, Center Street, and Commercial Street). The Eastside Access Improvement Project at the future Metro L Line (Gold) in the communities of Little Tokyo and the Arts District will help implement a program of streetscape, pedestrian safety, and bicycle access improvements around the station. 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 began in 2022.

- **Metro Center Project –** The Metro Center Project (formerly the Emergency Security Operations Center [ESOC]) 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. In the future, it can be expanded to integrate with Metro's rail and bus operations. The project was environmentally cleared in 2015. The project is funded by a $112.7 million Proposition 1B 2010-2011 California Transit Security Grant. The Metro Board approved construction for this project in Fall 2020. Construction is complete.
- **Metro Division 20 Portal Widening and Turnback Facility Project –** The existing subway portal at the north end of the Division 20 Rail Yard, south of US-101, would be upgraded to accommodate higher operating speeds and more frequent train operations by Metro Red and Purple Line trains. The turnback facility would consist of additional tracks being added to the Division 20 Rail Yard to allow more frequent turnbacks of Red and Purple Line trains leaving and re-entering service. In October 2018, the Metro Board of Directors certified the Final EIR. Construction began in late 2019 and is planned for completion in 2025.
- **Metro LA River Path Project –** The LA 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 to the City of Maywood. The LA River Path Project would be located on the west bank of the Los Angeles River (adjacent to the Project study area). This Measure M-funded project is currently in the environmental phase. Metro anticipates releasing the Draft EIR in Spring 2023. Construction is planned for completion in 2027.
- **Metro Los Angeles Aerial Rapid Transit Project –** The Los Angeles Aerial Rapid Transit Project would provide a gondola connection from LAUS to the Dodger Stadium property and include an intermediate station at the southernmost entrance of the Los Angeles State Historic Park. The project would provide a zero emission, rapid transit option for visitors to Dodger Station with a maximum capacity of 5,000 people per hour. Metro certified the Final EIR on February 22, 2024.
- **Metro Alameda Street Mobility Project –** Following implementation of the LAUS Forecourt and Esplanade Improvements Project, the Alameda Street Mobility Project was initiated to develop strategies to close the Alameda Street gap between Commercial and Arcadia Streets. The goal of the project is to improve safety, access and comfort for those that walk, bike or roll; improve mobility and safety of the local roadway and freeway and accommodate transit connections to Union Station. In January 2022, Metro initiated a study to assess alternatives and explore the feasibility of improvements to freeway on- and off-ramps along the corridor, including potential closure of ramps in the vicinity of LAUS.

Figure 2-5. Other Projects in the Los Angeles Union Station Project Study Area



Additional committed projects that would enhance regional connectivity, including connectivity to LAUS, but that are located outside of the immediate area surrounding LAUS include the following:

- **Regional Connector Project –** The Regional Connector Project consists of an extension of the Metro Gold line from the Little Tokyo/Arts District Station to the 7th Street/Metro Center Station. This extension would allow riders to connect to the Metro Red/Purple lines without having to switch stations. Future frequency of trains would reduce to 2 minutes on combined Red/Purple Lines during peak hours. This project is fully funded, partially through Measure R, as well as FTA grants. Project construction began in 2014 and is 90 percent complete. The project was opened in 2023.
- **Crenshaw/LAX Transit Project –** The Crenshaw/LAX Transit Project established a K Line from the existing Metro Exposition Line at Crenshaw/Exposition Blvd, 8.5 miles, to the Metro Green Line servicing cities of Los Angeles, Inglewood, El Segundo, and portions of unincorporated Los Angeles County. This line enables riders to access LAX through easier connections to the entire Metro Rail system, municipal bus lines, and other regional transportation services. This project was fully funded, partially through Measure R, as well as Proposition C. On October 7, 2022, the project opened to the public. While the K Line is open to the public and major construction has concluded, minor construction work continues in support of the rail line operations. The project opened in 2025.

- **Los Angeles World Airport Automated People Mover Project –** The Los Angeles World Airport Automated People Mover Project would create an electric train system with a total of six stations (three inside the Central Terminal Area and three outside) to transport people around the airport area. During peak hours, the Automated People Mover would run nine trains, each capable of carrying 200 passengers. Train frequency during peak hours is expected to be every 2 minutes. In addition to a reduction of traffic in and around the LAX area, there would also be a reduction in the airport area's carbon footprint. Construction began in March 2019, and the project opened in 2023. Funding for this project is provided by Los Angeles World Airports, as well as the City of Los Angeles.
- **Airport Metro Connector Project –** The Airport Metro Connector Project would consist of a new transit station that would connect the LAX to the regional transit system. This station would connect the Metro Green Line and Crenshaw/LAX Line with LAX's Automated People Mover. The project's EIR was certified in 2017. Funding for this project is provided partially through the Senate Bill (SB) 1 measure and Metro awarded a contract to construct this project in 2021. The project opened in 2024.
- **Purple (D Line) Extension Transit Project –** The Purple (D Line) Extension Project, formerly known as the Westside Subway Extension, is the extension of the Purple Line from its current terminus at Wilshire/Western, nine miles to the vicinity of I-405 and UCLA through the neighborhoods of Beverly Hills, Century City, and Westwood. The new line will ultimately add seven stations upon the completion of all three phases of the project. The extension is being constructed in three sections: Section 1 is a 3.9-mile-long segment from Wilshire/La Brea Station to the Wilshire/La Cienega Station (including three stations); Section 2 is 2.6 miles from Wilshire Rodeo Station to Century City/Constellation Station; and Section 3 is a 2.9-mile section from the Westwood/UCLA Station to the Westwood/Department of Veterans Affairs Hospital Station. The extension will consist of twin tunnels approximately 20 feet wide, located 50-70 feet underground. Section 1 was in operation in 2024, Section 2 is planned to be operational in 2025, and Section 3 is planned to be operational in 2027.

2.6.3 Traffic Forecasts and Roadway Characteristics

Traffic Forecasts

As disclosed in Section 3.3, Transportation, the 2016 RTP/SCS model was used as the basis for determining ambient traffic growth in Downtown Los Angeles. According to the SCAG Model Status Update presented by Caltrans Modeling and Forecasting Department on Oct 23, 2019, baseline VMT growth from 2016 to 2045 (no planned improvements), is within a 5 percent difference between the 2016 RTP/SCS and the 2020 RTP/SCS. However, the 2045 baseline VMT under the 2020 RTP/SCS is approximately 2 percent lower than the 2016 RTP/SCS. As compared to the 2016 RTP/SCS, the 2020 RTP/SCS contains less highway investment, more rail enhancement projects, and more Transportation Demand Management (TDM) measures, which results in relatively lower VMT generation. Accordingly, the SCAG 2016 RTP/SCS model outputs

would provide a more conservative estimate of traffic-related effects, and therefore was used for the environmental evaluation.

The following steps were taken to develop the 2031 and 2040 traffic forecasts for Downtown Los Angeles using the SCAG model data:

1. The list of committed projects described in Section 2.6.2 was compared against the land use assumptions in the SCAG model. It was determined that the majority of cumulative projects were in the SCAG model land use assumptions.
2. Based on projected growth in the Project study area and direction from LADOT,[5] a 0.2 percent per year growth rate was applied to the existing conditions traffic volume to generate ambient traffic growth.
3. Three specific projects that required trip generation estimates were identified and added to the cumulative traffic forecasts for 2031 and 2040 (Table 2-4).

The trip generation rates and estimates for the three specific projects are included in Table 2-4.

Table 2-4. Cumulative Projects Trip Generation Estimates

Project	Location	Description	Estimated Trip Generation						
			Daily Vehicular Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
1	441 Bauchet Street	Los Angeles County Men's Central Jail	—	64	75	139	69	208	277
2	129 College Street	College Station	—	169	290	459	307	201	508
3	800 Alameda Street (LAUS)	HSR[a]	32 percent of 40,960 = 13,107	1,305	870	2,175	870	1,305	2,175

Notes:
[a] Trip generation from the planned HSR system is based on data shared by CHSRA.
CHSRA=California High-Speed Rail Authority; HSR=high-speed rail; LAUS=Los Angeles Union Station

[5] This was confirmed at a meeting with City of Los Angeles Department of Transportation (LADOT) on May 25, 2016.

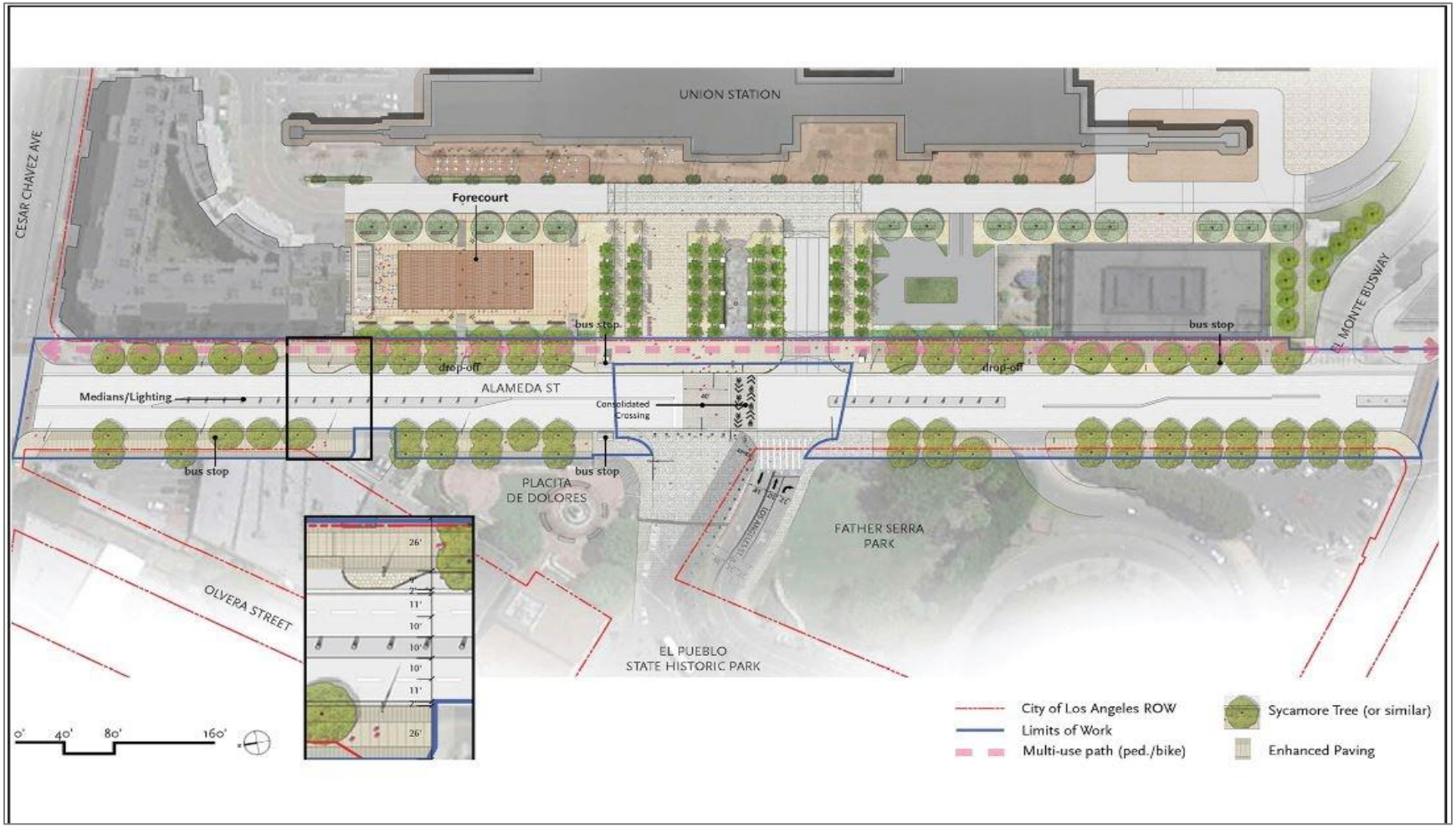
Characteristics of 2031 and 2040 Roadway System

In 2031, for the Downtown Los Angeles area in the vicinity of LAUS, it is assumed that there would be no major changes to the roadway network aside from those proposed in the 2020 RTP/SCS or studied as part of the Alameda Street Mobility Project. In 2031, it is assumed that the *Connect US Action Plan* would already be implemented, as well as the LAUS Forecourt and Esplanade Improvements Project. 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. In addition to the lane reductions, Los Angeles Street across from LAUS would be closed and vacated for an exclusive pedestrian plaza. With this closure, LAUS would have a combined intersection for entrances and exits. An illustration of the LAUS Forecourt and Esplanade Improvements concept is shown on Figure 2-6.

Therefore, the 2040 No Action Alternative condition is different from the existing condition with respect to the roadway network and traffic distribution with the completion of the *Connect US Action Plan* and LAUS Forecourt and Esplanade Improvements Project. Based on the cumulative traffic growth rate in the study area that is assumed to increase at 0.2 percent per year from 2016 to 2031 and 2040, the resulting peak hour traffic volumes under 2031 and 2040 no action conditions were estimated and are outlined in Section 3.3, Transportation, of this EIS.

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Figure 2-6. Alameda Street Improvements (Los Angeles Union Station Forecourt and Esplanade Improvements Project)



Source: Metro 2015b

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2.7 Infrastructure Improvements

This section describes the infrastructure improvements for the Build Alternative under the following six main categories.

- **Track and structural improvements** – New lead tracks north of LAUS, track/platform arrangements in the rail yard, and characteristics of the run-through track connections from LAUS to the mainline tracks on the west bank of the Los Angeles River are described. Bridge replacements, run-through track structures, and embankments/retaining walls are also described.
- **Concourse Improvements** – Passenger safety and accessibility improvements, and other amenities including the East and West Plazas are described.
- **Rail signal improvements** – Communications and systems-related equipment are described.
- **Utility improvements** – Wet and dry utility relocations, extensions, and/or abandonments are described.
- **Drainage and water quality improvements** – New drainage systems and permanent stormwater BMPs are described.
- **Circulation and streetscape improvements** – Temporary detours, roadway improvements (widening, realignment, reconfiguring, restriping, and resurfacing of local roadways) and safety improvements on US-101 and along nearby streets is described.

As presented in Section 2.7.1, the Build Alternative includes all required infrastructure improvements to implement the track alignment and concourse concept recommended for detailed evaluation in this EIS.

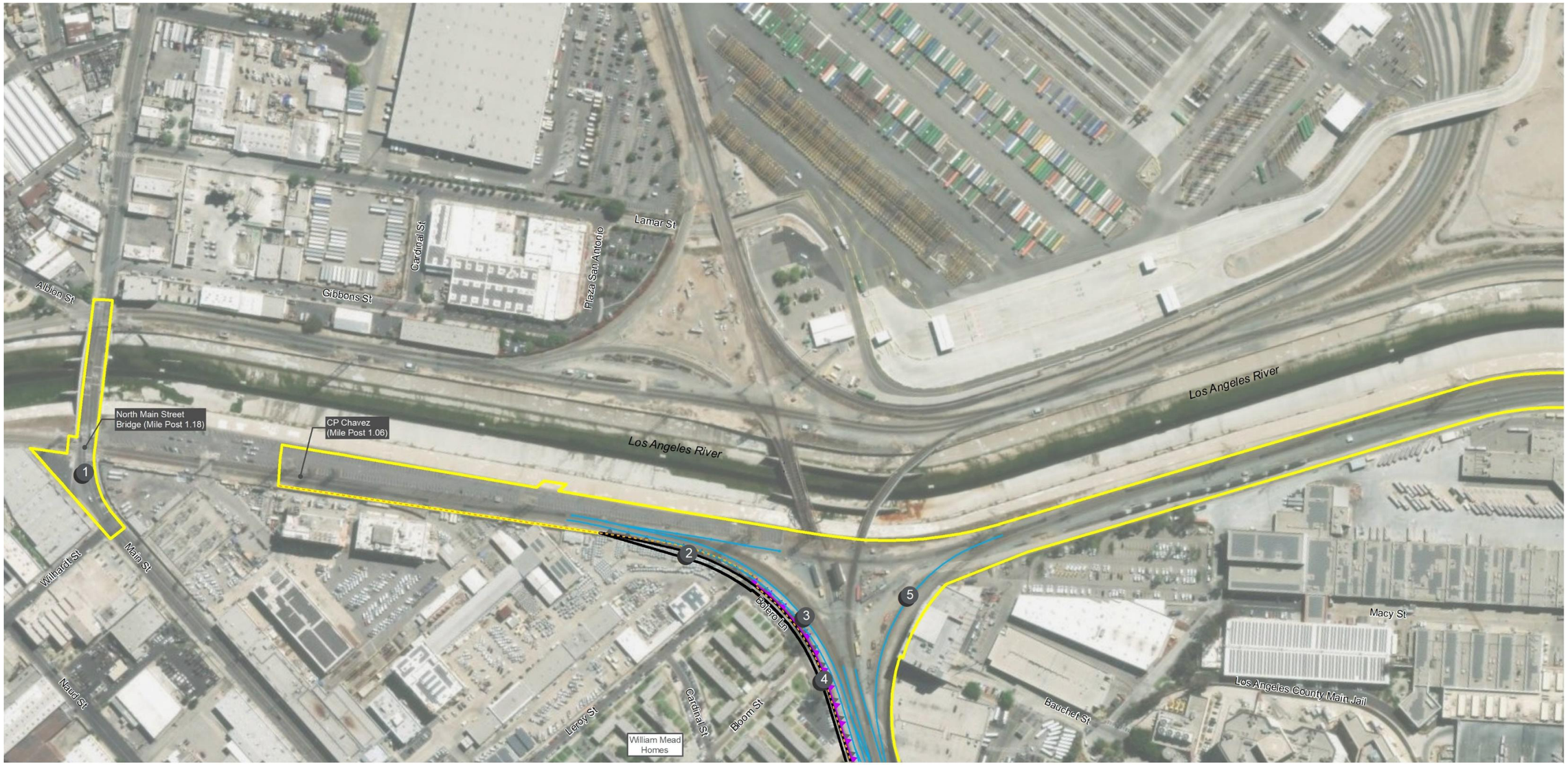
2.7.1 Build Alternative – Detailed Description

This section provides a detailed description of the key infrastructure improvements that would facilitate reconstruction of the throat tracks with six new lead tracks within a shared track alignment north of LAUS, a 140-foot-wide expanded passageway below an elevated rail yard at LAUS, and 10 run-through tracks that would extend south of LAUS Platforms 2 through 6 and merge into a minimum of four tracks on the US-101 viaduct and, and then to a minimum of two run-through tracks (for both regional/intercity rail and HSR use) through to First Street.

The Project footprint for the Build Alternative extends to the farthest extent of where temporary work areas (temporary impacts) would occur and where permanent infrastructure (permanent impacts) is proposed at or within the vicinity of LAUS. The Project footprint for major components associated with the Build Alternative is depicted on Figure 2-7 (Maps 1 through 5).

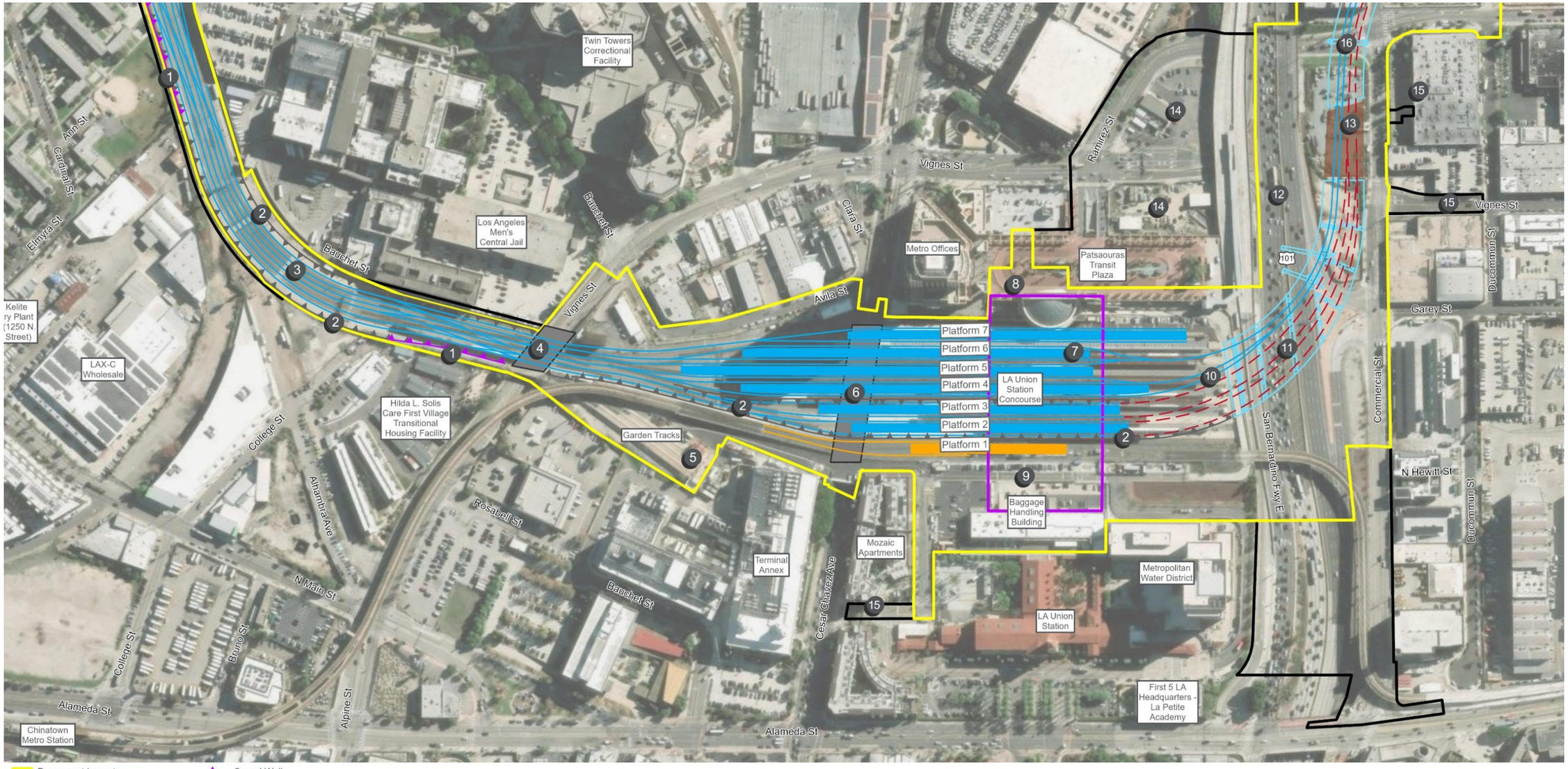
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Figure 2-7. Build Alternative Project Footprint (Map 1 of 5)



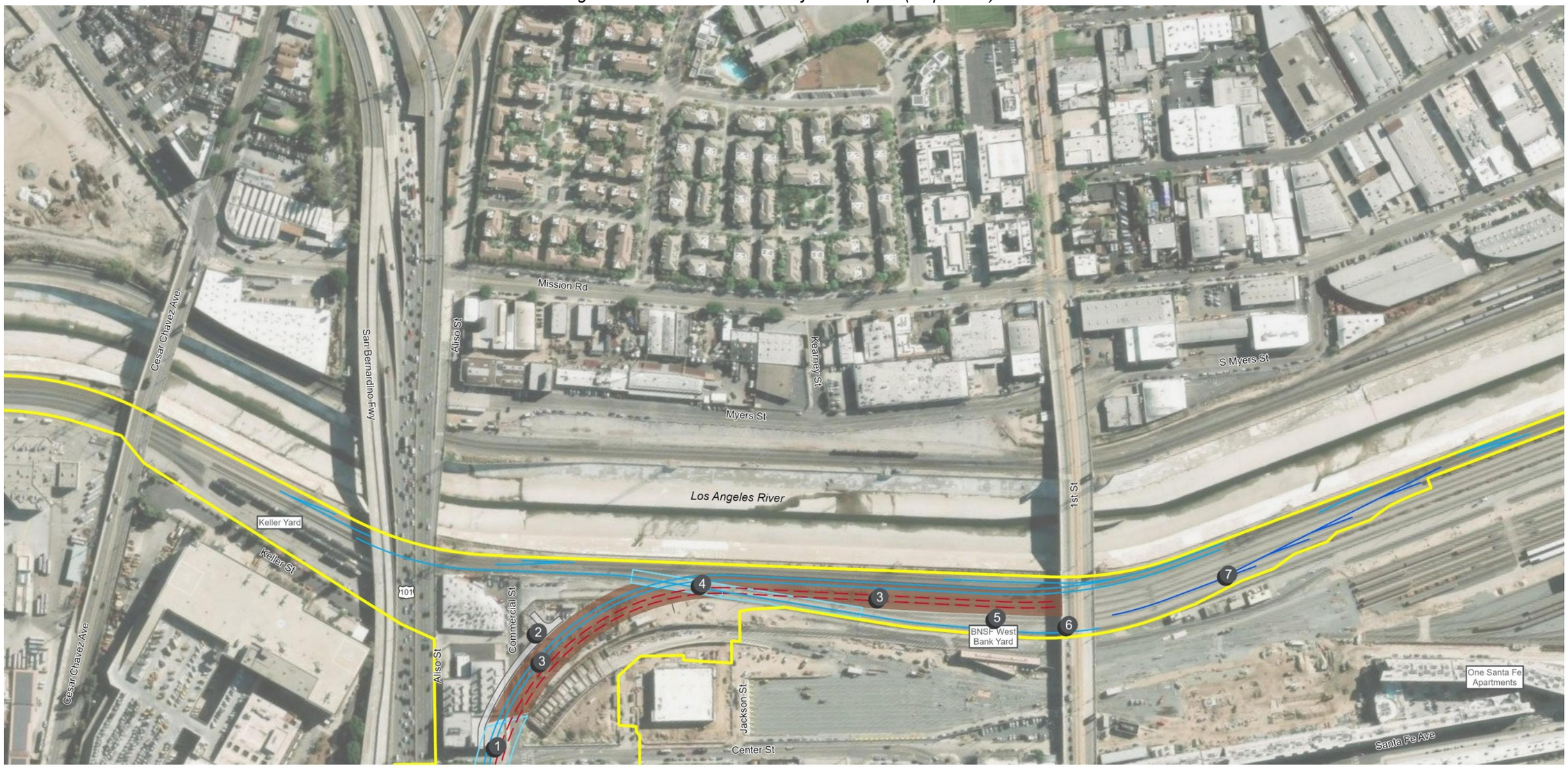
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Figure 2-7. Build Alternative Project Footprint (Map 2 of 5)



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Figure 2-7. Build Alternative Project Footprint (Map 3 of 5)



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Figure 2-7. Build Alternative Project Footprint (Map 4 of 5)



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Figure 2-7. Build Alternative Project Footprint (Map 5 of 5)



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Infrastructure improvements associated with the Build Alternative are described below.

Track and Structural Improvements

Track Improvements

Lead Tracks

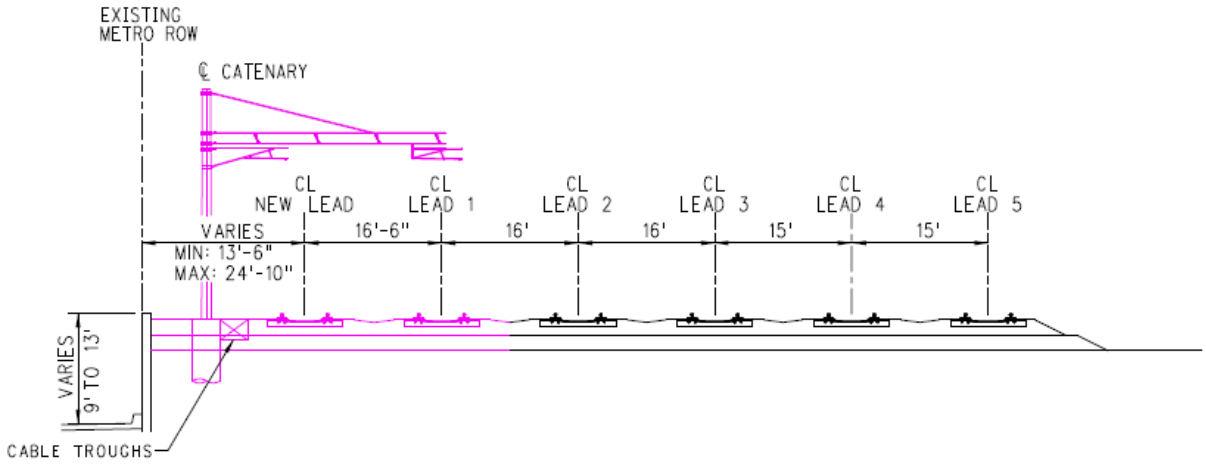
The Build Alternative includes a total of six lead tracks in the LAUS throat with regional/intercity rail trains and HSR trains sharing two compatible lead tracks for approximately 3,000 feet from CP Chavez to LAUS. The Build Alternative would include reconstruction of the LAUS throat with the addition of one new lead track within the existing railroad ROW. Retaining wall(s) would also be required within the existing railroad ROW. Temporary work areas may extend outside of the existing railroad ROW within the William Mead Home property to construct the retaining wall (and sound wall as part of Mitigation Measure NV-1 [see Section 3.6, Noise and Vibration].

Track improvements and their planned use in the interim and full build-out condition are summarized below.

- In the interim condition, lead tracks north of LAUS would not be constructed; however, special track work in the throat 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. Two tracks in the western portion of the throat would be constructed with a minimum 650'-0" radius curve and with turnouts compatible for operation of HSR trains by CHSRA.
- Eventually, HSR trains would operate on two tracks north of LAUS that would be electrified by CHSRA. Compatible tracks could also be utilized by regional/intercity rail trains both in the full build-out condition and after the initiation of planned HSR service, as they would be capable of running under their own power on the electrified tracks.

Figure 2-8 depicts a cross section of the shared lead tracks with electrified catenaries north of LAUS where HSR trains would operate.

Figure 2-8. Cross Section of Shared Lead Tracks for Regional/Intercity Rail and Planned High-Speed Rail System – North of Los Angeles Union Station



Throat Tracks

In the interim condition, all lead tracks through the LAUS throat, as well as the station tracks they serve (new Tracks 3 through 14, respectively), would be raised 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 permanent removal of the Garden Tracks and associated track work in the LAUS 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, positive train control (PTC), and communications-related equipment.

Temporary Run-Through Track Ramp

In the interim condition, no modifications to the tracks and platforms in the rail yard are proposed; with exception of Platform 4 and the proposed connections to Tracks 7 and 8.

From Platform 4, a temporary run-through track ramp would be constructed to connect Tracks 7 and 8 to the US-101 Viaduct and over the maintenance access road at the southern extent of the LAUS rail yard. Tracks 7 and 8 would facilitate run-through service for regional/intercity trains from LAUS to the mainline tracks on the west bank of the Los Angeles River. Passenger ramps leading to Platform 4 would be modified and/or demolished and reconstructed to facilitate construction of the temporary run-through track ramp.

Elevated Rail Yard

In the full build-out condition, the rail yard would be elevated with new platforms and tracks. The rail yard would be elevated so run-through track structures meet vertical clearance requirements for the El Monte Busway and US-101 (16.5 feet minimum vertical clearance per Caltrans standards). Platforms 2 and 3 would be constructed in the full build-out condition to meet

level boarding requirements for HSR trains. The characteristics of the elevated rail yard are depicted on Figure 2-9 and Figure 2-10, respectively and described below.

Level Boarding

Refers to "high-level" vehicles or trains with interiors that are level with station platforms, so passenger do not climb steps to board the train. This allows people in wheelchairs to board quickly and easily without any special assistance.

- Platform 1 (Tracks 1 and 2) - Gold Line Platform 1 and Tracks 1 and 2 would be replaced and elevated with a structural system of girders (replacing the current fill) to create a more open space below the rail yard for concourse-related improvements. The Gold Line Platform 1 would also be lengthened to enhance passenger egress and safe evacuation. No modification to the Gold Line Viaduct south of LAUS would occur. In both full build-out conditions, the Metro Gold Line trains would utilize Platform 1 (Tracks 1 and 2).
- Platforms 2 and 3 (Tracks 3 through 6) – In the full build-out condition, Platforms 2 and 3 would be constructed to their ultimate planned elevation, thereby eliminating CHSRA's need to raise and reconstruct the two platforms and associated VCEs at a later date to accommodate the planned HSR system at LAUS. The design approach for Platforms 2 and 3 and the adjacent tracks (Tracks 3 through 6) would allow for the platforms and associated VCEs to be constructed to their ultimate planned elevation when the rail yard is elevated.
    - As depicted in Figure 2-8, in the full build-out condition as early as 2031, Platforms 2 and 3 (and their associated VCEs) would be constructed 36-inches or 3 feet higher than Platforms 4, 5, 6 and 7 to accommodate the level boarding requirements for HSR trains. The adjacent tracks serving Platforms 2 and 3 (Tracks 3 through 6) would be constructed at an elevation of 312 above mean sea level (AMSL), and Tracks 7 through 14 serving Platforms 4, 5, 6, and 7 would be constructed at an elevation of 309 AMSL (36-inches or 3 feet lower). Retaining walls between Tracks 2 and 3 and between Tracks 6 and 7 are also proposed in the full build-out condition to accommodate CHSRA's track lowering in the full build-out condition with HSR (as early as 2033) with the intent of minimizing impacts to train operations.
    - As depicted in Figure 2-9, during the full build-out condition with HSR (as early as 2033), Tracks 3 through 6 would be lowered by 3 feet in elevation. Approximately 1,300 linear feet of each track from Tracks 3 through 6 would be lowered to accommodate the planned HSR system. It should be noted that Tracks 3 through 6 and Platforms 2 and 3 would be available for use by regional/intercity trains if high-level train vehicles are used.
- Platforms 4 through 6 (Tracks 7 through 12) – In the full build-out condition, Platform 4, the temporary run-through track ramp, and Tracks 7 and 8 would be demolished to facilitate construction of a new Platform 4 with associated regional/intercity rail run-through tracks. In both full build-out conditions, Tracks 7 through 12 would serve regional/intercity rail trains from Platforms 4 through 6 with six regional/intercity rail run-through tracks.

- Platform 7 (Tracks 13 and 14) – 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.

Figure 2-9. Cross Section of Rail Yard (Full Build-Out Condition) – Looking South

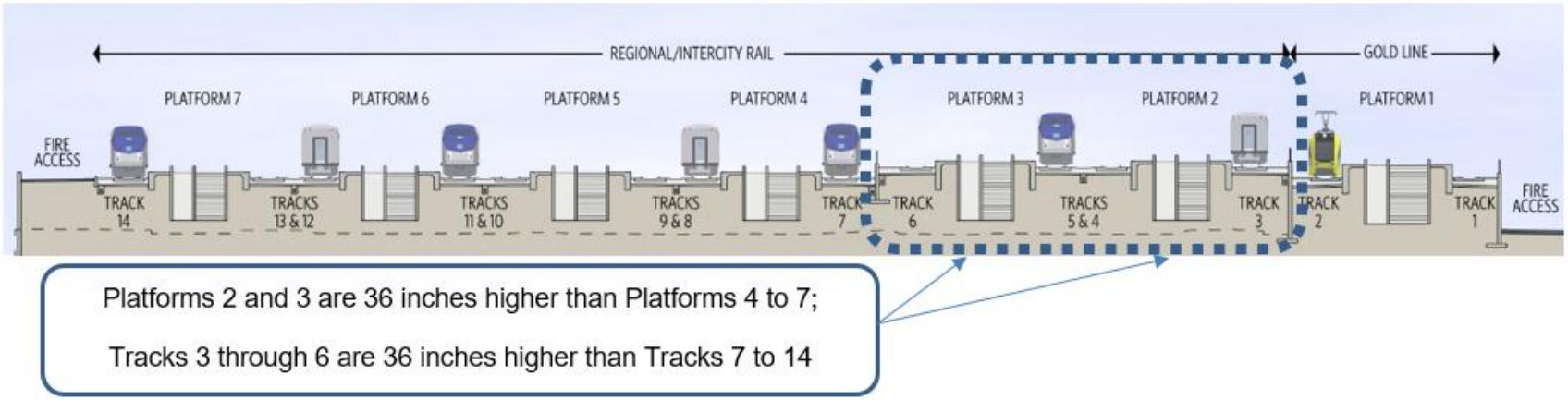
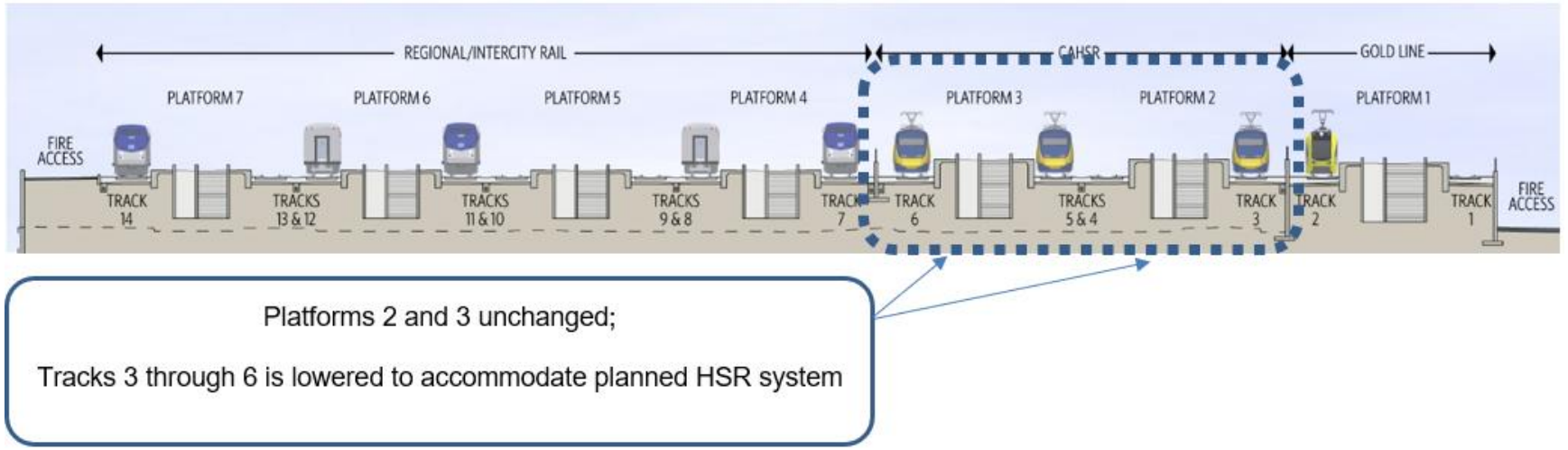


Figure 2-10. Cross Section of Rail Yard (Full Build-Out Condition with HSR Trains Depicted) – Looking South



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Platform Improvements

In the interim condition, the rail yard would be retained at its current elevation. The southern portion of Platform 4 would be shortened to facilitate construction of the temporary run-through track ramp supporting Tracks 7 and 8. Other platform enhancements and amenities including a new or modified canopy and furnishings along Platform 4 would also be implemented in the interim condition in conjunction with construction of the temporary run-through track ramp.

In the full build-out condition, the rail yard would be elevated with seven new platforms. As discussed above, Platform 1 serving the Gold Line would be lengthened and elevated to optimize the passenger circulation space below the rail yard, and Platforms 2 and 3 would be constructed to accommodate level boarding requirements for HSR trains as depicted on Figure 2-9 and Figure 2-10. Platforms 2 through 7 would also be widened to enhance safety, allow enough space for new VCEs while still providing sufficient room for passenger movements, and to meet current CBC and NFPA 130 performance requirements for egress and safe evacuation. With the exception of Platform 4, all other platforms would be shortened to accommodate the curvature required for run-through tracks south of LAUS.

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 2-5 are included in the environmental evaluation.

Table 2-5. Build Alternative 1 Platform Characteristics – Interim and Full Build-Out Conditions

Platform Number	Tracks	Platform Length (Interim Condition/Full Build-Out Condition) (feet)	Operator (Interim Condition/Full Build-Out Condition)	Platform Tracks South of LAUS (Interim Condition/Full Build-Out Condition)
1	1, 2	275/450	Metro	Run-through service (Gold Line)
2	3, 4	940/800	Metrolink and Amtrak/CHSRA	Stub-end/HSR or regional and intercity rail run-through service
3	5, 6	1,085/860	Metrolink and Amtrak/CHSRA	Stub-end/HSR or regional and intercity rail run-through service
4	7, 8	680/1,164	Metrolink and Amtrak	Run-through service/regional and intercity rail run-through service
5	9, 10	1,445/1,360	Metrolink and Amtrak	Stub-end/regional and intercity rail run-through service
6	11, 12	1,330/1,161	Metrolink and Amtrak	Stub-end/regional and intercity rail run-through service

Table 2-5. Build Alternative 1 Platform Characteristics – Interim and Full Build-Out Conditions

Platform Number	Tracks	Platform Length (Interim Condition/Full Build-Out Condition) (feet)	Operator (Interim Condition/Full Build-Out Condition)	Platform Tracks South of LAUS (Interim Condition/Full Build-Out Condition)
7	13, 14	990/972	Metrolink and Amtrak	Stub-end/stub-end service

Notes:
CHSRA=California High-Speed Rail Authority; EIS=environmental impact statement; HSR=high-speed rail; LAUS=Los Angeles Union Station

Run-Through Tracks

In the interim condition, two run-through tracks would be constructed to connect Tracks 7 and 8 from the LAUS rail yard to the mainline tracks on the west bank of the Los Angeles River. The proposed run-through track alignment for the Build Alternative would be located north of Commercial Street and would avoid conflicts with businesses and industrial buildings located on the south side of Commercial Street between Vignes Street and Center Street. In addition, conflicts with Metro's new widened Red/Purple Line subway tunnel portal that would be constructed as part of Metro's Division 20 Portal Widening and Turnback Facility Project and the ESOC Project, both of which are located east of Center Street would be avoided.

At the BNSF West Bank Yard, the Build Alternative includes dedicated lead tracks for Amtrak trains and BNSF freight trains, in addition to a common rail embankment on the west bank of the Los Angeles River extending to the First Street Bridge that would be wide enough to support regional/intercity rail run-through tracks and HSR run-through tracks. Dedicated lead tracks for Amtrak trains and BNSF freight trains would facilitate direct access to the Amtrak maintenance facility in the vicinity of Redondo Junction, and the remainder of the BNSF West Bank Yard, respectively.

Construction of a common rail embankment along the west bank of the Los Angeles River in conjunction with dedicated lead tracks for Amtrak and BNSF freight trains would result in permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard (majority of lost capacity would occur north of First Street). Approximately 24,645 feet of existing track at the BNSF West Bank Yard (south of First Street) would not be affected.

The mainline track connections for regional/intercity rail trains would occur approximately 1,000 feet south of First Street. Between First Street and US-101 on the west bank of the Los Angeles River, the existing two-track mainline would be reduced to a single track to accommodate the adjacent run-through track connection. The loss of one mainline track along a short segment of

the west bank of the Los Angeles River would be offset because run-through tracks would provide additional operational capacity.

In the full build-out condition, the Build Alternative accommodates four additional regional/intercity rail run-through tracks from rail yard Tracks 7 through 12 (6 total regional/intercity rail run-through tracks) that would extend to the mainline tracks on the west bank of the Los Angeles River within the limits of the Build Alternative Project footprint. The addition of four more run-through tracks would facilitate expanded regional/intercity rail run-through service and eventually HSR service capabilities.

Eventually, four HSR run-through tracks (Tracks 3 through 6) would be operational within the limits of the Project footprint.

Structural Improvements

The Build Alternative would include the following bridges, viaducts, and structural improvements:

- Replacement of bridges over Vignes Street and Cesar Chavez Avenue
- Construction of a new common viaduct over US-101 and the southbound US-101 ramp intersection at Commercial Street (the US-101 Viaduct terminates east of Vignes Street)
- Construction of a new common embankment north of Commercial Street between Vignes Street and Center Street
- Construction of a new common bridge over Center Street
- Construction of a new common embankment or bridge east of Center Street extending to the Amtrak Lead Track
- Construction of a common Amtrak Bridge
- Construction of a common embankment along the west bank of the Los Angeles River extending to First Street
- Construction of new retaining walls, concrete aprons, parapet walls, in-fill walls, concrete abutments, and/or placement of new concrete foundations

The structural improvements are described in detail below. Structural elements described below would be designed for a live load of Cooper E-60, as applicable.[6]

Vignes Street Bridge

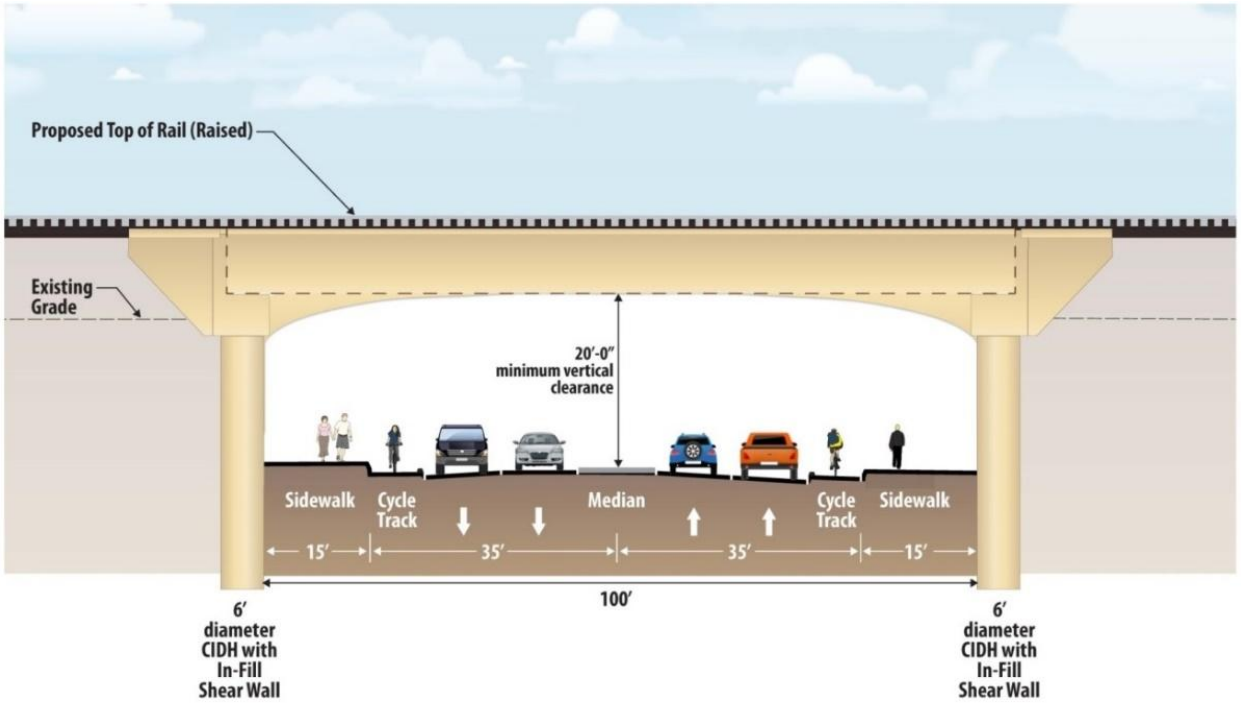
The Build Alternative includes replacement of the existing railroad bridge over Vignes Street. Replacement of the existing bridge is required because it would not support the additional loading

[6] 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 (AREMA) Cooper live load diagram to determine the actual E rating of a bridge, which depends on train speed, bridge span length, and bridge design.

requirements for passenger trains or steam locomotives[7] at 20 miles per hour which is the estimated rate of travel at this location. In addition, the existing bridge was constructed in 1937, is a federal and state eligible historic 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 CHSRA, the City of Los Angeles, and other applicable regulatory agencies (i.e., State Historic Preservation Officer [SHPO]). Figure 2-11 depicts a typical section for the replacement of the Vignes Street Bridge at a width that would not preclude future roadway improvements pursuant to the city's *Mobility Plan 2035*.

In the full build-out condition, the Vignes Street Bridge would be reconstructed in two portions, the westward and eastward portions. Closure of Vignes Street is required during the reconstruction of either the eastward or westward portion. During this duration, traffic along Vignes Street would be rerouted along Cesar Chavez Avenue and Alameda Street.

Figure 2-11. Proposed Vignes Street Bridge Replacement (Typical Section)



Cesar Chavez Avenue Bridge

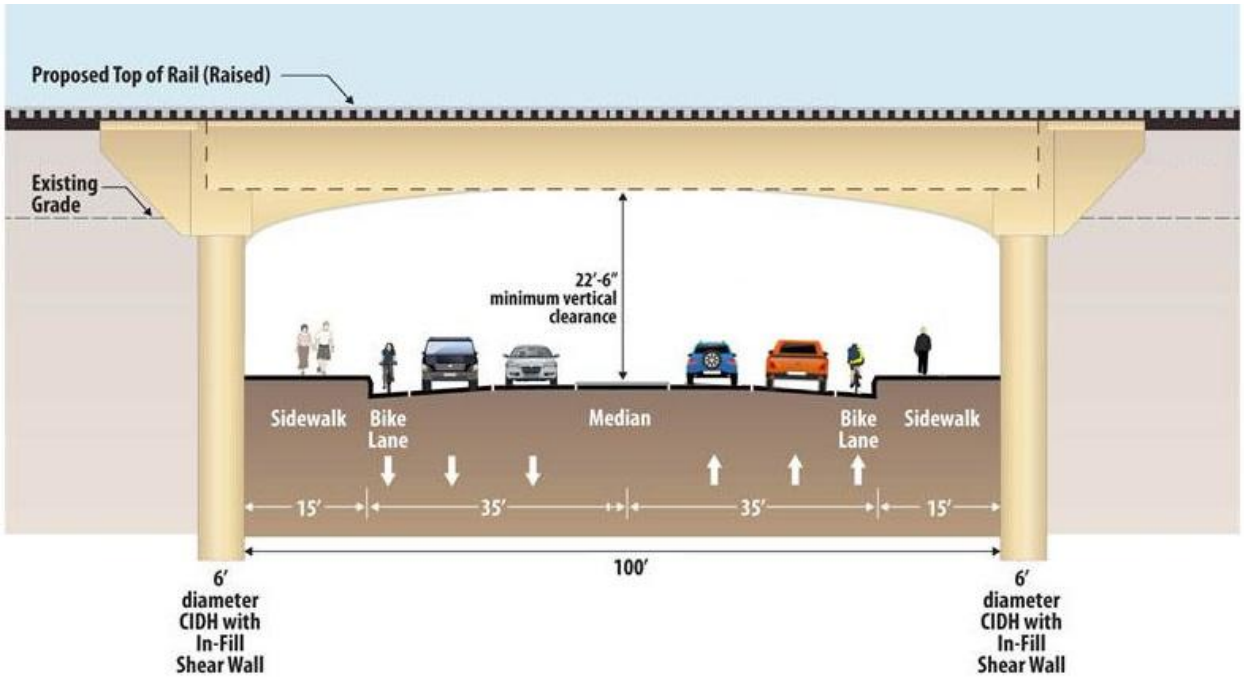
The Build Alternative includes replacement of the existing railroad bridge over Cesar Chavez Avenue. Replacement of the existing bridge is required because it would not support the

[7] Although steam locomotives do not commonly utilize the Vignes Street railroad bridge under existing conditions, they are accommodated in this document because there are specific public events where steam locomotives traverse the tracks to Los Angeles Union Station (LAUS).

additional loading requirements for passenger trains and steam locomotives at 20 miles per hour which is the estimated rate of travel at this location. This bridge was also constructed in 1937, is a federal and state eligible historic 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 CHSRA, the City of Los Angeles, and other applicable regulatory agencies (i.e., SHPO). Figure 2-12 depicts a typical section for the replacement of the Cesar Chavez Avenue Bridge at a width that would not preclude future roadway improvements pursuant to the city's *Mobility Plan 2035*.

In the full build-out condition, the Cesar Chavez Avenue Bridge would be reconstructed in two portions, the westward and eastward portions. 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 2-12. Proposed Cesar Chavez Avenue Bridge Replacement (Typical Section)



Common US-101 Viaduct

In the interim condition, a common viaduct over the El Monte Busway and US-101 would be constructed with a deck wide enough to support 6 regional/intercity rail run-through tracks and 4 HSR tracks. As described above in Section 2.4, the US-101 Viaduct could be constructed in a phased manner.

The US-101 Viaduct within Caltrans ROW would be approximately 205 feet wide, 700 feet long, with a deck elevation that varies between 307 feet and 314 AMSL. The height of the structure would vary from 25 feet to 35 feet in height, depending on location when measured from the

roadway below to the highest point of the viaduct structure. The US-101 Viaduct would be supported by two abutments and on seven bents located at the south end of LAUS, between the El Monte Busway and US-101, at the median, and on the south side of US-101 ROW. 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 structural requirements per Metrolink, Amtrak, and CHSRA design criteria manuals.

The US-101 Viaduct would be constructed of materials similar to those used in the Alameda Street overhead crossing and the Gold Line Viaduct. Metro, in coordination with the City of Los Angeles and Caltrans, may also implement aesthetic treatments to the US-101 Viaduct and run-through structures south of LAUS. Examples of potential aesthetic treatment concepts that could be applied to the US-101 Viaduct and run-through tracks structures are depicted on Figure 2-13 and Figure 2-14. These aesthetic treatments are concepts and subject to change. Figure 2-13 and Figure 2-14 also depict the bicycle lanes along Commercial Street that would be required as part of the design.[8] Urban design enhancements would be implemented in coordination with City of Los Angeles and Caltrans.

Figure 2-13. Aesthetic Treatments and Urban Design Enhancements South of US-101 (Commercial Street)



[8] Bicycle lanes along Commercial Street are required as part of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning).

Figure 2-14. Aesthetic Treatments and Urban Design Enhancements South of US-101 (Center Street/Commercial Street)



Common Run-Through Track Embankment (Vignes Street to Center Street)

In the interim condition, a common run-through track embankment would be constructed from Vignes Street to the west side of Center Street that would be wide enough to support run-through tracks for regional/intercity rail trains and HSR trains. To avoid impacts on businesses along the south side of Commercial Street and minimize impacts on adjacent properties, the common run-through track embankment would be constructed adjacent to US-101 on undeveloped land located north of Commercial Street. The embankment would be approximately 29 feet above the existing elevation of US-101 and supported with vertical retaining walls. This EIS includes an evaluation of the largest conceptual limits of a run-through track embankment for the purpose of considering potential environmental effects.

In the full build-out condition, no major changes to the embankment would occur. A nominal amount of additional fill would be placed along the southern portion of the embankment to accommodate a higher profile to support HSR trains upon CHSRA's implementation of the planned HSR system. Figure 2-15 depicts a cross section of the common run-through track embankment in the interim condition and the full build-out condition (with HSR trains depicted).

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



Center Street Bridge

In the interim condition, a common bridge over Center Street would be constructed to support run-through tracks for regional/intercity rail trains and HSR trains. No modifications to the Center Street Bridge would occur in the full build-out condition.

Run-through Track Embankments and Bridges East of Center Street

East of Center Street, the Build Alternative includes common embankments and bridges extending from Center Street to the mainline tracks on the west bank of the Los Angeles River. At the BNSF West Bank Yard, a common Amtrak bridge and common embankment along the west bank of the Los Angeles River would be constructed in the interim condition.

The Amtrak Bridge would be constructed over the Amtrak lead track wide enough to support run through tracks for regional/intercity rail trains and HSR trains. As discussed above, the common rail embankment on the west bank of the Los Angeles River (from the Amtrak Bridge to the First Street Bridge) to support run-through tracks for both regional/intercity rail trains and HSR trains would result in the permanent loss of approximately 5,500 feet of storage track capacity at the north end of the BNSF West Bank Yard (majority of lost capacity would occur north of First Street). Approximately 24,645 feet of existing track at the BNSF West Bank Yard would not be affected.

Concourse Improvements

In the interim condition, no concourse-related improvements would be constructed, except for platform enhancements on Platform 4.

In the full build-out condition, the Build Alternative includes a 140-foot-wide expanded passageway below the LAUS rail yard in conjunction with new plazas east and west of the elevated rail yard (East and West Plazas). The expanded passageway and concourse-related improvements would be designed with the appropriate size and relative arrangement of waiting areas, wayfinding and signage, amenities, circulation spaces, and other back-of-house facilities. These improvements would increase passenger capacity, enhance safety and ADA accessibility, allow for more efficient passenger egress movements to and from the various transit modes at LAUS, and accommodate the forecast increases in passengers while meeting current building code requirements.

Existing ramps and stairs that currently provide passenger connections from the pedestrian passageway to the platforms on the rail yard (along with the Gold Line and Red/Purple Line subway station access points) would be modified to accommodate the new expanded passageway and installation of new VCEs (stairs, escalators, and elevators). As discussed above under the discussion of Track Improvements, VCEs serving Platforms 2 and 3 would accommodate CHSRA's level boarding requirements for HSR trains.

The expanded passageway and associated concourse-related improvements would include up to 600,000 square feet of space to meet the demands of a modern multimodal transit station with architectural elements and design features that balance the historic character of LAUS with a new modern design. Sustainable design features would be incorporated into the concourse-related improvements in accordance with the CBC, industry standards, and design criteria specific to Metro, SCRRA, LOSSAN, and CHSRA, as appropriate.

Concourse-related improvements associated with the Build Alternative include:

- 140-foot-wide expanded passageway below the rail yard
- Passenger circulation and waiting areas
- East and West Plazas
- Weather protection (see rail yard canopy design options)
- Ancillary support functions and back-of-house uses (staff support spaces, administrative areas, and baggage handling operations)
- VCEs (stairs, escalators, and elevators)
- Ticketing and baggage pick-up/drop-off 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

Baggage handling operations would be improved by providing more efficient and direct routes for drop-off and pick-up of luggage via a back-of-house tunnel adjacent to the 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 design. The existing baggage handling building would be repurposed, and the exterior loading dock/parking areas would be abandoned to provide space for the West Plaza. For passengers, new baggage drop-off locations would be provided in the East and West Plazas adjacent to ticketing areas, and baggage pick-up would occur within the expanded passageway where new carousels would be provided.

A canopy would be constructed over the West Plaza up to 70 feet in height. Individual canopies that would extend up to 25 feet over each platform, or a grand canopy that would extend up to 75 feet in height over the rail yard would also be constructed. The canopies over the rail yard are part of the Build Alternative and considered and evaluated in this EIS as Design Options 1 and 2, respectively (Sections 2.7.2 and 2.7.3).

Figure 2-16 through Figure 2-21 include architectural renderings of the concourse-related improvements as part of the Build Alternative including the 140-foot-wide expanded passageway, interior and exterior views of and within the West Plaza, East Plaza, ingress/egress areas, waiting areas, VCEs, and platforms areas. The renderings are conceptual, subject to change, and provided to illustrate the extent of architectural expansion and renovation if the Build Alternative were implemented.

Figure 2-16. Build Alternative – Expanded Passageway Entrance from West Plaza Looking East



Figure 2-17. Build Alternative – Expanded Passageway under Gold Line Platform Looking West



Figure 2-18. Build Alternative – New Platforms and Vertical Circulation Elements Looking North



Figure 2-19. Build Alternative – Expanded Passageway with Retail and Waiting Areas Looking Southwest



Figure 2-20. Build Alternative – Expanded Passageway Looking West



Figure 2-21. Build Alternative – Expanded Passageway Entrance Looking West



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 Build Alternative requires modifications to the existing railroad signal, communication, and PTC systems and new signal houses, wayside signals, and ancillary 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 north of LAUS 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.

In the full build-out condition, new rail signal and communications infrastructure would also be required to facilitate increased and new run-through service for regional/intercity trains, and eventually HSR trains.

Utility Improvements

Numerous utility conflicts would occur upon implementation of the Build Alternative (see Section 3.11, Public Utilities and Energy, for details). The Build Alternative would require additional utility services for the new platform areas and the concourse-related improvements. Increased on-site water service would be required for fire flow and domestic flow demands and pressures and on the platforms. Additional power service connections from the City of Los Angeles Department of Water and Power (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 amenities. These new utility services would not require any reconstruction of existing public utility lines outside of the Project footprint to accommodate the additional demands. The Build Alternative 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) and along the run-through track alignment south of LAUS. All utility work would be conducted in accordance with applicable utility design criteria and engineering standards. Existing streetlights and traffic signals may also be relocated or replaced, as needed.

Drainage and Water Quality Improvements

The Build Alternative 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 Build Alternative would include the following post-construction BMPs to address applicable stormwater requirements:

- North of LAUS, 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 area north of LAUS, including a portion of the concourse area at LAUS.
- At LAUS, capture-and-use BMPs (cisterns) are proposed in the vicinity of the rail yard.
- South of LAUS and US-101, bioretention and other structural stormwater filter BMPs are proposed to treat the runoff from the run-through track structures and embankments.

Circulation and Streetscape Improvements

Circulation and streetscape improvements associated with the Build Alternative would enhance public safety. Safety improvements to portions of North Main Street and US-101 would be implemented as part of the Build Alternative, as would modifications to existing streetlights and traffic signals.

A description of the circulation and streetscape improvements are presented below. Roadway ROW widths are subject to the city's *Mobility Plan 2035*.

US-101

Implementation of run-through tracks over US-101 requires modifications to the lane geometry of the existing highway to accommodate the placement of bents and support structures in Caltrans ROW. The following highway modifications/safety improvements within the Caltrans ROW would require an encroachment permit as part of the Build Alternative:

US-101

- Improved median and shoulder horizontal clearances
- Increased horizontal stopping sight distance to provide required design speed
- Increased shoulder widths for enhanced horizontal clearance and safe refuge area for disabled vehicles
- Increased lane widths for reduced sideswipe collisions
- Improved lane geometry to provide increased comfort speed for existing super elevation
- 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 diverge angle (provides standardized exit geometry matching driver expectations for safe exits)
- Increased shoulder width for enhanced horizontal clearance and safe refuge area for disabled vehicles
- Increased weaving length, which provides for safer exit from US-101

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

- Increased shoulder widths for enhanced horizontal clearance and safe refuge area for disabled vehicles
- Increased weaving length, which provides for safer merges onto US-101

Vignes Street On-Ramp (Northbound)

- Increased weaving length, which provides for safer merge onto US-101

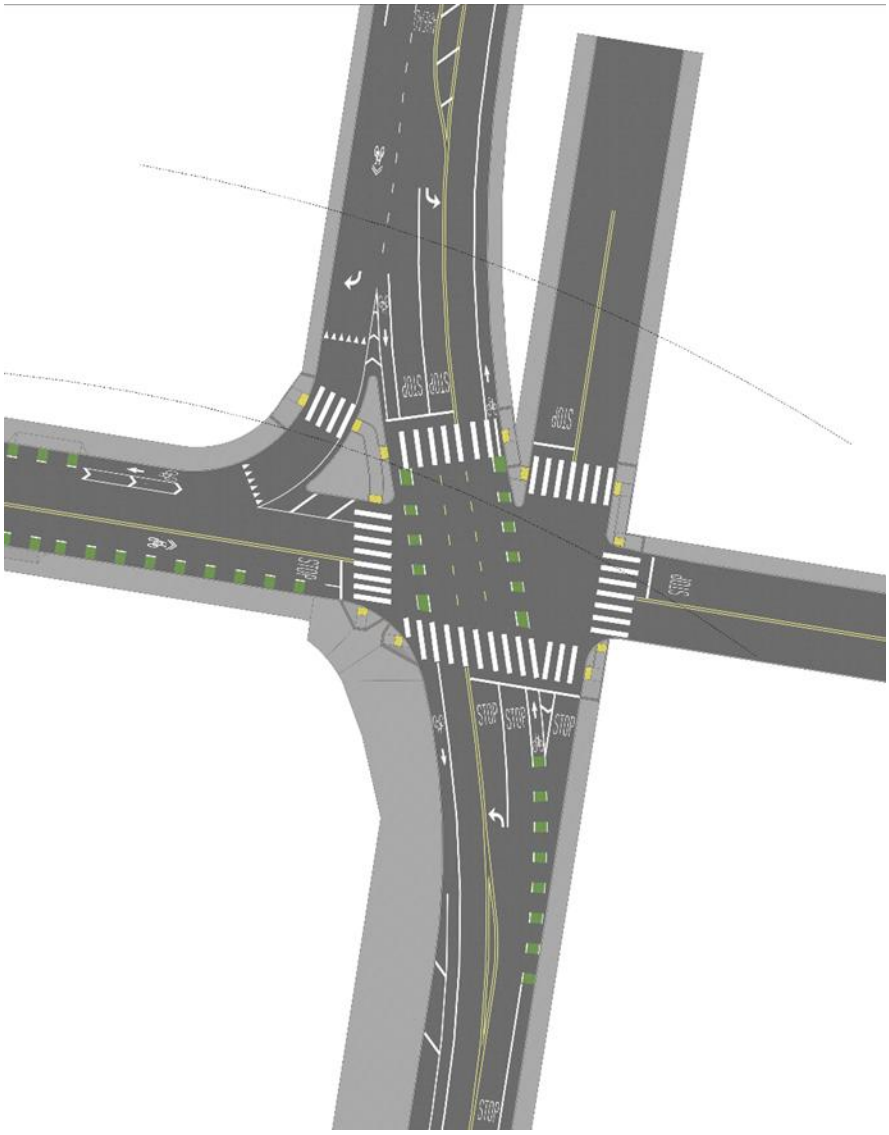
Commercial Street/Old Center Street

In the interim condition, Commercial Street between Garey Street and Center Street would be modified to accommodate run-through tracks and streetscape improvements (street trees/pedestrian lighting and ADA improvements. During the interim condition, the portions of Commercial Street (east of Center Street) and Old Center Street (between Commercial Street and US-101) would also be vacated. The eastward curb and sidewalk along Center Street would be extended through the existing Commercial Street/Center Street intersection to facilitate these street closures. Access to Metro's Division 20 facility and other businesses that would remain after implementation of proposed run-through track infrastructure would be relocated as part of the Build Alternative.

Center Street (between US-101 and Ducommun Street)

In the interim condition, Center Street from Ducommun Street to US-101 would be reconstructed to not preclude infrastructure improvements along this roadway envisioned as part of the *Connect US Action Plan*. As depicted on Figure 2-22, at the intersection of Center Street and Commercial Street, new sidewalks, bike lanes, and pedestrian safety/ADA features would be implemented as part of the Build Alternative.

Figure 2-22. Center Street/Commercial Street Intersection



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* and *Downtown Los Angeles Community Plan*:

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

Cesar Chavez Avenue

As part of the reconstruction of the Cesar Chavez Avenue 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 203*5 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 *Downtown Los Angeles Community Plan*:

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

North Main Street

Due to the projected increase in train movements anticipated through the North Main Street crossing, safety improvements in conjunction with a future quiet zone are being jointly coordinated between the City of Los Angeles and Metro. In the interim condition, the Build Alternative includes safety improvements that would be constructed at the North Main Street at-grade railroad crossing to support the future implementation of a quiet zone by the City of Los Angeles. The implementation of a future quiet zone is subject to review and approval by the California Public Utilities Commission (CPUC) and the Federal Railroad Administration (FRA) (Figure 2-23).

North of CP Chavez, the Build Alternative would include the following safety improvements at North Main Street:

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

On March 5, 2024, Measure HLA, also known as Healthy Streets LA, was passed and requires the City of Los Angeles to install street enhancements outlined in its *Mobility Plan 2035* when making road repairs. Based on comments received during the public comment period, Metro modified the design of the proposed North Main Street safety improvements to remove the median and accommodate future active transportation roadway improvements. The key components of the safety improvements, revised based on receipt of public and agency comments, are depicted in Figure 2-23.

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Figure 2-23. Safety Improvements at the North Main Street At-Grade Public Crossing



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In the full build-out condition, no additional safety improvements would be implemented at North Main Street. In support of the Burbank to Los Angeles Project Section of the planned HSR system, CHSRA may implement a grade separation at North Main Street to support operation of the planned HSR system as early as 2033. Upon implementation of the planned HSR system, the safety improvements (and quiet zone infrastructure constructed by City of Los Angeles) would be removed by CHSRA to facilitate construction of a grade separation for HSR trains.

2.7.2 Rail Yard Canopy Design Option 1 – Individual Canopies over Rail Yard

Rail Yard Canopy Design Option 1 would include replacement of the existing historic butterfly canopies with individual canopies above each platform. New individual canopies would be constructed in the full build-out condition in conjunction with other concourse-related improvements. Individual canopies would extend up to 25 feet above each platform, be similar in form to the existing butterfly canopies, but sized to provide shade and stormwater protection to patrons and employees on the new platforms on the elevated rail yard. Canopies would be designed to provide adequate air circulation from diesel exhaust and lighting during the nighttime hours.

2.7.3 Rail Yard Canopy Design Option 2 – Grand Canopy over Rail Yard

Rail Yard Canopy Design Option 2 would include replacement of the existing historic butterfly with a large grand canopy above all rail yard platforms. The grand canopy would be constructed in the full build-out condition in conjunction with other concourse-related improvements and would extend up to 75 feet above the elevated rail yard platforms. Figure 2-24 depicts an architectural rendering of the grand canopy over the rail yard.

Figure 2-24. Rail Yard Canopy Design Option B – Grand Canopy



2.8 Build Alternative Design Option – Summary

The Draft EIS/SEIR was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024, pursuant to CEQA Guidelines Section 15105 and NEPA 40 Code of Federal Regulations (CFR) 1502.19.

As discussed above and in Chapter 9, Metro proposed design modifications to the track alignment alternative, which required reconsideration of the criteria and results of the previous track alignment alternatives considered. The Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the SHPO and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.

The proposed design modifications to the Build Alternative Design Option would occur throughout all segments of the Project study area and include: modifications to the elevated throat tracks to avoid impacts to the Vignes Street Bridge, two fewer platforms raised with reduced extent of the elevated rail yard and concourse-related improvements that reduce impacts to LAUS, partial reconstruction of the Cesar Chavez Avenue Bridge, and two fewer run-through tracks on a single aerial viaduct from LAUS to the West Bank of the Los Angeles River. Chapter 9.0 of this EIS

provides a detailed description of the modifications/reductions associated with the Build Alternative Design Option.

2.9 CEQA Modified Proposed Project

As discussed above in Section 2 and in the Executive Summary of this EIS, Metro, as the Lead Agency under CEQA, prepared a SEIR to disclose to decision makers, public agencies, and the general public the changed circumstances that have occurred since certification of the Link US Project Final EIR on June 27, 2019 (State Clearinghouse No. 2016051071) and subsequent approval of CEQA Addendum No. 1 and adoption of the Revised MMRP on October 28, 2021. The changed circumstances, including the refinements to the Modified Proposed Project, are discussed and evaluated in the Final SEIR certified by the Metro Board of Directors on October 23, 2025.

2.10 Potentially Affected Parcels

Table 2-6 and Figure 2-25 identifies the 20 non-Metro-owned parcels within the Project footprint that would be potentially affected by the Build Alternative. Maintenance easements are accounted for within the limits of the Project Footprint. The *NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS) includes more detail on the description of property impacts for each potentially affected parcel.

Table 2-6. Summary of Non-Metro-Owned Potentially Affected Parcels

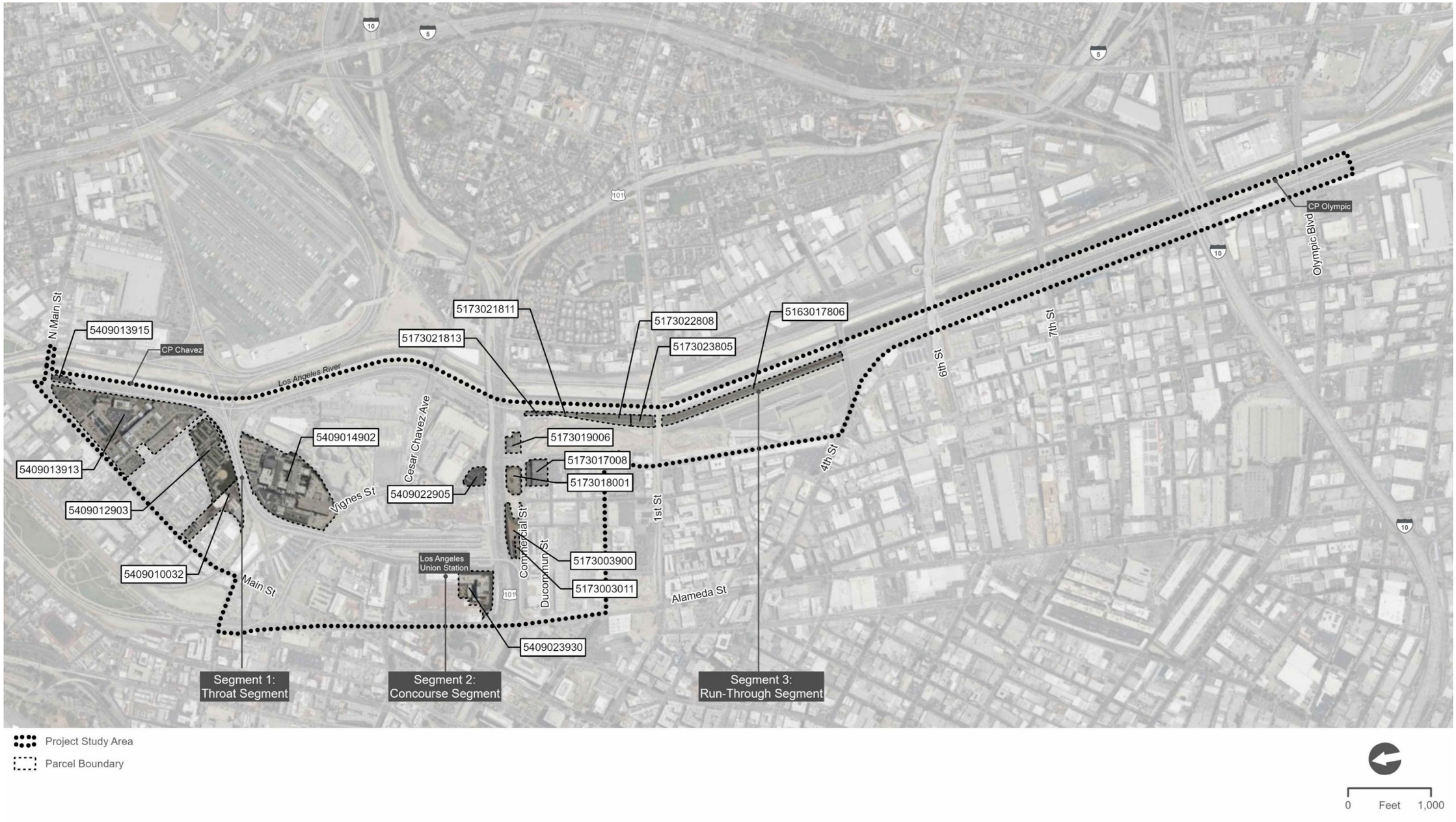
Assessor's Parcel Number	Parcel Name	Description of Property Impact
Throat Segment		
5409-013-913	LADWP Parcel	TCE for Construction Access and Potential Acquisition (Partial)
5409-012-903	HACLA William Mead Homes Parcel	TCE for Construction Access and Temporary Loss of Parking
5409-010-032	Kelite Parcel	TCE for Construction Access
5409-014-902	Los Angeles County Men's Central Jail Parcel	TCE for Construction Access
5409-013-915	City of Los Angeles Parcel	Potential Acquisition (Partial) related to design changes for North Main Street Safety Improvements
Concourse Segment		
5409-022-905	Denny's Parcel	TCE for Construction Staging/Laydown Area and Temporary Loss of Parking

Table 2-6. Summary of Non-Metro-Owned Potentially Affected Parcels

Assessor's Parcel Number	Parcel Name	Description of Property Impact
5409-023-930	MWD Parcel	Potential Road Widening for Baggage Movement
Run-Through Segment		
5173-003-011	PBR Realty Parcel	Potential Acquisition
5173-003-900	Caltrans Parcel	Potential Acquisition
5173-003-012	PBR Realty Parcel	Potential Acquisition
5173-003-002	Amay's Bakery Parcel (Storage Facility)	Potential Acquisition
5173-018-001	PBR Realty Parcel	Potential Acquisition
5173-017-008	Stiizy LA Parcel	TCE for Construction Access
5173-019-006	Life Storage Building Parcel	Potential Acquisition and Building Demolition
5173-019-011	Amay's Bakery Parcel (Main Facility)	Potential Acquisition and Building Demolition
5163-017-806	BNSF West Bank Yard	Potential Acquisition (Partial)
5173-023-805	BNSF West Bank Yard	Potential Acquisition (Full)
5173-022-808	BNSF West Bank Yard	Potential Acquisition (Full)
5173-021-811	BNSF West Bank Yard	Potential Acquisition (Full)
5173-021-813	BNSF West Bank Yard	Potential Acquisition (Full)

Notes:
APN=Assessor's Parcel Number; HACLA=Housing Authority of City of Los Angeles; LADWP=Los Angeles Department of Water and Power; MWD=Metropolitan Water District; TCE=Temporary Construction Easement

Figure 2-25. Non-Metro-Owned Potentially Affected Parcels



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2.11 Project Cost and Funding Sources

Capital cost estimates for the Build Alternative are based on conceptual and preliminary engineering. Capital expenditures during the Interim Condition are expected to be $1.93 billion.[9] During the Full Build-Out Condition, an additional $1.35 billion of capital expenditure is expected. This cost includes design, construction, ROW, and environmental mitigation expenditures (including implementation of Malabar Yard Railroad Improvements). The capital costs presented in this chapter are not inclusive of Metro's project development costs. As the Project moves through subsequent phases of design, the costs and implementation schedule will be further refined.

The following federal, state, and local revenue sources are some of the possible sources of funding for the Project:

- Federal sources
  - Capital Investment Grants Program (FTA)
  - Transportation Infrastructure Finance and Innovation Act (United States Department of Transportation [USDOT])
  - Better Utilizing Investments to Leverage Development Program (USDOT)
  - Congestion Management and Air Quality Program (Federal Highway Administration [FHWA])
  - Other future USDOT, FTA and FRA funding, Urban Area Formula Grant
- State sources
  - Proposition 1A HSR Bond
  - Transit and Intercity Rail Capital Program
  - State Transportation Improvement Program
  - Trade Corridor Enhancement Program
  - Regional Improvement Program
  - Traffic Congestion Relief Program
  - California Cap-and-Trade Program
  - Regional Surface Transportation Program

[9] The Draft EIS/SEIR identified a cost estimate of $950.4M, generated in 2019, to implement the infrastructure improvements in the interim condition for the Build Alternative. This estimate did not include the costs to implement the Malabar Yard Railroad Improvements. In the Final EIS, the cost estimate was refined (a) to include the capital expenditures associated with Malabar Yard Railroad Improvements for the Build Alternative and (b) update it for 2023 dollars.

- Local sources
  - Measure R Sales Tax
  - Local Agency Funds
  - Proposition A Sales Tax
  - Proposition C Sales Tax
  - Measure M Sales Tax

2.12 Anticipated Agency Involvement

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

- FRA – Project funding and approval of Air Quality General Conformity, noticing in the FR, approval of any design waivers, government-to-government tribal consultation, and other responsibilities not assigned to CHSRA pursuant to the MOU with the State of California, including General Conformity Determinations
- SCRRA – Approval of operating plans and review of EIS as a Cooperating Agency
- Caltrans – Approval of encroachment permit for US-101 crossing and review of EIS as a Cooperating Agency
- FTA – Approval of Project funding (if applicable)
- U.S. Environmental Protection Agency (U.S. EPA) – Review of the EIS as a Participating Agency and noticing in the FR
- City of Los Angeles – Approval of roadway encroachment permits and, if required, updates to the Alameda District Specific Plan (ADSP) or General Plan/Community Plan land use and circulation maps, construction noise variances and review of EIS as a Participating Agency
- SHPO – Review of Section 106 documentation prepared pursuant to the requirements of the National Historic Preservation Act (NHPA)
- County of Los Angeles – Approval of encroachment permits on County property
- LOSSAN Rail Corridor Agency – Approval of operating plans
- Amtrak – Approval of operating plans
- Cal/EPA, Department of Toxic Substances Control (DTSC) – Approval of soil management plan in areas containing deed restrictions
- California Division of Occupational Safety and Health – Approval of architectural plans
- Native American Heritage Commission (NAHC) – Coordination with interested tribes and review of Section 106 documentation

- CPUC – Approvals for new and/or enhancements to existing at-grade crossings
- Regional Water Quality Control Board (RWQCB), Region 4 – Approval of National Pollutant Discharge Elimination System (NPDES) Permit(s)
- SCAG – Coordination of Project updates into the RTP/SCS

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3.0 Affected Environment and Environmental Consequences

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, environmental topics considered to determine the magnitude of potential impacts based on the project's context and intensity mitigation measures that would avoid or minimize potential adverse effects, and the significance of each impact area after implementation of mitigation.

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3.1 Introduction to the NEPA Analysis

This section provides a description of the Project location and study area, how the planned HSR system is accommodated for and analyzed within the EIS, environmental topics included in the analysis, the approach for conducting the environmental analysis, environmental topics requiring no further evaluation, and the format and content used for the environmental analysis in each topical section.

NEPA requires federal agencies to consider the context and intensity of potential environmental effects (both adverse and beneficial) in the evaluation of any proposed federal agency action. NEPA also obligates federal agencies to consider the environmental consequences and costs of their projects and programs as part of the planning process. CHSRA and Metro prepared this EIS in compliance with NEPA (42 USC Section 4321 et seq.), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508),[1] FRA Procedures for Considering Environmental Impacts (FRA's Environmental Procedures) (FR 64(101), 28545-28556, May 26, 1999),[2] 23 USC Section 139, and pursuant to 23 USC Section 327 and a NEPA Assignment MOU dated July 23, 2019 and executed by the FRA and the State of California.

3.1.1 Project Location and Study Area

As discussed in Chapter 2 of this EIS (Section 2.2), the Build Alternative consists of infrastructure improvements in Downtown Los Angeles in the vicinity of LAUS. 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. The northern Project limit is at North Main Street (MP 1.18) and the southern Project limit is in the vicinity of CP Olympic, south of Interstate 10 and Olympic Boulevard (MP 142.70).

Figure 3.1-1 depicts the Project study area, which is generally used to characterize the affected environment at and within the vicinity of LAUS, unless otherwise specified, and provide a geographic context for the existing and proposed infrastructure improvements. The Project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment).

[1] The CEQ has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

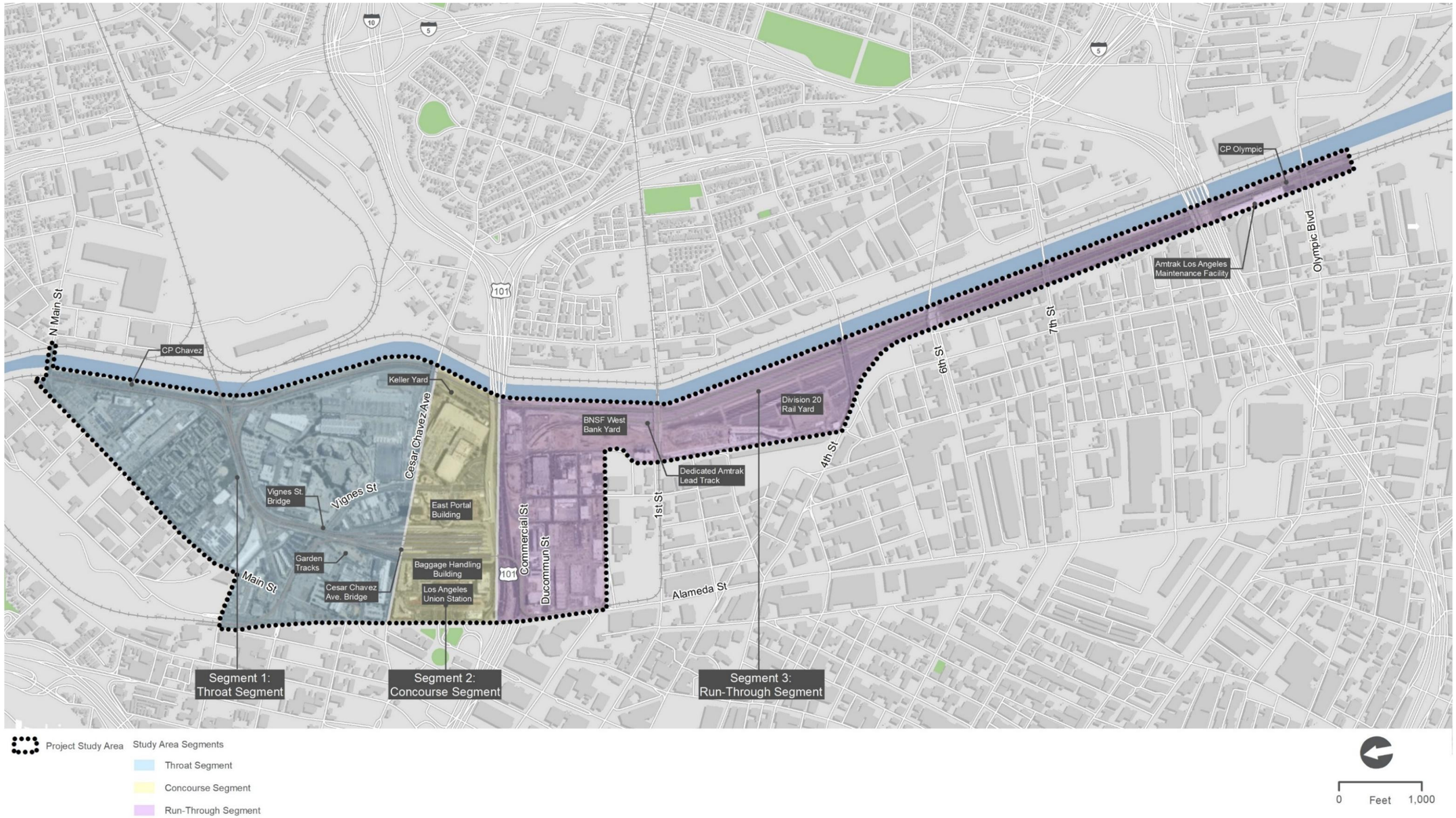
[2] While this EIS was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

The existing conditions within each segment are summarized north to south, below.

- **Segment 1: Throat Segment.** This segment, known as the LAUS throat, extends from North Main Street at the north to Cesar Chavez Avenue at the south and includes CP Chavez and the area north of the platforms at the LAUS rail yard. In the throat segment, all arriving and departing trains are required to traverse through a complex network of lead tracks, switches, and crossovers. Five lead tracks provide access 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. The Garden Tracks (stub-end tracks where private train cars are currently stored) are also located just north of the platforms. Land uses in the vicinity of the throat segment are residential, industrial, and institutional.
- **Segment 2: Concourse Segment.** This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the East Portal Building, the baggage handling building with associated parking areas and access roads, the ticketing/waiting halls, and the 28-foot-wide pedestrian passageway with connecting ramps and stairways below the rail yard. Land uses in the vicinity of the concourse segment are residential, commercial, and public.
- **Segment 3: Run-Through Segment.** This segment is south of LAUS and extends east to west from Alameda Street to the west bank of the Los Angeles River and north to south from Keller Yard to 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 in the vicinity of 8th Street. Land uses in the vicinity of the run-through segment are primarily industrial and manufacturing.

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 3.1-1. Project Study Area



Notes: The Project Study Area is non-contiguous and comprises a portion in the City of Los Angeles and a portion in the City of Vernon. The City of Vernon portion is depicted in Figure 1-4 in the Link US Environmental Evaluation of Malabar Yard Mitigation (Appendix Q of this EIS).

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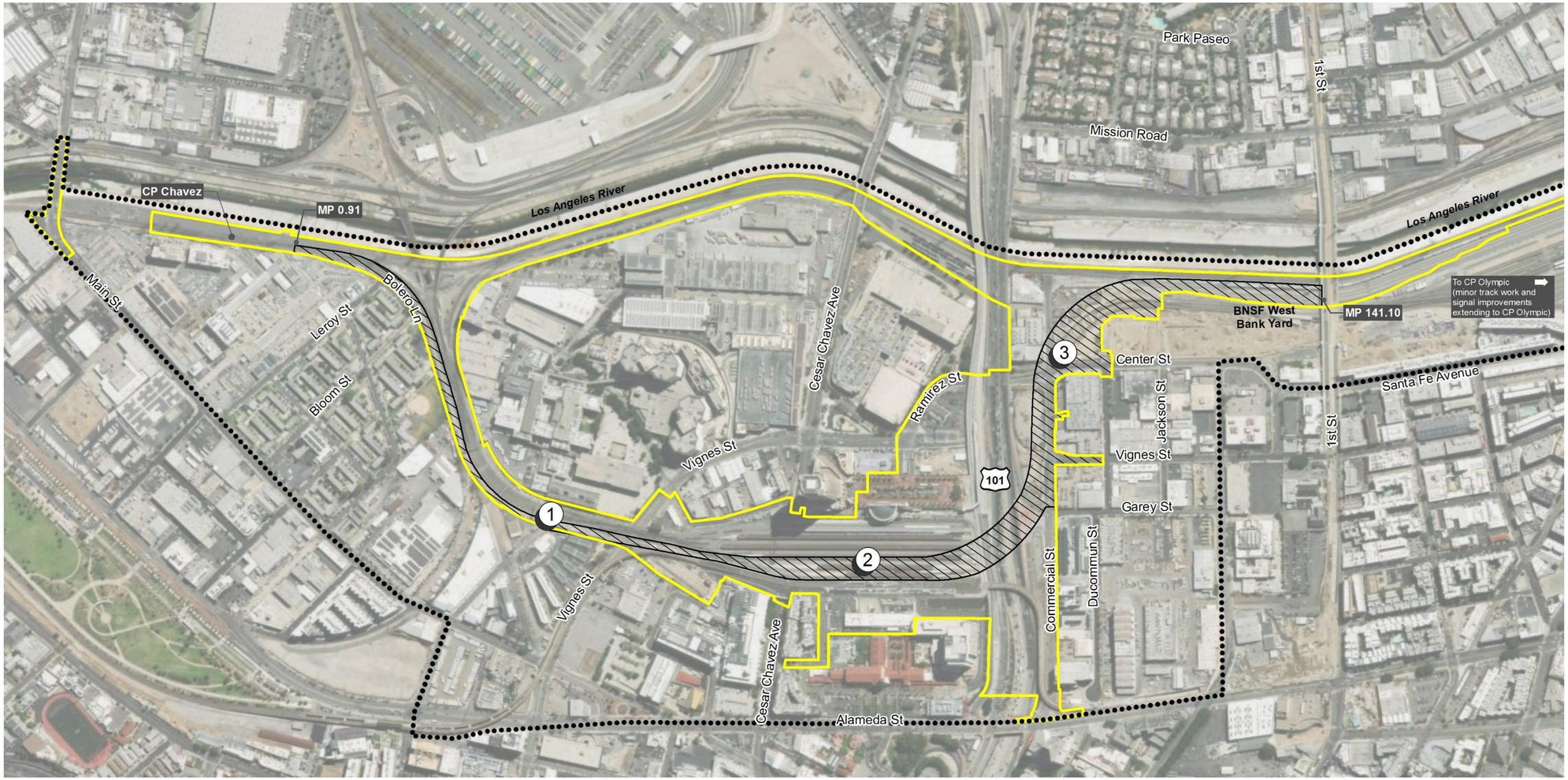
3.1.2 High-Speed Rail Design Accommodation Overlay

Figure 3.1-2 depicts the Link US Project footprint with an overlay where HSR-related infrastructure would be located. The northern and southern limits of the design accommodation for the planned HSR system within the Link US Project footprint (MP 0.91 and MP 141.10, respectively) is depicted in Figure 3.1-2.

CHSRA is responsible for the planning, design, construction, and operation of the planned HSR system, as well as preparing all environmental clearance documentation required for the entirety of the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections. The Link US Project footprint is large enough to include common rail infrastructure and additional infrastructure elements that CHSRA requires to operate its HSR system. Physical construction of common rail infrastructure that would allow CHSRA to construct the remaining infrastructure elements for the HSR system and to operate HSR trains within the Link US Project footprint is part of the Build Alternative and evaluated within this EIS. The Link US Project footprint also accommodates the space required for installation of OCS poles and other HSR related utility improvements. When this EIS states the planned HSR system is “accommodated”, it means Metro would construct the common rail infrastructure described in this EIS consistent with specifications and requirements that CHSRA designates as appropriate for CHSRA to operate its HSR system within the limits of the Link US Project footprint. Cumulative effects in conjunction with the planned HSR system are considered and evaluated in Chapter 3.16 of this EIS. All other HSR-related infrastructure north and south of the MP limits described above, and operation of the planned HSR system is or will be considered in CHSRA’s environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

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Figure 3.1-2. High-Speed Rail Accommodation Overlay



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3.1.3 Environmental Topics Included in the Analysis

Chapter 3.0, Affected Environment and Environmental Consequences, of this EIS provides an analysis of the potential direct and indirect effects of the Build Alternative, including the proposed rail yard canopy design options, and the No Action Alternative as described in Chapter 2 of this EIS.

The following environmental topics are addressed in Sections 3.2 through 3.15:

- Section 3.2, Land Use and Planning
- Section 3.3, Transportation
- Section 3.4, Visual Quality and Aesthetics
- Section 3.5, Air Quality and Global Climate Change
- Section 3.6, Noise and Vibration
- Section 3.7, Biological and Wetland Resources
- Section 3.8, Floodplains, Hydrology, and Water Quality
- Section 3.9, Geology, Soils, and Seismicity
- Section 3.10, Hazardous Waste and Materials
- Section 3.11, Public Utilities and Energy
- Section 3.12, Cultural Resources and Paleontological Resources
- Section 3.13, Economic and Fiscal Impacts
- Section 3.14, Safety and Security
- Section 3.15, Socioeconomics and Communities Affected

Section 3.16, Cumulative Effects, provides the analysis of cumulative effects based on the Project-level environmental evaluation in Sections 3.2 through 3.15.

3.1.4 Environmental Evaluation Approach

To address the greatest potential for effects that may result from the Build Alternative and to align the environmental evaluation with implementation timeframes for construction of improvements based on funding, three approaches were considered in the environmental evaluation.

- A "phased" project implementation approach that aligns with the description of construction activities for major components presented in Chapter 2 of this EIS (Section 2.5) follows:
  - Interim Condition: Complete construction of run-through track infrastructure south of LAUS as early as 2026 (separate and prior to construction of concourse, elevated rail yard, and lead tracks).
  - Full Build-Out Condition: Complete construction of concourse and elevated rail yard with new lead tracks as early as 2031 (separate from and after construction of run-through tracks). CHSRA electrifies planned HSR system within the limits of the Project as early as 2033.
- A "concurrent" construction approach assumes all major components of the Build Alternative (elevated throat and rail yard, concourse-related improvements, and new run-through tracks) would be constructed together. This approach is the more conservative of the two, and was used for traffic, air quality, and noise impact evaluations because this scenario would generate the greatest amount of construction traffic, air pollutant emissions, and noise for the Build Alternative.
- "Future conditions" are considered in the analysis of the No Action Alternative (discussed in Sections 3.2 through 3.15) and the Cumulative Condition (described in Section 3.16). For the purposes of this EIS, a horizon year of 2040 is considered.

3.1.5 Environmental Topics Requiring No Further Evaluation

Using FRA's Environmental Procedures, the following environmental topics are not further evaluated for the reasons below:

3.4, Visual Quality and Aesthetics

- ***Scenic Vistas or Highways.*** Caltrans maintains a list of highways that are eligible or have been designated as scenic highways. The Caltrans' State Scenic Highway Map was reviewed to determine if US-101 or other local roadways are eligible or a designated scenic highway. Local planning documents were also reviewed to determine the presence of any scenic vistas in the Project study area. Based on the analysis results of the *Link US Visual Impact Assessment* (Appendix F of this EIS), there are no designated scenic vistas or state scenic highways in the Project study area. Therefore, the Build Alternative would not damage scenic vistas or state scenic highways, and no effect would occur.

3.7, Biological and Wetland Resources

- ***Federally Listed or Candidate Plant or Animal Species.*** Based on the analysis results of the *Link US Natural Environment Study – Minimal Impacts* (Appendix I of this EIS), the Biological Study Area (BSA, synonymous with Project footprint where physical disturbance would occur) does not include suitable habitat or designated critical habitat for plant or animal species that are federally listed or candidates for listing by the United States Fish and Wildlife Service (USFWS). Therefore, there is no potential for direct or indirect effects on federally listed or candidate plant or animal species and, hence, no need for Section 7 consultation under the ESA. No effect would occur.
- ***Riparian Habitat or Other Sensitive Natural Communities.*** Based on the analysis results of the *Link US Natural Environment Study – Minimal Impacts* (Appendix I of this EIS), the BSA does not contain riparian habitat or other sensitive natural communities identified by USFWS. Therefore, there is no potential for direct or indirect effects on riparian habitat or other sensitive natural communities. No effect would occur.
- ***Waters of the U.S., including Wetlands.*** Based on the analysis results of the *Link US Natural Environment Study – Minimal Impacts* (Appendix I of this EIS), the BSA does not contain waters of the U.S., including wetlands, as defined by Section 404 of the Clean Water Act (CWA). The Los Angeles River, which is subject to USACE jurisdiction, is located below the North Main Street Bridge. Improvements on the North Main Street Bridge would be contained to the bridge over the water. In addition, the eastern portion of the Project area runs parallel to the Los Angeles River, however, construction would be contained to the Metro ROW. Safety improvements would occur at the surface level of the North Main Street Bridge (within Project footprint) and would not add fill to the Los Angeles River. Therefore, there is no potential for direct effects on waters of the U.S, including wetlands. No effect would occur.

  Analysis of indirect water quality and stormwater effects and applicable mitigation measures (Mitigation Measures HWQ-1 and HAZ-1) that would minimize effects to the Los Angeles River are contained in Section 3.8 Floodplains, Hydrology, and Water Quality and Section 3.10 Hazardous Waste and Materials of this EIS.
- ***Invasive Plant Species.*** Based on the analysis results of the *Link US Natural Environment Study – Minimal Impacts* (Appendix I of this EIS), most of the plant species observed within the BSA are nonnative, and several species are considered invasive (high or moderate invasive rankings) by the California Invasive Plant Council. Due to the large amount of developed land and disturbed habitat already present in the BSA, an increase or spread of nonnative invasive plant species is not expected. Per EO 13751, no invasive species will be used for Project landscaping. No effect would occur.

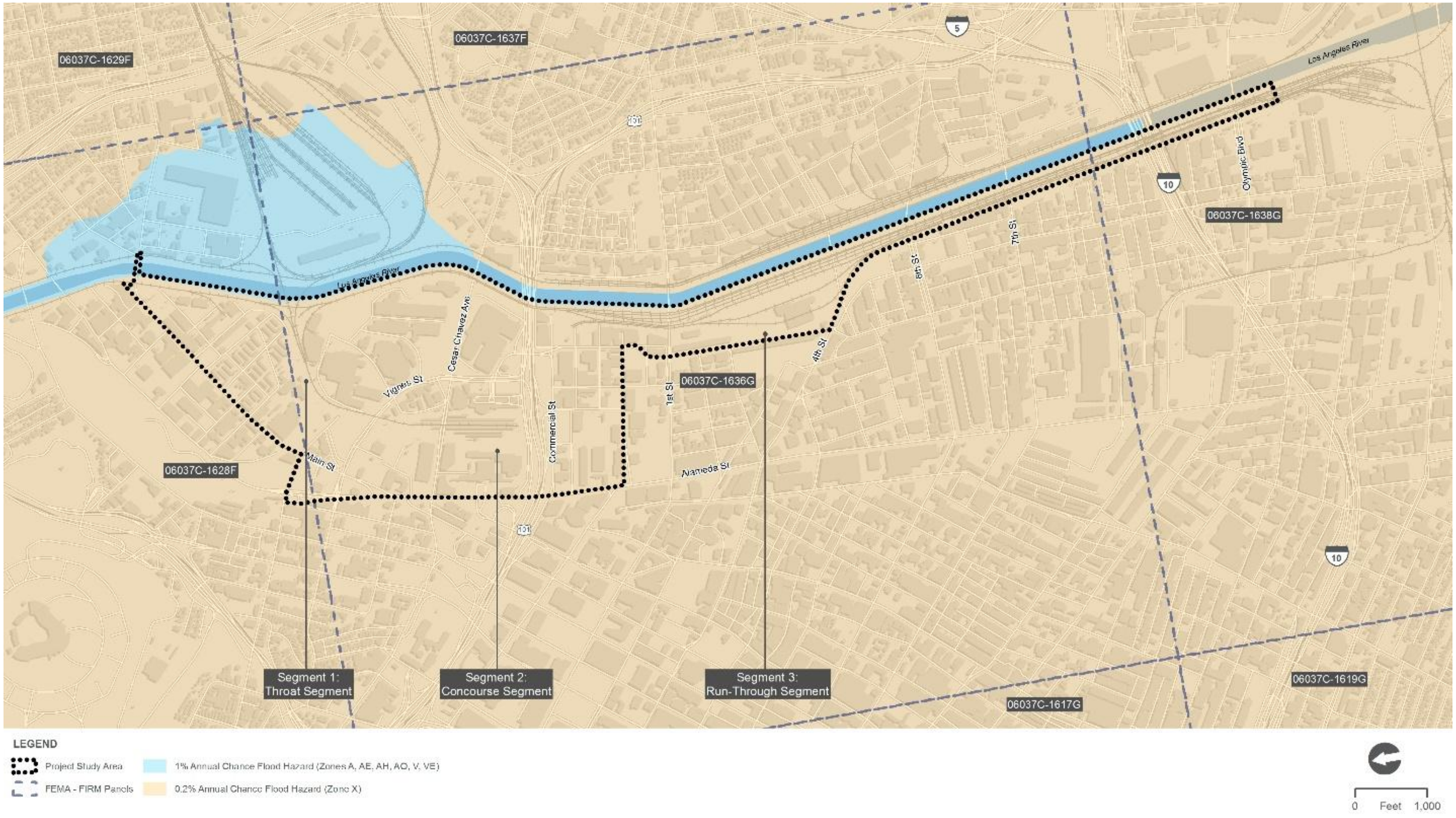
3.8, Floodplains, Hydrology, and Water Quality

- ***Construction of Structures within the 100-year Flood Hazard Area.*** Based on the analysis results of the *Link US Water Quality Assessment Report* (Appendix J of this EIS), the Project study area is not within a 100-year flood hazard area. As shown in Figure 3.1-3, the 100-year flood boundary does not extend over the west bank of the Los Angeles River into the Project study area. The entirety of the Project study area is located in Zone X. Zone X represents an area that is determined to be outside the 0.2 percent annual chance flood (i.e., 500-year flood); therefore, implementation of the Build Alternative would not involve the construction of structures within the 100-year flood hazard area that would otherwise impede or redirect floods. No effect would occur.
- ***Coastal Zone Management.*** The Project study area is approximately 15 miles east of the Pacific coast and is, therefore, not in the coastal zone (Figure 3.1-4). A discussion of the effects on coastal resources or potential conflicts with the Coastal Zone Management Act (16 USC 1451 et seq.) is not applicable. No effect would occur.

3.9, Geology, Soils, and Seismicity

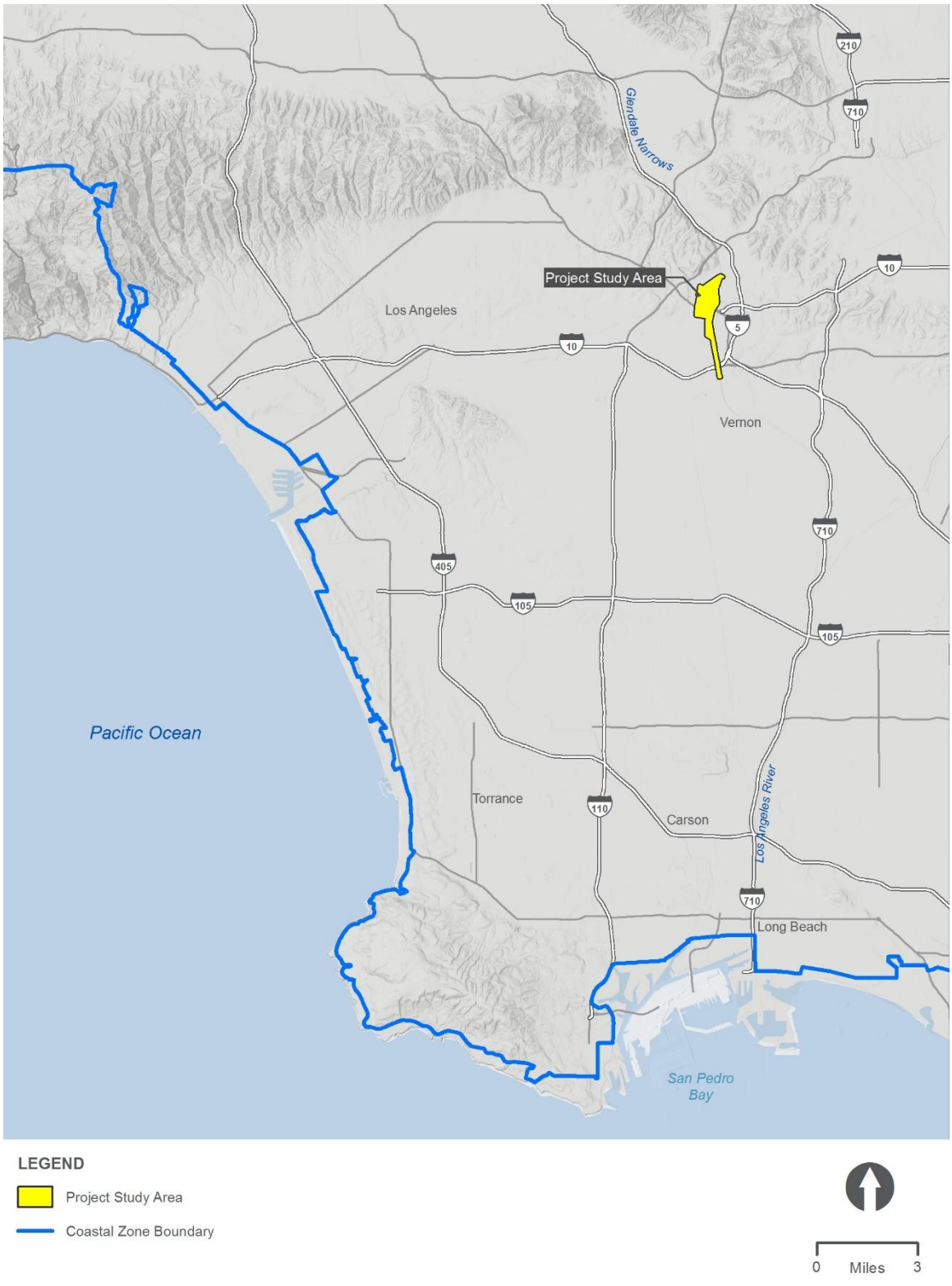
- ***Surface Fault Rupture.*** Based on the analysis results of the *Link US Preliminary Geotechnical Report* (Appendix K of this EIS), the Project study area does not traverse an active fault or a designated Alquist-Priolo Earthquake Fault Zone; therefore, surface fault rupture within the Project study area is unlikely. No effect would occur.
- ***Landslides.*** Based on the analysis results of the *Link US Preliminary Geotechnical Report* (Appendix K of this EIS), the Project study area is nearly flat and is not adjacent to any hills or steep slopes. Therefore, landslides within the Project study area are unlikely. No effect would occur.

Figure 3.1-3. Flood Insurance Rate Map for the Project Study Area



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Figure 3.1-4. Coastal Zone Boundary



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3.15, Socioeconomics and Communities Affected

- ***Local Government Services (Schools and Libraries)***
    - Schools. Based on the analysis results of the *Link US Community Impact Assessment* (Appendix D of this EIS), the Build Alternative does not include residential development that would directly generate population growth. 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 direct effect would occur.

      The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Over time, additional demand on school facilities may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed community facilities. No indirect effect would occur.
    - Libraries. Based on the analysis results of the *Link US Community Impact Assessment* (Appendix D of this EIS), the Build Alternative does not include residential development that would directly generate population growth or increase demand for libraries. Operation of the Build Alternative is not expected to substantially affect access to libraries or disrupt the basic functions of the facilities in the Project study area. No direct effect would occur.

      The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Over time, additional demand on libraries may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed community facilities. No indirect effect would occur.
- ***Recreational Opportunities***
    - Based on the analysis results of the *Link US Community Impact Assessment* (Appendix D of this EIS), there are no parks or recreational facilities open to the public in the Project study area.[3] Parks and recreational facilities located outside of the Project study area, including the Los Angeles River, are not readily accessible from

[3] The recreational facilities located at William Mead Homes and Care First Village are closed to the general public and only accessible to residents.

LAUS. The Build Alternative does not include residential development that would directly generate population growth or increase demand for parks and recreational facilities. Therefore, no direct physical impacts or alterations to existing parks and recreation areas would result from the Build Alternative and no effect would occur.

- **Residential Displacements**
  - Based on the analysis results of the *Link US Community Impact Assessment* (Appendix D of this EIS), no temporary or permanent residential displacements would occur as a result of the Build Alternative. Therefore, construction of replacement housing would not be required. No effect would occur.

5.0, Section 4(f) and Section 6(f)

- ***Section 6(f) Properties***
  - Based on the analysis results presented in Chapter 5 of this EIS, Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 applies to certain recreational properties and prohibits the conversion of property acquired or developed with LWCF grants to a non-recreation or parkland purpose without the approval of the DOI National Park Service.

    The California Department of Parks and Recreation maintains a list of recommended projects to receive LWCF funding by county and city. The list also includes past projects completed using LWCF funds. The latest list released (LWCF 2023) was reviewed and no Section 6(f) properties were identified within 1,000 feet of the Project study area. No future LWCF planned and programmed projects have been identified; therefore, further evaluation of Section 6(f) properties is not applicable. No effect would occur.

3.1.6 Format and Content Used in the Analysis

For each environmental topic section considered in Chapter 3.0, the basic format for the environmental analysis follows a standard outline. Sections 3.2 through 3.15 each provide an introduction to describe the environmental topic area considered and any technical studies that support the evaluation (Introduction); presents the applicable laws, regulations, and plans relevant to each environmental topic area (Regulatory Framework); describes the methods and assumptions used for evaluating the potential environmental effects based on duration, context and intensity of the impact (Methods for Evaluating Environmental Effects); presents existing conditions of the environmental setting (Affected Environment); presents the environmental effects that would result from the No Action Alternative and implementation of the Build Alternative (Environmental Consequences); describes mitigation measures that would avoid or minimize adverse effects (Mitigation Measures); and provides a summary of potential impacts for each environmental resource topic (NEPA Impact Summary). The content for each of these sections is described below under the following headings.

Introduction

This section provides a brief summary of the environmental topic area to be analyzed, and a summary of data sources and technical studies used to prepare the environmental evaluation.

Regulatory Framework

This section contains the regulatory framework relevant to project approvals or decisions for each environmental topic area being analyzed, including any applicable provisions of the FRA's Environmental Procedures, federal, state, and local laws and regulations, NEPA provisions, and other regulatory agency guidance.

Methods for Evaluating Environmental Effects

This section describes the methods, processes, procedures, and/or assumptions used to characterize the existing physical setting and baseline conditions associated with the affected environment and evaluates the potential for adverse effects. This section may also include definitions of key resource-specific terms.

For each environmental topic area, a subsection is provided describing the geographic area considered and how it may be broadened or narrowed to properly characterize the affected environment and analyze direct or indirect effects of that specific resource. For example, the BSA for Section 3.7, Biological and Wetland Resources and the Project footprint for Section 3.11, Public Utilities and Energy are the geographic areas considered for these environmental topics and are used to determine potential effects.

For each environmental topic area, a subsection, 'determination of effects,' discusses how an adverse effect is triggered based on the affected environment and geographic area considered to determine potential for impacts, and in consideration of both context and intensity as outlined in 40 CFR 1508.27.

Affected Environment

This discussion provides a description of the existing social, economic, or environmental conditions of each environmental topic area (i.e., baseline conditions or setting). For the purpose of this document and pursuant to the CEQ NEPA regulations (40 CFR Parts 1500-1508), the affected environment is used to determine the effects associated with the Build Alternative and No Action Alternative. The affected environment is based on the environmental conditions that existed at the time the 2016 NOI was published in the FR; however, information has been updated as necessary since 2016 to account for certain conditions in the Project study area that might influence the regulatory context (new laws or regulations) or where potential adverse effects may occur (i.e., sensitive receptors).

Environmental Consequences

The environmental consequences discussion describes the potential environmental effects associated with the proposed infrastructure in the interim condition (as early as 2026) and full build-out condition (as early as 2031). Effects resulting from the No Action Alternative are also considered and identified. The subtopics evaluated for each environmental topic area are listed numerically and sequentially throughout each section. For example, subtopics in Section 3.2, Land Use and Planning, are identified as 3.2-A, 3.2-B, and so on.

Evaluation

The evaluation of potential effects is based on applicable provisions of FRA's Environmental Procedures, factual or scientific information, regulatory standards of federal agencies, and professional practice. Where appropriate, the evaluation is based on federal standards (e.g., the air quality evaluation is based on federal ambient air quality standards and the noise evaluation is based on Federal Transit Administration [FTA] criteria). This evaluation also encompasses the factors considered under NEPA to determine the context and the intensity of an action's effects. The *context* and *intensity* (including duration) of impacts associated with the Build Alternative are considered to fully illustrate the impacts and facilitate comparison between the No Action Alternative and the Build Alternative.

- *Context* refers to the environment in which the impact occurs and may include affected interests of resources, the specific locality, the region, or society as a whole, depending on the resource.
- *Intensity* refers to the severity of the impact; its analysis encompasses the type, quality, and sensitivity of the resource involved; the location and extent of the impact; the duration of the impact; whether the action threatens a violation of federal or state law or local requirements imposed for the protection of the environment; and other intensity considerations (40 CFR 1508.27).

The evaluation is subdivided, as appropriate, to differentiate between direct and indirect effects that could occur during construction or operations, or when the effects may differ for the interim and full build-out condition. Beneficial and adverse effects fall into the following categories:

- ***Direct Effects.*** These effects would be caused by direct physical impacts that would occur during construction or operations. The environmental analysis addresses potential effects from temporary (short-term) construction activities within the Project footprint including, but not limited to, demolition of existing structures and buildings, effects associated with site development and required infrastructure and roadway improvements, and construction-related effects associated with staging activities, fill activities, and construction traffic. An analysis of potential effects resulting from long-term operations is also provided for each environmental topic.
- ***Indirect Effects.*** These effects are anticipated to occur later in time or are farther removed in distance but are reasonably foreseeable as a result of Project construction and

operations. Examples of indirect effects include growth-inducing effects and other secondary effects related to changes in land use patterns, population density, or growth rate, and related effects on the physical environment. Indirect effects may also result from implementation of potential mitigation measures.

The environmental analysis places emphasis on distinguishing between the following effects:

- Short-term construction and long-term operational effects;
- Effects associated with different infrastructure improvements of the Build Alternative and design options considered; and,
- Segment-specific effects (e.g., environmental effects occurring in Segment 1: Throat Segment, but not in other segments).

Mitigation Measures

This discussion identifies mitigation measures proposed to minimize the magnitude and severity of, or compensate for, adverse effects in accordance with NEPA Guidelines (40 CFR Part 1502.16(h) and 40 CFR Part 1508.20).

NEPA Impact Summary

This section summarizes the environmental consequences specific to NEPA requirements for each environmental topic. Based on the discussion of the context, intensity, and duration of the potential impacts, this section provides a summary of impacts and applicable mitigation measures for the No Action Alternative and the Build Alternative and includes a table to outline the level of effect under each subtopic before and after implementation of mitigation measures, if applicable.

3.1.7 Consistency with Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

The *Link US Community Impact Assessment* (Appendix D of this EIS) includes a consistency evaluation for all environmental topic areas to demonstrate how the Build Alternative is or is not consistent with applicable federal, regional, state, and local land use plans, policies, and controls for the area concerned, which is required under 40 CFR 1502.16(c).

3.1.8 Incorporation by Reference

This EIS incorporates by reference the previously certified Final EIR for the Link Union Station Project (State Clearinghouse No. 2016051071), CEQA Addendum No. 1 to the Final EIR for the Link Union Station Project, and the Final SEIR prepared by Metro. The previously certified Final EIR analyzes the potential environmental impacts of the construction and operation of the Link Union Station Project. The complete Final EIR, technical appendices, and CEQA Addendum No. 1 to the Final EIR for the Link Union Station Project may be downloaded from: https://www.dropbox.com/scl/fo/q51hz0past461qn8pk0eb/ABJAsL7gEl2u_VNcXf1hMtU/Reports/CEQA/Final%20EIR?dl=0&rlkey=hqfq2hbh6t5ki1vh74bwqlazr&subfolder_nav_tracking=1. The Final SEIR may be downloaded from: https://linkunionstation.com/.

3.2 Land Use and Planning

3.2.1 Introduction

This section provides an evaluation of potential effects related to land use and planning that may result from the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Community Impact Assessment* (Appendix D of this EIS) and the *Link US Relocation Impact Report* (Appendix P of this EIS).

3.2.2 Regulatory Framework

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

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

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts*, *Sec. 14(n)(15),* 64 *Federal Register* 28545-28556 (1999)[1]	The *FRA's Procedures for Considering Environmental Impacts* require an assessment of impacts on local land use controls and comprehensive regional planning as well as development within the affected environment, including, where applicable, other proposed federal actions in the area. Where inconsistencies or conflicts exist, the evaluation should include a description of reconciliation and/or the reason for proceeding notwithstanding the absence of full reconciliation. If conflicts would result from the project, early notification to the applicable agency would be required, as would the incorporation of such conflicts into the environmental document.
Council for Environmental Quality 40 Code of Federal Regulations 1502.16I[2]	The CEQ NEPA implementing regulations require a discussion of possible conflicts between the proposed action and the objectives of federal, regional, state, and local land use plans, policies, and controls for the area concerned.
Partnership for Sustainable Communities Livability Principles	The livability principles, developed by the U.S. EPA, U.S. Department of Housing and Urban Development, and USDOT, aim to help improve access to affordable housing, create more transportation options, and lower transportation costs, while protecting the environment in communities nationwide.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

[2] The CEQ has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

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, Senate Bill 375)	SB 375 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 30631(a).
Regional	
Southern California Association of Government 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020)	The RTP/SCS is a long-range RTP 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 GHG emission reduction goals. Amendment #2 to the 2020 RTP/SCS: Connect So Cal included the 2023 FTIP, and the Project is listed as #LA0G1051.
Metro Bicycle Transportation Strategic Plan (2006)	Metro's 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 Connect US Action Plan (2015)	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 Green Construction Policy (2014)	The Green Construction Policy outlines Metro's commitment 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.

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

Law, Regulation, or Plan	Description
Metro First Last Mile Strategic Plan & Planning Guidelines (2014)	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 (2016)	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 countywide 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.
Global Green USA 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. 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 (2016)	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 Assessment Guidelines (LADOT 2016), mitigation programs for impacts that are expected to be significant 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.
City of Los Angeles Mobility Plan 2035 (2016)	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 Complete Streets Design Guide (2016)	The Complete Streets Design Guide accompanies the Mobility Plan 2035 and outlines lays out a vision for designing safe, accessible, and vibrant streets in Los Angeles. As outlined in California's Complete Streets Act of 2008, the goal of Complete Streets is to ensure that the safety, accessibility, and convenience of all transportation users—pedestrians, bicyclists, transit riders, and motorists—is accommodated. The Complete Streets Design Guide provides a

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

Law, Regulation, or Plan	Description
	compilation of design concepts and best practices that promote the major tenets of Complete Streets—safety and accessibility. The guide is meant to supplement existing engineering practices and requirements to meet the goals of Complete Streets.
City of Los Angeles Bicycle Plan (2010)	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.
City of Los Angeles Los Angeles River Revitalization Master Plan (2007)	The 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.
City of Los Angeles Los Angeles River Design Guidebook (2017)	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 Sustainable City pLAn (2019)	The Sustainable City pLAn (plan) is the City of Los Angeles' expanded sustainability framework. The Plan includes sustainability targets pertaining to renewable energy, water sourcing, green building, reduced VMT, the construction of new housing, the production of zero emission vehicles, green jobs, and the reduction in municipal GHG emissions. The 2019 Plan is the four-year update to the first sustainable city plan, implemented in 2015.
City of Los Angeles General Plan Framework Element (2001)	The City of Los Angeles General Plan Framework 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 Downtown Community Plan (2023)	The DCP was adopted by the City Council on May 3, 2023. The majority of the Project study area overlaps with the plan area for the DCP. The DCP describes a collective vision for Downtown's future and includes policies, plans, and implementation programs that frame the city's long-term priorities of the downtown area, including specific policies related to Union Station and the future integration of the Link US Project and integration of the planned HSR system. The DCP replaced the Central City North Community Plan and the Central City Community Plan. The DCP area extends from US-101 on the west to the Los

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

Law, Regulation, or Plan	Description
	Angeles River on the east and from Broadway and Stadium Way on the north to the City of Vernon boundary on the south.
City of Los Angeles Alameda District Specific Plan (1996)	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. The ADSP encourages a pedestrian-oriented and mixed-use business district with an intermodal transportation center, while also encouraging hotels, retail, entertainment, housing, cultural, and transit-related functions with a medium and high-density development pattern.
City of Los Angeles Cornfield/Arroyo Seco Specific Plan (2014)	The northern portion of the Project study area overlaps with the plan area for the CASSP. The plan area is adjacent to the Chinatown and Lincoln Heights communities. The City of Los Angeles is updating the CASSP to support the production of more affordable, mixed-income, and permanent supportive housing. The updated CASSP will support the City's efforts to accelerate housing production during the housing crisis, while recognizing the diverse needs of the long-standing communities and industries that share this space.
City of Los Angeles River Improvement Overlay District (Ordinance 183145) (2014)	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 establishing RIO Districts is, in part, 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; 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.
County of Los Angeles Vision Zero Los Angeles County: A Plan for Safer Roadways 2020–2025 (2019)	Vision Zero is an initiative to eliminate traffic-related fatalities by 2025. The High Injury Network identifies where strategic investments will have the biggest impact in reducing deaths and severe injuries. Alameda Street and portions of Cesar Chavez Avenue and Vignes Street, north of LAUS, are part of the High Injury Network.
William Mead Homes Transformation Plan (2023)	The William Mead Homes Transformation Plan will outline a strategy for one-for-one replacement of the existing public housing units at William Mead Homes along with greater access to services and programs by William Mead residents and complementary investments in public services and amenities in the surrounding neighborhood. The Transformation Plan will outline goals and strategies to carry out the community's vision for William Mead Homes with a fundamental goal to

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning	
Law, Regulation, or Plan	**Description**
	continue to provide affordable housing with redevelopment of the residential community.

Notes:
AB=Assembly Bill; ADSP=Alameda District Specific Plan; CASSP=Cornfield/Arroyo Seco Specific Plan; DCP=Downtown Community Plan; FR=Federal Register; FRA=Federal Railroad Administration; 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 Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would:

- Alter land use patterns;
- Cause incompatibility with existing or planned land uses;
- Physically divide an established community; and/or
- Conflict with land use plan policies or local land use controls.

Geographic Area Considered

The Project study area characterizes the affected environment, and the Project footprint is the geographic area that determines potential effects related to land use and planning.

Methodology

The City of Los Angeles 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, planned land use designations, and zoning classifications. The location, type, and extent of proposed infrastructure improvements within the limits of the Project footprint were then compared to the existing and planned land uses to determine if any land uses would be converted to a transportation-related use, if land use designations would be changed, if potential incompatibilities with adjacent land uses would occur, or if conflicts with land use plan policies or controls would occur.

In accordance with 40 CFR 1502.16(c), a consistency evaluation was conducted in the context of whether the Build Alternative aligns with the intent of applicable regional/intercity rail and HSR

statewide and regional transportation planning documents and the objectives of federal, regional, state, and local land use plans, policies, and controls. 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 if any conflicts with local land use plans, policies, or controls would occur. The full consistency evaluation is included in the *Link US Community Impact Assessment* (Appendix D of this EIS).

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is described below.

Alteration of Land Use Patterns

Project-related effects would be considered adverse if land use conversions would render properties unusable or result in land uses that do not align with regional plans.

Compatibility with Existing or Planned Land Uses

Project-related effects would be considered adverse if staging areas, establishment of construction easements, or long-term operation of the Build Alternative would result in compatibility issues on adjacent land uses (e.g., temporary or permanent increases in noise levels, dust, emissions, or potential access disruptions).

Physical Division of an Established Community

Project-related effects would be considered adverse if the location of proposed infrastructure would physically divide an established community or impede access and mobility within an existing community.

Conflict with Land Use Plans, Policies, or Local Land Use Controls

Project-related effects would be considered adverse if, after implementation of applicable mitigation measures, conflicts with applicable land use plans and policies would remain.

3.2.4 Affected Environment

This section describes the existing land uses, communities and districts of downtown Los Angeles, applicable community plans and specific plans, and the General Plan land use and zoning designations to characterize the affected environment.

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), the Hilda L. Solis Care First Village transitional housing facility (Care First Village), 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 and Care First Village 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 Apartments are also 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, mainline tracks that extend along the west bank of the Los Angeles River, and the One Santa Fe Apartments.

Downtown Communities

LAUS 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 full description of these communities is provided in the *Link US Community Impact Assessment* (Appendix D of this EIS).

Community Plans and Specific Plans

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

- The DCP replaced the previous Central City North Community Plan in May 2023. The DCP prioritizes several core principles in relation to long-range planning within the Downtown Los Angeles area, including accommodating anticipated growth in the Downtown area through 2040; reinforcing Downtown's job orientation; growing and

supporting the existing residential base; strengthening the neighborhood character; and promoting a transit-friendly environment while creating linkages among districts.

- 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 within 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 the Housing Authority of the City of Los Angeles (HACLA), is located within this portion of the Project study area.

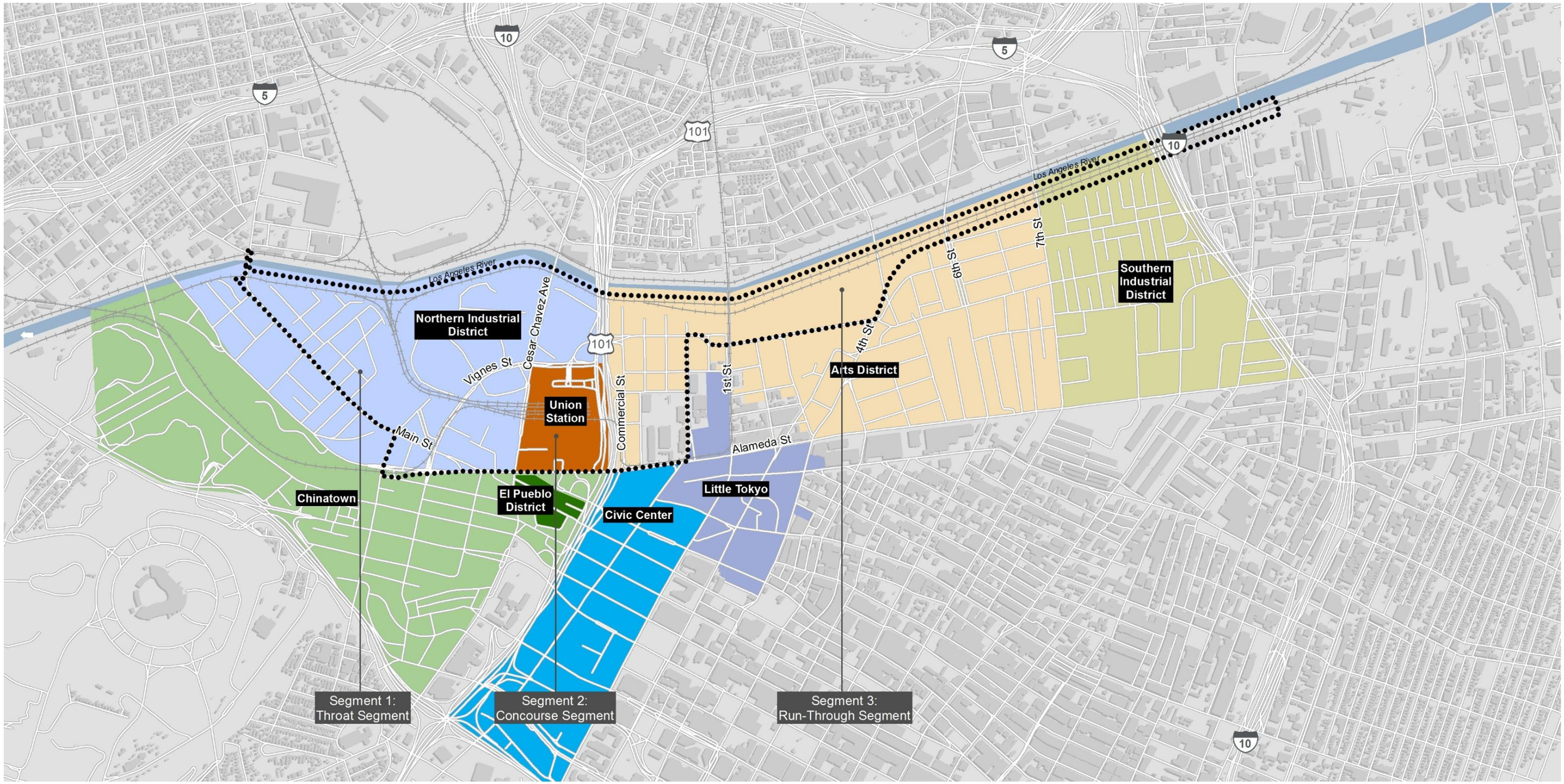
General Plan Land Use and Zoning Designations

Figure 3.2-3 depicts the current land use designations in the Project study area, per the city's General Plan Land Use Map. The General Plan land use designations within the Project study area include Hybrid Industrial, Public Facilities, Production, Open Space, Transit Core, and Community Center.

Figure 3.2-4 depicts the current zoning designations in the Project study area. In Segment 1 (outside of the boundaries of the ADSP and CASSP), properties are primarily zoned as Public District and Industrial 1 (LF2) with Commercial-Mixed 2 (DM2) zoned properties between Main Street and Alameda Street. In Segment 2, properties are primarily zoned as Public District and ADSP, with pockets of Industrial 1 (LF2), Industrial 1 (MM1), and Commercial-Mixed 3 (MB4) zoned properties. In Segment 3, properties are primarily zoned as Public District, Open Space 1 (VF1), Industrial 2 (LF2), and Industrial-Mixed 4 (MB2 and MB3) zoned properties.

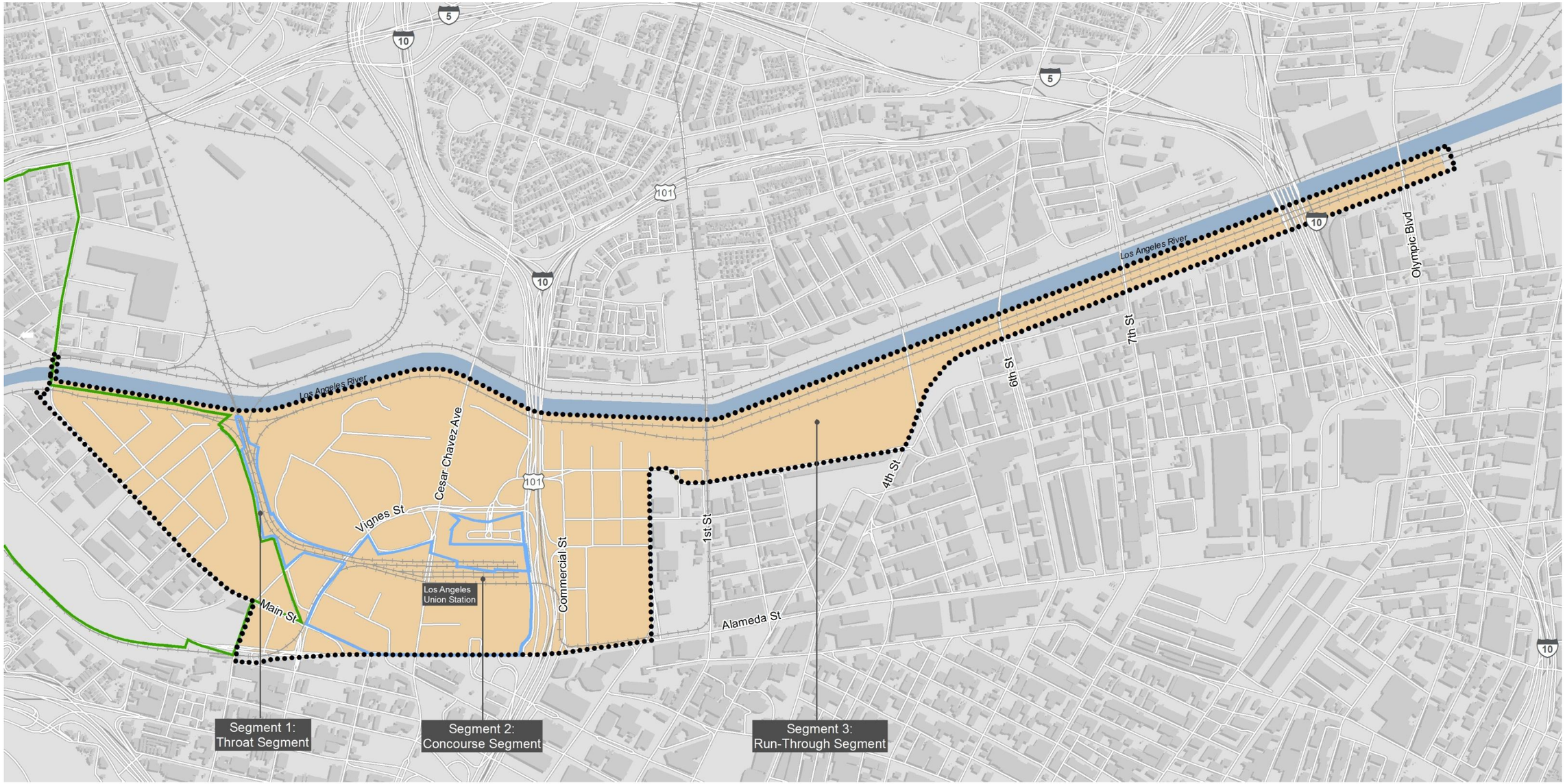
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Figure 3.2-1. Downtown Los Angeles Communities



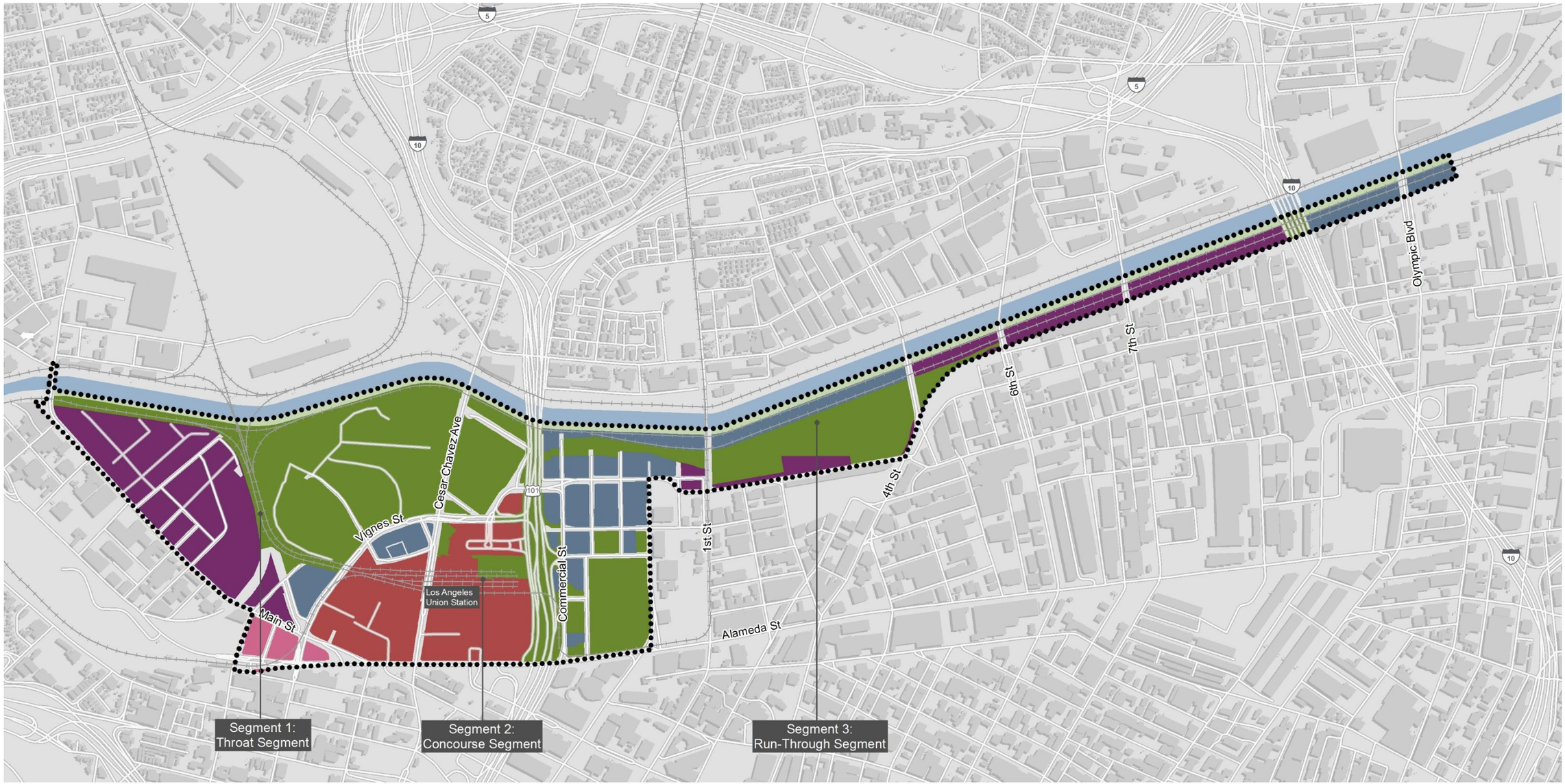
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Figure 3.2-2. Community Plans and Specific Plans within the Project Study Area



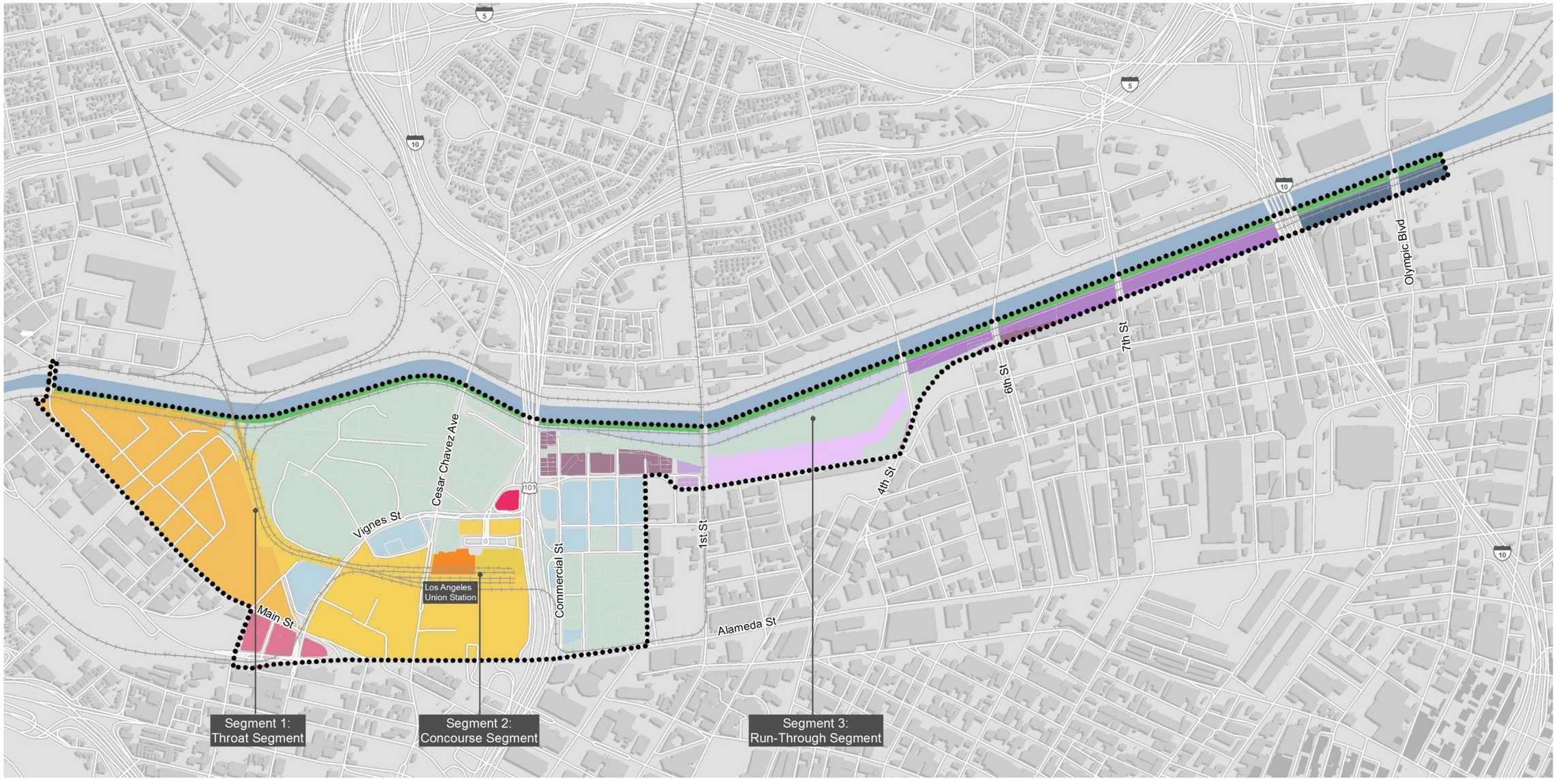
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Figure 3.2-3. General Plan Land Use Designations within the Project Study Area



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Figure 3.2-4. Zoning Designations within the Project Study Area



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3.2.5 Environmental Consequences

TOPIC 3.2-A	Alteration of land use patterns

No Action Alternative

Under the No Action Alternative, no temporary conversion of land uses for staging purposes or construction laydown areas would be required. The No Action Alternative does not facilitate construction of new run-through tracks on vacant properties or on properties where businesses are located south of LAUS; therefore, no permanent land use conversions would occur. Vacant properties would remain available for land use development and existing businesses would remain in operation at their existing locations.

Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Temporary staging areas and construction easements may be required to support construction activities associated with these projects. Land use development would continue to occur in the Project study area pursuant to local land use plans and zoning regulations and could result in other direct and indirect effects on land use including property acquisitions and/or changes in land use patterns. The impacts associated with such projects are unknown at this time and would be addressed during CEQA and NEPA environmental reviews and entitlement processes conducted in the future. All projects requiring discretionary action would be subject to environmental review, through which impacts associated with these projects would be addressed and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects. No direct or indirect adverse effect would occur.

Build Alternative

Direct Effects – Construction

As shown in the *Link US Community Impact Assessment* (Appendix D of this EIS) and in Table 2-6 of this EIS, temporary construction easements (TCE) may be required for construction access or staging and laydown areas. The areas affected by TCEs are adjacent to the railroad ROW, other Metro-owned property, or other transportation infrastructure and would be restored to their existing conditions or better after completion of construction; with exception of the properties south of LAUS that would be fully acquired by Metro to implement proposed run-through track infrastructure. None of the areas where TCEs are proposed would alter land use patterns in a manner that would render the properties unusable. No direct adverse effect would occur.

Direct Effects – Operations

Land Use Conversions

Infrastructure improvements associated with the Build Alternative would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and commercial and industrial land uses.

- In Segments 1 and 2 of the Project study area, no land uses adjacent to the railroad ROW would be permanently converted to a transportation use nor would existing or planned land use patterns be altered by proposed infrastructure improvements.
- As presented in Appendix B of the *Link US Community Impact Assessment* (Appendix D of this EIS), in Segment 3 of the Project study area the Build Alternative would result in conversion of several undeveloped properties and commercial and manufacturing/industrial properties to transportation-related uses in accordance with the long-term vision for run-through tracks as outlined in the 2020 RTP/SCS. Metro's acquisition of privately owned parcels south of US-101 to support implementation of run-through tracks may require the City of Los Angeles to change the General Plan land use designations and zoning classifications to reflect the proposed transportation use as well as modifications to the circulation network south of LAUS (closure of Commercial Street east of Center Street).

Although the Build Alternative may require the City of Los Angeles to implement General Plan Amendments and changes to existing zoning classifications, no direct adverse effect would occur because land uses would be developed in accordance with the long-term vision for run-through tracks as outlined in the 2020 RTP/SCS and these are administrative procedures to support implementation of transportation infrastructure that fulfills the guiding principles, goals, and policies of the DCP.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS.

Construction of the Build Alternative would not induce indirect adverse effects related to the alteration of land use patterns. Once constructed, the Build Alternative would enhance the opportunity for new infill development around the LAUS area. New transit-oriented infill development at or surrounding LAUS would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Intensification of future use of land

surrounding LAUS has already been planned for under the assumption that the Project would be completed. Any new development that may require land use conversions would be subject to local government regulations and the applicable environmental review and entitlement process. The intensity/severity of any potential effects would depend on external factors and market conditions. Therefore, no indirect adverse effect would occur.

TOPIC 3.2-B	Compatibility with existing or planned land uses

No Action Alternative

Under the No Action Alternative, no temporary or permanent incompatibilities with existing or planned land uses would occur. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Temporary land use compatibility effects from construction activities including access disruptions, lighting or glare, or temporary construction noise and air quality emissions would not occur on land uses adjacent to LAUS, the existing railroad ROW, or other areas surrounding LAUS. No long-term compatibility effects would occur during operation because new land use development surrounding LAUS would be designed for maximum compatibility with ongoing train operations at LAUS and would be implemented consistent with local land use plans and zoning regulations. Any future development would also be subject to applicable environmental review. The impacts of other projects would be addressed during the environmental review and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects. No direct or indirect adverse effect would occur.

Build Alternative

Direct Effects – Construction

Construction activities that would occur near residential communities and commercial properties could cause temporary land use incompatibilities related to transportation, aesthetics, noise and vibration, and air quality.

- For transportation, traffic detours, lane reductions, and street closures may cause access restrictions for travelers on affected roadways. In addition, 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 lane width reductions and night closures are expected to last for 8 to 12 weeks and occur during weekends only. However, Mitigation Measure TR-1 (Section 3.3 Transportation of this EIS) requires implementation of a TMP to maintain access and connectivity along the US-101 and local roadways.
- For aesthetics, a temporary increase in light and glare from construction lighting during nighttime hours may result in undesired exposure or disruption of normal activities for nearby residential land uses. However, Mitigation Measure AES-2 (Section 3.4, Visual Quality and Aesthetics of this EIS) requires temporary lighting to be directed toward the

construction area and temporary shields to be used so light does not spill over into residential areas.

- For noise and vibration, construction activities would involve equipment that would increase noise and vibration levels for noise and vibration-sensitive land uses. As described in Section 3.6, Noise and Vibration of this EIS, Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 7575 A-weighted decibels (dBA) limit including: 41 dwelling units and one recreational use at William Mead Homes; 36 dwelling units and a playground at Care First Village; 82 dwelling units at Mozaic Apartments; and the Metro Gateway Childhood Development Center. However, Mitigation Measure NV-2 (Section 3.6, Noise and Vibration) requires implementation of noise- and vibration-reducing measures, including, but not limited to, constructing walled enclosures around loud activities, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets. Mitigation Measure NV-3 requires implementation of a Community Notification Plan to address community concerns related to potential noise and vibration impacts proactively.
- For air quality, heavy-duty construction equipment and earthwork activities would cause dust and temporary increase in emissions on nearby land uses, including residential land uses. However, Mitigation Measure AQ-1 (Section 3.5 Air Quality and Global Climate Change) requires fugitive dust to be controlled by regular watering or other dust preventive measures to be implemented and Mitigation Measure AQ-2 (Section 3.5 Air Quality and Global Climate Change) requires all off-road diesel-powered construction equipment greater than 50 horsepower to comply with U.S. EPA's Tier 4 final exhaust emission standards.

Mitigation Measures TR-1, AES-2, NV-2, NV-3, AQ-1, and AQ-2 would minimize temporary land use incompatibilities. Upon implementation of the mitigation measures above, no direct adverse effect would occur.

Direct Effects – Operations

Introduction of the retaining walls/sound walls in Segment 1 of the Project study area, and the new retaining walls, canopies, and lighting as part of the elevated rail yard in Segment 2 of the Project study area would present new transportation infrastructure adjacent to residential communities. This is considered an adverse effect because introduction of these new features would cause adverse visual effects and additional exposure to light or glare for residential land uses. Implementation of Mitigation Measure AES-1 requires aesthetic treatments to be added to the retaining walls/sound walls and Mitigation Measure AES-3 requires canopies to be designed with low reflective glass and materials and for new lighting to be constructed in compliance with applicable standards to reduce the effects of lighting and glare. Therefore, implementation of Mitigation Measures AES-1 and AES-3 would minimize land use compatibility impacts resulting from proposed infrastructure improvements in close proximity to residential land uses. In Segment 3 of the Project study area, the proposed run-through track infrastructure would be compatible with existing land uses due to the presence of US-101 and nearby railroad infrastructure.

Upon implementation of the Build Alternative, there would be severe noise impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes requiring mitigation as early as 2031 and severe noise impacts on 34 multifamily dwelling units (24 dwelling units at the William Mead Homes complex and 10 dwelling units at Care First Village) and 1 park/athletic field near William Mead Homes in 2040. Implementation of the Mitigation Measure NV-1 (described in Section 3.2.6) would avoid or minimize the potential for direct adverse effects related to operational noise that could contribute to potential land use incompatibility with existing residential and recreational land uses at William Mead Homes and Care First Village:

While proposed infrastructure would be near residential land uses in Segments 1 and 2 of the Project study area, implementation of Mitigation Measures AES-1, AES-3, and NV-1 would minimize adverse effects related to land use incompatibility and no direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS.

Construction of the Build Alternative would not induce indirect adverse effects related to incompatibilities with existing or planned land uses because intensification of future use of land surrounding LAUS has already been planned for under the assumption that the Project would be completed. New transit-oriented infill development at or surrounding LAUS would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS.

Indirect effects from induced growth could temporarily and permanently increase noise, air pollutant emissions, and traffic congestion within the surrounding area and may cause potential land use incompatibilities; however, any new development project or infill project around LAUS would be designed for maximum compatibility with existing and future train operations at LAUS. Therefore, no indirect effect would occur.

TOPIC 3.2-C	Physical division of an established community

No Action Alternative

Under the No Action Alternative, reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would

still occur along with other maintenance activities in the railroad ROW. New land use development would be implemented in areas consistent with local land use plans and zoning regulations. Due to the existing urbanized nature of the downtown area and presence of existing transportation infrastructure in the area surrounding LAUS, access and connectivity to and within established communities would be maintained and established communities would not be bisected. No direct or indirect adverse effect would occur.

Build Alternative

Direct Effects – Construction

Construction activities associated with the Build Alternative would not introduce new railroad tracks or other railroad infrastructure that would divide an established community. Although construction of the Build Alternative would require roadway detours, staging areas, and lane blockages within the limits of the Project footprint, access and connectivity to established neighborhoods and businesses would be maintained throughout the duration of construction and all affected roadways would be returned to their pre-construction conditions after construction is complete. There would be no closures that would physically divide a community during construction, therefore, no direct adverse effect would occur.

Direct Effects – Operations

In Segments 1 and 2 of the Project study area, all proposed transportation-related infrastructure would be located within the existing railroad ROW and Metro-owned property (LAUS). South of US-101 within Segment 3, run-through track infrastructure would be located between Commercial Street and US-101, where existing vacant properties and commercial and manufacturing/ industrial properties are currently located. Proposed infrastructure would not bisect any residential communities or restrict circulation within the surrounding area throughout operations because the new railroad corridor south of LAUS would be located directly adjacent to an existing freeway. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS.

Construction activities associated with the Build Alternative would not introduce new railroad tracks or other railroad infrastructure that would divide an established community. Therefore, no indirect adverse effects related to dividing an established community would occur during construction. Due to the existing urbanized nature of the downtown area and presence of existing transportation infrastructure in the area surrounding LAUS, new development is not expected to interrupt circulation or access within the Project study area in a manner that would create a

physical or perceived division within the community throughout operations. No indirect effects would occur.

TOPIC 3.2-D	Conflict with land use plans, policies, or local land use controls

The *Link US Community Impact Assessment* (Appendix D of this EIS) includes a consistency evaluation of the Build Alternative with applicable federal, regional, state, and local land use plans, policies, and controls, which is required under 40 CFR 1502.16(c). Metro is a regional governmental entity and is not required to comply with all local land use and zoning regulations; however, proposed infrastructure is designed to be generally compatible and consistent with local land use and zoning regulations.

No Action Alternative

Under the No Action Alternative, construction of the proposed infrastructure would not occur and the existing stub-end rail configuration at the LAUS rail yard would remain. The No Action Alternative would further contribute to deteriorating access and mobility within the SCAG region and increased road/highway congestion both locally and regionally. The 2020 RTP/SCS predicts traffic conditions in the region would deteriorate due to lack of capacity. The No Action Alternative would not align with plans and policies that encourage expanded capacity at LAUS, accommodation of the planned HSR system in Southern California, increased transit use, or multimodal connectivity to and from LAUS. Furthermore, the No Action Alternative would not achieve Purpose B of the ADSP by providing continued and expanded development of the site both as a major transit hub for the region and as a mixed-use development providing retail, tourism, and related uses, nor would it be consistent with Goal LU 22.16 of the DCP by advancing efforts to plan for the integration of HSR and other transit projects.

The No Action Alternative does not align with federal, state, or regional land use plans, policies, and regulations that promote integration of transportation and land use planning together to create more sustainable communities. In particular, the No Action Alternative is inconsistent with the 2023 FTIP and the regional land use and transportation goals of the 2020 RTP/SCS.

As previously noted, under the No Action Alternative regional and local congestion would worsen because mobility and connectivity would not be enhanced. This is considered an adverse direct and indirect effect. No mitigation is proposed to minimize this adverse effect other than implementation of the Build Alternative.

Build Alternative

Direct Effects – Construction

Metro is authorized by the State of California to develop its property under its enabling legislation (AB 152) and Public Utilities Code 30631(a).[3] Construction would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over proposed facilities and/or site conditions. The Build Alternative would be constructed in accordance with Metro's Green Construction Policy and other applicable federal, state, regional, and local plans and policies related to construction of new transit facilities. No direct adverse effect would occur.

Direct Effects – Operations

The Build Alternative is generally consistent with the federal, regional, state, and local land use plans, policies, and controls 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 is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the following:

- 2050 California Transportation Plan 2040 (Caltrans 2021)
- 2020 RTP/SCS: Connect SoCal (SCAG 2020)
- 2018 California State Rail Plan (Caltrans 2018a)
- 2022 Business Plan (CHSRA 2022)

The Build Alternative would enhance rail yard capacity for regional and intercity rail trains, and it would also provide interconnectivity to the planned HSR system, making it an attractive alternative to congested highways. From a regional perspective, the Build Alternative would expand existing transportation options and foster multimodal connectivity throughout the region while accommodating the planned HSR system. 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 LU 22.16 of the DCP by advancing efforts to plan for the integration of HSR and other transit projects.

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

[3] Metro, as a rapid transit district, is exempt from the Building and Zoning Code requirements as long as the alteration and the use of the facility is in furtherance of the public purpose of Metro and not purely a revenue-generating venture.

transportation infrastructure that accommodates the needs of pedestrians, bicyclists, and 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 connections 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 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 and the Los Angeles River.

The Build Alternative would also 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. This is considered an adverse effect. As described in Section 3.3, Transportation, the Build Alternative would also result in an adverse effect due to the operational traffic delays anticipated at one intersection south of LAUS (*Link US Traffic Impact Assessment,* Appendix E of this EIS). LADOT Traffic Assessment Guidelines require mitigation programs for adverse effects to minimize the demand for trips by single-occupant vehicles by encouraging, promoting, and supporting the use of other sustainable modes of travel such as public transit, walking, and bicycling. Consistent with LADOT Guidelines, Mitigation Measure LU-1 (described in Section 3.2.5) would improve connectivity among neighborhoods surrounding LAUS and would facilitate cycling and walking in the Project study area. As identified in Mitigation Measure LU-1, Metro, in coordination with the City of Los Angeles, would implement either Class II or IV type bike lanes that consist of only pavement striping and bollards (no additional ROW and no raised median would be required) along Commercial Street from Alameda Street to Center Street, to enhance neighborhood connectivity south of US-101. If additional funding is identified, a dedicated bicycle/ pedestrian bridge over US-101 would be constructed in addition to the new bicycle lanes described above. Table 3.2-3, at the end of this section, provides an environmental evaluation of the potential effects that may occur with implementation of the proposed infrastructure associated with Mitigation Measure LU-1 (the dedicated bicycle/pedestrian bridge and bicycle lanes on Commercial Street).

Additionally, due to the permanent loss of freight storage track capacity at the BNSF West Bank Yard, the Build Alternative would conflict with one policy and program of the *City of Los Angeles Mobility Plan 2035* and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. This is also considered an adverse effect.

- **Los Angeles Mobility Plan 2035 Policy 2.8: Goods Movement.** Implement projects that would provide regionally significant transportation improvements for goods movement.
- **Los Angeles Mobility Plan 2035 Program No. O.12: Improve the Flow of Freight Traffic.** Identify and implement strategies to facilitate the flow of freight traffic.
- **California Transportation Plan 2040 Goal 1.** Improve multimodal mobility and accessibility for all people

  - **California Transportation Plan 2040 Policy 1.1.** Manage and Operate an Efficient Integrated System.
- **California Transportation Plan 2040 Goal 2.** Preserve the Multimodal Transportation System.
- **California Transportation Plan 2040 Goal 2.3.** Adapt the Transportation System to Reduce Impacts from Climate Change.

Mitigation Measure TR-3 (described in detail in Section 3.3, Transportation) is proposed to offset the loss of storage track capacity at the BNSF West Bank Yard.

Upon implementation of Mitigation Measures LU-1 and TR-3, neighborhood connectivity would be enhanced with provision of active transportation infrastructure and railroad improvements at BNSF's Malabar Yard would be implemented; therefore, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS.

Construction of the Build Alternative would result in localized air pollutant emissions, construction noise, and traffic congestion within the area surrounding LAUS and mitigation measures are proposed to reduce potential for adverse effects. Similar to the Build Alternative, new development will be required to comply with all applicable regulations pertaining to air quality, noise, and traffic such as those identified in this EIS (Section 3.5, Air Quality and Global Climate Change; Section 3.6, Noise and Vibration; and Section 3.3, Transportation). These regulations include compliance with SCAQMD's Rule 403 for reducing fugitive dust emissions during construction, compliance with the City of Los Angeles Municipal Code and Noise Regulation, and preparing a transportation management plan.

Indirect effects from induced growth could permanently increase noise, air pollutant emissions, and traffic congestion within the area surrounding LAUS. However, as discussed above, the Build Alternative would encourage sustainable neighborhood development principles and other initiatives that would advance more efficient land use patterns and increase real estate values consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Investment in improved public transit systems that promote transit-oriented developments would also contribute toward achieving state and regional air quality and GHG reduction goals. Additionally, the Build Alternative could further support the General Plan of Los

Angeles' goals and policies that support development of an HSR system to achieve their economic development goals; therefore, no indirect adverse effect would occur.

3.2.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects on land use and planning.

LU-1 **Enhance Neighborhood Connectivity:** Consistent with the Los Angeles River Revitalization Master Plan, RIO Overlay District guidelines, LAUS Sustainable Neighborhood Assessment, City of Los Angeles Mobility Plan, Metro's LA River Path Project, and Metro's LAUS Forecourt and Esplanade Improvements Project, to mitigate the identified adverse effect/significant impact, Metro, in coordination with the City of Los Angeles, shall implement either Class II or IV type bike lanes that consist of only pavement striping and bollards (no additional ROW and no raised median will be required) along Commercial Street from Alameda Street to Center Street, enhancing neighborhood connectivity south of US-101. If additional funding is identified, a dedicated bicycle/pedestrian bridge over US-101 could be constructed in addition to the new bicycle lanes described above.

AES-1 **Aesthetic Treatments.** See Section 3.4, Visual Quality and Aesthetics, for details.

AES-2 **Minimize Nighttime Work and Screen Direct Lighting.** See Section 3.4, Visual Quality and Aesthetics, for details.

AES-3 **Screen Direct Lighting and Glare.** See Section 3.4, Visual Quality and Aesthetics, for details.

AQ-1 **Fugitive Dust Control.** See Section 3.5, Air Quality and Global Climate Change, for details.

AQ-2 **Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment.** See Section 3.5, Air Quality and Global Climate Change, for details.

NV-1 **Construct Sound Walls.** See Section 3.6, Noise and Vibration, for details.

NV-2 **Employ Noise- and Vibration-Reducing Measures during Construction.** See Section 3.6, Noise and Vibration, for details.

NV-3 **Prepare Community Notification Plan for Project Construction.** See Section 3.6, Noise and Vibration, for details.

TR-1 **Prepare a Construction Traffic Management Plan (TMP).** See Section 3.3, Transportation, for details.

TR-3 **Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street).** See Section 3.3, Transportation, for details.

3.2.7 NEPA Impact Summary

This section summarizes the effects related to land use and planning of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.2-A, no construction staging areas or laydown areas would be required to support construction of proposed infrastructure. No land use conversions would occur on properties south of LAUS. Under the No Action Alternative, temporary staging areas may be required to support reasonably foreseeable future projects and other planned improvements as part of the 2020 RTP/SCS as well as maintenance activities in the railroad ROW. Land use development would continue to occur in the Project study area pursuant to local land use plans and zoning regulations and could result in other direct and indirect effects on land use including property acquisitions and/or changes in land use patterns. The impacts of other projects would be addressed during CEQA and NEPA environmental reviews and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects.

As discussed under Topic 3.2-B, temporary land use incompatibilities related to transportation, aesthetics, noise and vibration, and air quality would not occur. No long-term compatibility effects would occur during operation because new land use development surrounding LAUS would be designed for maximum compatibility with ongoing train operations at LAUS and would be implemented consistent with local land use plans and zoning regulations. Any future development would also be subject to applicable environmental review. The impacts of other projects would be addressed during the environmental review and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects.

As discussed under Topic 3.2-C, due to the urbanized nature of the Project study area and presence of existing transportation infrastructure, access and connectivity to and within established communities would be maintained and established communities would not be bisected.

As discussed under Topic 3.2-D, the No Action Alternative would not align with plans and policies that encourage expanded capacity at LAUS, accommodation of the planned HSR system in Southern California, increased transit use, or multimodal connectivity to and from LAUS. The No Action Alternative would not achieve Purpose B of the ADSP by providing continued and expanded development of LAUS both as a major transit hub for the region and as a mixed-use development providing retail, tourism, and related uses, nor would it be consistent with Goal LU 22.16 of the DCP by advancing efforts to plan for the integration of HSR and other transit projects. The No Action Alternative does not align with federal, state, or regional land use plans, policies, and regulations that promote integration of transportation and land use planning together to create more sustainable communities and would be inconsistent with the 2023 FTIP and the regional

land use and transportation goals of the 2020 RTP/SCS. Under the No Action Alternative, regional and local congestion would worsen because mobility and connectivity would not be enhanced.

Build Alternative

As discussed under Topic 3.2-A, during construction, TCEs and staging areas are required to implement proposed infrastructure. The TCEs would be restored to their existing conditions or better after completion of construction and properties would not be rendered unusable after construction. The properties south of LAUS that would be fully acquired by Metro to implement proposed run-through track infrastructure. No direct adverse effect would occur.

The Build Alternative would result in the conversion of several vacant properties and commercial and manufacturing/industrial properties to transportation-related uses, thereby requiring the City of Los Angeles to implement General Plan Amendments and changes to existing zoning classifications. No direct adverse effect would occur because properties would not be rendered unusable, and these are administrative procedures to support implementation of transportation infrastructure that fulfills the guiding principles, goals, and policies of the DCP.

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Any new transit-oriented infill development at or surrounding LAUS would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Therefore, no indirect effect would occur.

As described under Topic 3.2-B, construction activities near residential and commercial areas in Segment 2 of the Project study area could cause temporary land use incompatibilities related to transportation, aesthetics, noise and vibration, and air quality. Upon implementation of the following mitigation measures, no direct adverse effect would occur:

- Mitigation Measure TR-1 requires implementation of a TMP to maintain access and connectivity along US-101 and local roadways.
- Mitigation Measure AES-2 requires temporary lighting to be directed toward the construction area and temporary shields to be used so light does not spill over into residential areas.
- Mitigation Measure NV-2 requires implementation of noise- and vibration-reducing measures, including, but not limited to, constructing walled enclosures around loud activities, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets. Mitigation Measure NV-3 requires implementation of a Community

Notification Plan to address community concerns related to potential noise and vibration impacts proactively.

- Mitigation Measure AQ-1 requires fugitive dust to be controlled by regular watering or other dust preventive measures to be implemented and Mitigation Measure AQ-2 requires all off-road diesel powered construction equipment greater than 50 horsepower to comply with U.S. EPA's Tier 4 final exhaust emission standards.

Throughout operation, the retaining walls/sound walls, canopies, and associated lighting as part of the rail yard would present new transportation infrastructure adjacent to residential communities. Implementation of AES-1 would minimize the dominance and scale of the retaining walls/sound walls, and AES-3 would reduce the effect of lighting and glare for nearby residential land uses. With implementation of Mitigation Measures AES-1 and AES-3, no direct adverse effect related to land use compatibility with existing or planned land uses would occur.

Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Infill development around the LAUS area would not result in adverse effects because new transit-oriented infill development would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas.

As discussed under Topic 3.2-C, access and connectivity to established neighborhoods and businesses would be maintained throughout the duration of construction and all affected roadways would return to pre-construction conditions after completion. The Build Alternative would not bisect any residential communities or restrict circulation within the surrounding area throughout operations because the new railroad corridor south of LAUS would be located directly adjacent to an existing freeway. New development around LAUS in downtown Los Angeles is not expected to interrupt circulation or access within the Project study area in a manner that would create a physical or perceived division within the community. No direct or indirect adverse effect would occur related to physical division of an established community.

As discussed under Topic 3.2-D, construction would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over proposed facilities and/or site conditions, including Metro's Green Construction Policy and other applicable federal, state, regional, and local plans and policies related to construction of new transit facilities. No direct adverse effect would occur.

The Build Alternative supports multiple statewide, regional, and local planning documents that guide future growth in rail operations and accommodation of the planned HSR system. At a regional scale, the Build Alternative expands existing transportation options, fosters multimodal connectivity, and accommodates the planned HSR system. At a local scale, the Build Alternative achieves Purpose B of the ADSP and is consistent with Goal LU 22.16 of the DCP by advancing

efforts to plan for the integration of HSR and other transit projects. The Build Alternative conflicts with plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River. Additionally, the Build Alternative would conflict with one policy and program of the *City of Los Angeles Mobility Plan 2035* and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. Upon implementation of Mitigation Measures LU-1 and TR-3, neighborhood connectivity would be enhanced with provision of active transportation infrastructure and railroad improvements at BNSF's Malabar Yard would be implemented; therefore, no direct adverse effect would occur.

Indirect effects from induced growth could temporarily and permanently increase noise, air pollutant emissions, and traffic congestion within the area surrounding LAUS. Temporary conflicts with applicable local land use plans, policies, and local land use controls may result if temporary construction noise, air pollutant emissions, and traffic congestion exceeds local thresholds. Operation of the Build Alternative would increase regional mobility and accessibility at LAUS. A discussed above, the Build Alternative would encourage sustainable neighborhood development principles and other initiatives that would advance more efficient land use patterns and increase real estate values consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Investment in improved public transit systems that promote transit-oriented developments would also contribute toward achieving state and regional air quality and GHG reduction goals. No indirect adverse effect would occur.

Table 3.2-2 provides an impact summary for the Build Alternative.

Table 3.2-2. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.2-A: Alteration of land use patterns	*Construction* No Adverse Effect	*Construction* No mitigation is required.	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required.	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
	Construction Adverse Effect	*Construction*	*Construction* No Adverse Effect

Table 3.2-2. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.2-B: Compatibility with existing or planned land uses		**TR-1 Prepare a Construction Traffic Management Plan (TMP)** **AES-2 Minimize Nighttime Work and Screen Direct Lighting** **NV-2 Employ Noise- and Vibration-Reducing Measures during Construction** **NV-3 Prepare Community Notification Plan for Project 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 Adverse Effect	*Operations* **AES-1 Aesthetic Treatments** **AES-3 Screen Direct Lighting and Glare**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
Topic 3.2-C: Physical division of an established community	*Construction* No Adverse Effect	*Construction* No mitigation is required.	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required.	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
	Construction No Adverse Effect	*Construction* No mitigation is required.	*Construction* No Adverse Effect

Table 3.2-2. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.2-D: Conflict with land use plans, policies, or local land use controls	*Operations* Adverse Effect	*Operations* **LU-1 Enhance Neighborhood Connectivity** **TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Section 3.2, Land Use and Planning			
Topic 3.2-A: Alteration of land use patterns	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.2-B: Compatibility with existing or planned land uses	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.2-C: Physical division of an established community	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.2-D: Conflicts with land use plan policies or local land use controls	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Section 3.3, Transportation			
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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:** **Potential Adverse Effect.** Lane closures may result in construction-related traffic delays.	**TR-1: Prepare a Construction TMP**	No Adverse Effect
Topic 3.3-B: Design features or incompatible uses that increase hazards	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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:** **Potential Adverse Effect.** Existing roadways may be subject to temporary detours and lane blockages.	**TR-1: Prepare a Construction TMP**	No Adverse Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.3-C: Emergency access	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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 Effect**	**TR-1: Prepare a Construction TMP**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** Existing roadways may be subject to temporary detours and lane blockages. **Commercial Street Restriping:** **Potential Adverse Effect.** Existing roadways may be subject to temporary detours and lane blockages.	**TR 1: Prepare a Construction TMP**	No Adverse Effect
Topic 3.3-E: Freight	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Section 3.4, Visual Quality and Aesthetics			
Topic 3.4-A: Visual character or quality	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** 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 Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.4-B: Light or glare	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** 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. Effects related to lighting would not be expected to substantially affect the surrounding area. **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Section 3.5, Air Quality and Global Climate Change			
Topic 3.5-A: General Conformity *de minimis* levels for the South Coast Air Basin **Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO_2e**	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** Construction of the dedicated bicycle/pedestrian bridge has the potential to create air quality effects 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 pollutant emissions that may exceed SCAQMD's significance thresholds (NOx, PM_{10}, and $PM_{2.5}$). **Commercial Street Restriping:** **No Adverse Effect.** 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: Fugitive Dust Control** **AQ-2: Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel for Off-Road Equipment**	No Adverse Effect
Section 3.6, Noise and Vibration			
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** Construction of the dedicated bicycle/pedestrian bridge would result in a new source of noise associated with the proposed infrastructure for land uses nearby. The Project study 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 Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.6-B: Groundborne vibration and groundborne noise levels	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** Construction of the dedicated bicycle/pedestrian bridge would result in temporary vibration from use of heavy equipment and machinery. The Project study 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 Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.6-C: Ambient noise levels	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** Construction of the dedicated bicycle/pedestrian bridge would result in a new source of noise associated with the proposed infrastructure for land uses nearby. The Project study 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 Adverse Effect.** The restriping of Commercial Street would not require excavation activities or the use of substantial construction equipment.	No mitigation is proposed.	No Adverse Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Section 3.7, Biological and Wetland Resources			
Topic 3.7-A: Nesting birds protected by the MBTA	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** If construction occurs during the bat maternity season (May 1 through August 31), there is a potential for direct effects (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 Effect**	**BIO-1: Bats** **BIO-2: MBTA Species**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.7-B: Wildlife movement	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Section 3.8, Floodplains, Hydrology, and Water Quality			
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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. 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 Effect**	**HWQ-1: Prepare and Implement an SWPPP** **HWQ-2: Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-4: Final Water Quality BMP Selection (City of Los Angeles)**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.8-B: Stormwater	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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 study area. 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 Effect**	**HWQ-1: Prepare and Implement an SWPPP** **HWQ-2: Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-4: Final Water Quality BMP Selection (City of Los Angeles)**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.8-C: Flooding	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.8-D: Water quality standards and waste discharge requirements	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect. Without mitigation, during construction and operation, the dedicated bicycle/pedestrian bridge could substantially degrade water quality.** If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation. Minor amounts of chemical pollutants and trash may enter the existing drainage system into the existing drainage system along US-101. **Commercial Street Restriping:** **No Effect**	**HWQ-1: Prepare and Implement an SWPPP** **HWQ-2: Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-4: Final Water Quality BMP Selection (City of Los Angeles)**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Section 3.9, Geology, Soils, and Seismicity			
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** As described in Section 3.9, Geology, Soils, and Seismicity, 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 Effect**	**GEO-1: Prepare Final Geotechnical Report**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.9-B: Soil erosion	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.9-C: Subsidence, lateral spreading, or unstable soils	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** As described in Section 3.9, Geology, Soils, and Seismicity, 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 Effect**	**GEO-1: Prepare Final Geotechnical Report**	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.9-D: Expansive soils	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** The bridge would be constructed in accordance with standard engineering practices to minimize the adverse effects of expansive soils, if any. **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Section 3.10, Hazardous Waste and Materials			
Topic 3.10-A: Transport, use, or disposal of hazardous materials	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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:** **Potential Adverse Effect.** 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**	No Adverse Effect
Topic 3.10-B: Risk of hazardous materials release into the environment	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** As shown on Figure 3.10-2 (Section 3.10, Hazardous Waste and 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 effects could include encountering soils contaminated with petroleum or petroleum products and exposure to accidental release of ACMs or lead. **Commercial Street Restriping:** **No Adverse Effect.** 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**	No Adverse Effect
Topic 3.10-C: Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.10-D: Hazardous materials site	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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 LUC 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 an adverse effect could occur. **Commercial Street Restriping:** **No Effect.** The restriping of Commercial Street would not require excavation activities that could otherwise result in potential exposure to contaminated soil and/or groundwater.	**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**	No Adverse Effect
Section 3.11, Public Utilities and Energy			
Topic 3.11-A: Water supply and infrastructure	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** Sufficient water supplies are expected to be available for construction of the dedicated bicycle/pedestrian bridge. **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.11-B: Drainage capacity and infrastructure	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** New drainage infrastructure would be required to accommodate increased impervious surfaces and associated impacts effects resulting from runoff. **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.11-C: Wastewater treatment capacity and infrastructure	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.11-D: Solid waste collection and landfill capacity	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** 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 Effect**	No mitigation is proposed.	**Dedicated Bicycle/ Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Topic 3.11-E: Telecommunications infrastructure	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.11-F: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** 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:** **No Adverse Effect.** 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 substantial, permanent, or unnecessary commitment to the use of energy, including non-renewable sources.	No mitigation is proposed.	No Adverse Effect
Section 3.12, Cultural Resources and Paleontological Resources			
Topic 3.12-A: Built environment resources	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.12-B: Archaeological resources	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** Ground disturbance during construction has the potential to impact recorded and unrecorded archaeological resources. There is a potential to encounter human remains during ground-disturbing construction activities. **Commercial Street Restriping:** **No Effect**	**CUL-1: CRMMP/HPTR for Archaeological Resources**	**Dedicated Bicycle/Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.12-C: Paleontological resources	**Dedicated Bicycle/Pedestrian Bridge:** **Potential Adverse Effect.** 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 Effect**	**PAL-1: Prepare a PMP** **PAL-2: WEAP Training** **PAL-3: Curation**	**Dedicated Bicycle/Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** No Effect
Section 3.13, Economic and Fiscal Impacts			
Topic 3.13-A: Employment, income, or tax revenues	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Section 3.14, Safety and Security			
Topic 3.14-A: Community safety services	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.14-B: Safety conditions	**Dedicated Bicycle/Pedestrian Bridge:** **No Adverse Effect.** The structure would be designed and constructed to meet Caltrans and Metro bridge standards, which have established barrier designs and minimum heights to deter individuals from dropping items over the rail onto US-101 or inflicting self-harm by jumping off the structure. **Commercial Street Restriping:** **Beneficial effect.** By providing designated spaces for modes, the striping of Commercial Street will reduce the likelihood of vehicle/pedestrian collisions.	No mitigation is proposed.	**Dedicated Bicycle/Pedestrian Bridge:** No Adverse Effect **Commercial Street Restriping:** Beneficial Effect
Topic 3.14-C: Security conditions	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Section 3.15, Socioeconomics and Communities Affected			
Topic 3.15-A: Community facilities	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect

Table 3.2-3. Potential Effects Resulting from Active Transportation Infrastructure

Topics	Potential Effects of Active Transportation Improvements	Proposed Mitigation Measures	Effect After Mitigation
Topic 3.15-B: Government services	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.15-C: Population growth	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.15-C: Business displacements and the economy	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect
Topic 3.15-E: Community character and cohesion	**Dedicated Bicycle/Pedestrian Bridge:** **No Effect** **Commercial Street Restriping:** **No Effect**	No mitigation is proposed.	No Effect

Notes:
ACM=asbestos-containing materials; BMP=best management practice; C&D=construction and demolition; CO_2e=carbon dioxide equivalent; CRMMP=Cultural Resource Mitigation and Management Plan; ESA=Environmental Site Assessment; FIRM=Flood Insurance Rate Map; GHG=greenhouse gas; HMMP=Hazardous Materials Management Plan; LAUS=Los Angeles Union Station; LOS=level of service; NOx=nitrogen oxides; MBTA=Migratory Bird Treaty Act; MT=metric ton; PM_{10}=Particulate Matter Less than 10 microns; $PM_{2.5}$=Particulate Matter Less than 2.5 microns; PMP=Paleontological Mitigation Plan; REC=Recognized Environmental Condition; ROW=right-of-way; SB=Senate Bill; SCAQMD=South Coast Air Quality Management District; SWPPP=stormwater pollution prevention plan; TMP=Traffic Management Plan; U.S. EPA=United States Environmental Protection Agency; USFWS=United States Fish and Wildlife Service; WEAP=Worker's Environmental Awareness Program

3.3 Transportation

3.3.1 Introduction

This section provides an evaluation of the potential effects related to transportation that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Traffic Impact Assessment* (Appendix E of this EIS) and published sources.

3.3.2 Regulatory Framework

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

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

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, Procedures for Considering Environmental Impacts Sec. 14(n)(13), 64 Federal Register 28545-28556, (1999)[1]	The FRA's Procedures for Considering Environmental Impacts require an assessment of impacts on passenger and freight transportation, by all modes, from local, regional, national, and international perspectives, with a discussion of construction and long-term impacts on vehicular traffic congestion.
Southern California Association of Governments Federal Transportation Improvement Program (2023)	The SCAG FTIP is a federally mandated 4-year program of all surface transportation projects that are planned to receive federal funding or are subject to a federally required action. The FTIP is a comprehensive listing of transportation projects proposed over a 6-year period. Projects in the FTIP include highway improvements, transit, rail and bus facilities, high-occupancy vehicle lanes, high-occupancy toll lanes, signal synchronization, intersection improvements, freeway ramps, non-motorized projects, bicycle, and pedestrian. The Project is listed in the SCAG 2023 FTIP as Project ID #LA0G1051.
State	
Caltrans California Transportation Plan 2050 (2021)	The vision of the California Transportation Plan 2050 is a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

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

Law, Regulation, or Plan	Description
Caltrans California State Rail Plan: Connecting California (2018)	The California State Rail Plan provides a vision for an integrated rail system for passenger rail and freight rail services. The California State Rail Plan also identifies the investments needed to reach state goals for increased passenger rail service frequency and improved connectivity.
California High Speed Rail Authority 2022 Business Plan: Recovery and Transformation (2022)	The 2022 Business Plan was adopted by the CHSRA Board of Directors in April 2022 and submitted to state legislature in May 2022. The 2022 Business Plan provides an update on what has transpired after COVID-19 and accounts for new opportunities provided by new transportation funding levels established by federal Bipartisan Infrastructure Law and Governor Gavin Newsom's proposed 2022 budget. The 2022 Business Plan serves as a bridge between the 2020 Business Plan and the 2023 Project Update Report.
Regional	
Southern California Association of Government 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020)	The RTP/SCS is a long-range RTP 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 GHG emission reduction goals. Amendment #2 to the 2020 RTP/SCS: Connect So Cal included the 2023 FTIP, and the Project is listed as #LA0G1051.
Southern California Regional Rail Authority – Southern California Optimized Rail Expansion Program (2018)	The SCORE Program calls for significant investments in rail infrastructure (such as track additions, grade crossing improvements, and station and signal improvements) in Southern California to provide more frequent and reliable passenger rail service, consistent with the goals of the 2018 California State Rail Plan. The Project is a fundamental element to the SCORE Program.
Local	
Metro First Last Mile Strategic Plan & Planning Guidelines (2014)	The First Last Mile Strategic Plan outlines specific infrastructure improvement strategies designed to facilitate efficient access to the Metro system. This plan coincides with Metro's plans to develop a world-class rail system with stations that will be a short distance (3 miles or less) from the homes of Los Angeles County residents.
City of Los Angeles Complete Streets Design Guide (2016)	The Complete Streets Design Guide accompanies the Mobility Plan 2035 and outlines a vision for designing safe, accessible, and vibrant streets in Los Angeles. As outlined in California's Complete Streets Act of 2008, the goal of Complete Streets is to ensure that the safety, accessibility, and convenience of all transportation users—pedestrians, bicyclists, transit riders, and motorists—is accommodated. The Complete Streets Design Guide provides a compilation of design concepts and best practices that promote the major tenets of Complete Streets—safety and accessibility. The guide is meant to supplement existing engineering practices and requirements to meet the goals of Complete Streets.
Metro Congestion Management Program (2010)	The CMP was adopted primarily to monitor and maintain LOS standards across the network of all CMP facilities, including state highways (U.S. 101) and principal arterials within Los Angeles County.

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

Law, Regulation, or Plan	Description
	Per the 2010 CMP, a significant impact, synonymous with adverse effect, 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, an adverse effect occurs when a project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02). The CMP was used as the basis for the environmental evaluation of traffic conditions on the US-101.
City of Los Angeles Mobility Plan 2035 (2016)	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.
Metro Connect US Action Plan (2015)	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 Active Transportation Strategic Plan (2016)	The Active Transportation Strategic Plan is Metro's countywide 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.
City of Los Angeles Transportation Impact Study Guidelines (2016)	According to LADOT Guidelines, for non-CMP intersections, operating at LOS E or F is considered unsatisfactory (LADOT 2016).[2] Per LADOT Guidelines, a significant impact, synonymous with adverse effect for purposing of this NEPA EIS, occurs when a project increases traffic delay at a signalized intersection when utilizing the HCM methodology by 6, 4, 2.5, and 2.5 seconds or more if the facility is at LOS C, D, E, and F under No Project conditions, respectively. The 2016 LADOT Guidelines were used as the basis for the environmental evaluation of traffic conditions on local intersections and roadway segments.

Notes:
CMP=Congestion Management Program; FRA=Federal Railroad Administration; LADOT=Los Angeles Department of Transportation; LOS=level of service; FTIP=Federal Transportation Improvement Program; HCM=Historic-Cultural Monument; RTP/SCS=Regional Transportation Plan/Sustainable Communities Strategy; SCAG=Southern California Association of Governments; SCORE=Southern California Optimized Rail Expansion; SCRRA=Southern California Regional Rail Authority; TDM=Transportation Demand Management; V/C=volume to capacity

[2] The 2016 Guidelines were in effect when this traffic study was initiated. LADOT issued a new set of guidelines in 2019, after the CEQA EIR for Link Union Station was approved. The new guidelines are not retroactive on previously approved projects.

3.3.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Traffic delays that limit the effectiveness of the traffic circulation system;
- Design of existing roadways and intersections causing increased hazards;
- Emergency access;
- Public transit, bicycle, or pedestrian facilities; and/or
- Freight.

For this evaluation, the term “Build Alternative” is used where there are no differences in impacts for the interim condition and the full build-out condition. Only when the conditions of the interim condition are different and warrant a breakout discussion from the full build-out condition (i.e., freight impacts) is a separated analysis provided. For traffic impacts, since the 2031 and 2040 conditions are considered, conclusions for these years are provided for the Build Alternative.

Geographic Area Considered

The traffic study area characterizes the affected environment for all intersections and roadway segments (see Figure 3.3-1 in the Affected Environment Section 3.3.4). The geographic area considered to determine potential traffic-related effects is the traffic study area. The Project footprint was used to determine potential effects for all other topics considered.

Methodology

Traffic Delay

Traffic Study Intersections

The traffic study area expands beyond Project study area to include all roads and intersections likely to be affected by the Build Alternative. A total of 32 intersections were evaluated for effects along the local transportation network within the traffic study area, utilizing traffic count data for the Existing Year (2016) condition. The traffic counts conducted at these 32 traffic study area intersections included average daily traffic (ADT) and intersection turn movements. Counts for vehicle classification, bicyclists, and pedestrians were also performed at these 32 traffic study area intersections.

The traffic counts were conducted in the year 2015 at the majority of the study intersections. When comparing these counts to the available traffic data from 2022, which reflects the post-pandemic conditions, it is evident that the year 2015 traffic counts indicate a higher number of trips at one of the study intersections. Given this observation, it is anticipated that a longer recovery time will

be required for the post-pandemic traffic to return to the pre-pandemic situation. This implies that the traffic levels experienced in the year 2015 may not be reached immediately, and it will take some time for the traffic volume to return to its previous levels.

Use of 2015 traffic count data provides the basis for a conservative traffic impact analysis. A technical memorandum was prepared to document the potential traffic condition changes and resulting conclusions under the Build conditions if a new set of post-pandemic traffic counts, instead of the year 2015 traffic counts, were conducted and applied to the impact evaluation. This technical memorandum is provided as Appendix O to the *Link US Traffic Impact Assessment* (Appendix E of this EIS). As presented in the technical memorandum, although construction and operational-related traffic delay may cause unsatisfactory LOS at some local intersections, the regional traffic conditions are not expected to be affected by the application of either the year 2015 traffic counts or post-pandemic traffic counts. Furthermore, Mitigation Measure TR-1 and Mitigation Measure LU-1 would both remain applicable to reduce any potential adverse construction and operational traffic-related effects pursuant to LADOT Guidelines, respectively. In summary, the year 2015 traffic counts are still valid and continue to be applied for this impact evaluation.

Traffic Conditions

Traffic-related effects were identified by determining if changes in the operations and performance at the traffic study area intersections, along the roadway segments, and on US-101 would occur due to added traffic in 2031 (Opening Year) and 2040 (Horizon Year). For the purposes of this EIS, the year 2031 corresponds to the full build-out condition or “Opening Year” when construction of the new lead tracks, elevated rail yard, and passenger concourse is complete. The year 2040 is the “Horizon Year” consistent with the environmental evaluation for the 2016 RTP/SCS and associated travel demand model applied for the traffic impact analysis. The future train movements estimated to occur through LAUS as described in the *Link US Rail Planning Technical Memorandum* are also based on planning documents with a 2040 horizon year (see Appendix C of this EIS).

Traffic impacts are presented for the following six traffic conditions:

1. Existing Year (2016) condition;
2. 2031 No Project condition (existing condition plus background traffic growth from 2016 to 2031 – Same as No Action Alternative);
3. 2040 No Project condition (existing condition plus background traffic growth from 2016 to 2040 – Same as No Action Alternative);
4. 2031 Plus Project Construction condition (Project-related traffic during concurrent construction of all major Project elements, including the lead tracks, expanded passageway, and run-through track infrastructure – Same as Build Alternative: Construction);

5. 2031 Plus Project condition (2031 No Project condition plus Project-related traffic – Same as Build Alternative: Operation); and
6. 2040 Plus Project condition (2040 No Project condition plus Project-related traffic – Same as Build Alternative: Operation).

For the purposes of this traffic impact analysis, the "Plus Project" condition is compared to the "No Project" condition to determine if impacts would occur based on LADOT guidelines. The terminology used for the purposes of the traffic impact analysis is described below:

- The "No Project" condition corresponds to the No Action Alternative and 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 Existing Year (2016) condition traffic volume to generate ambient traffic growth. The Project-related traffic effects are reported in this section in a comparative format with the No Project condition for 2031 and 2040.
- The "Plus Project Construction" condition corresponds to the timeframe when construction is occurring. This scenario includes projected growth forecasts that reflect traffic under the No Project condition plus expected traffic volume changes due to construction activities. Construction would require workers and equipment working simultaneously in multiple locations. This analysis assumes that trucks would arrive and depart the construction site throughout the workday and that construction would be conducted in four construction phases within a general time frame of 6 years. Construction-related trips would be generated based on the detailed construction phasing plans, staging areas, and projections for required materials and labor force for construction of the Build Alternative. The *Link US Traffic Impact Assessment* (Appendix E of this EIS) includes details on the phasing and assumptions for the estimated numbers of trucks, from 12 to 63, that would enter and exit out of the staging areas on any given day for each construction phase. Under the worst-case phase (Phase 1 of 4), it is assumed that 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 Construction" condition represents the worst-case scenario for Project-related traffic effects since all major components of the Build Alternative would be constructed concurrently by 2031. Although run-through track infrastructure south of LAUS may be implemented prior to 2031, the 2031 Plus Project Construction condition is purposely conservative by evaluating potential traffic-related effects assuming 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 concourse-related improvements, fewer construction-related traffic effects and associated truck trips are anticipated to occur than reported herein because this evaluation assumes all major components are constructed concurrently.
- The "Plus Project" condition corresponds to operation of the Build Alternative and includes projected growth forecasts that reflect the traffic under the No Project condition plus

expected traffic volume changes due to operation of the Build Alternative in 2031 and 2040.

Intersection Level of Service Standards

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.

In this analysis, minimum acceptable intersection operating conditions follow the 2016 LADOT Guidelines. Non-CMP 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, respectively. Synchro software was used for calculating the intersection LOS for existing and future conditions.

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: Link US Traffic Impact Assessment (Appendix E of this EIS)

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: Link US Traffic Impact Assessment (Appendix E of this EIS)

Notes:
LOS=level of service

Roadway Segment Level of Service Standards

Roadway segment LOS is based on the volume-to-capacity (V/C) ratio (Table 3.3-4) with roadway segment capacity analysis typically conducted for either daily or peak hour volumes. The V/C was calculated using the roadway segment capacities contained in the *Los Angeles County Traffic Impact Analysis Guidelines*. Table 3.3-4 shows the correlations between V/C ratios and LOS for roadway segments.

Table 3.3-4. Level of Service Definition for Roadway Segments	
LOS	**Volume-to-Capacity Ratio**
A	0.000-0.600
B	0.601-0.700
C	0.701-0.800
D	0.801-0.900
E	0.901-1.000
F	>1.000

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
LOS=level of service

Freeway Level of Service Standards

Freeway mainline LOS is estimated through calculation of the demand-to-capacity (D/C) ratio and associated LOS (Table 3.3-5), as outlined in the 2010 CMP. 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 mainline segments.

Table 3.3-5. Level of Service Definitions for Freeway Mainline 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: Link US Traffic Impact Assessment (Appendix E of this EIS)

Notes:
****F(#) - # in the parenthesis indicates the scale of the congestion level. The higher number reflects the worse level of congestion***
LOS=level of service

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Intersections

An adverse effect on intersection capacity would occur if the Build Alternative would result in the following delays at traffic study area intersections (Table 3.3-6):

- 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.

The LOS analysis for intersections was performed per LOS based requirements using the 2016 LADOT Guidelines. “Final delay” means the future delay per vehicle at an intersection with consideration of effects from the Build Alternative with ambient and Project-related 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 3.3-6. Adverse Transportation Effect (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: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
LOS=level of service

US-101 Mainline

The 2010 CMP is used to assess impacts along US-101 based on early coordination activities with Caltrans and Metro in 2016 when the TIA for the Project was initiated. Per the 2010 CMP, an adverse effect would occur if traffic demand on US-101 would result in an increase of 2 percent (V/C ≥ 0.02), causing LOS F (V/C > 1.00).

Emergency Access

Project-related effects would be considered adverse if street closures, detours, or lane reductions would cause traffic delays on local roadways or impede access for emergency responders.

Public Transit

Project-related effects on public transit services would be considered adverse if schedule delays to rail/transit service would impact on-time performance goals or create capacity shortages on the

system that would necessitate system improvements to accommodate additional transit service. Beneficial effects would occur if operational enhancements supported an increase in capacity or expansion of existing transportation options and increased rail service in Southern California.

Bicycle and Pedestrian Facilities

Project-related effects would be considered adverse if, after implementation of applicable mitigation measures, pedestrian and bicycle access is disrupted or if pedestrian and bicycle facilities are removed and not replaced. Beneficial effects would occur if Project-related effects would enhance existing bicycle and pedestrian facilities or accommodate future active transportation improvements.

Freight

Project-related effects on freight would be considered adverse if physical impacts to freight storage yards would result in loss of storage track capacity that would create operational inefficiencies or increased congestion on the shared passenger/freight rail network in the region.

3.3.4 Affected Environment

This section describes key roadway segments and intersections, daily roadway and peak-hour intersection traffic volume information, and the LOS for the Existing Year (2016) condition to characterize the affected environment.

Existing Roadways

The primary street network in the traffic study area is presented below and described in detail in the *Link US Traffic Impact Assessment* (Appendix E of this EIS).

East-West Roadways

- Cesar Chavez Avenue
- El Monte Busway
- US-101
- Arcadia Street
- Aliso Street
- Commercial Street
- Temple Street
- 1st 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 overcrossings or undercrossings. For example, San Pedro Street, Central Avenue, and Garey Street terminate south of US-101. Vignes Street terminates on either side of US-101. A list of the north-south roadways considered in the evaluation is presented below.

- Alameda Street
- Los Angeles Street
- Center Street/Ramirez Street
- Vignes Street
- Mission Road

The intersections included as part of the evaluation are listed below and depicted in Figure 3.3-1:

1. Alameda Street and Commercial Street
2. Garey Street and Commercial Street
3. Vignes Street and Commercial Street
4. Center Street and Commercial Street
5. Alameda Street and Temple Street
6. Vignes Street and Temple Street
7. Alameda Street and 1st Street
8. Vignes Street and 1st Street
9. Alameda Street and El Monte Busway (westbound)/Arcadia Street (two sets of counts)
10. Alameda Street and Los Angeles Street (eastbound) (two sets of counts)
11. Alameda Street and Cesar Chavez Avenue
12. Alameda Street and Vignes Street/Alpine Street
13. Vignes Street and Cesar Chavez Avenue
14. Vignes Street and Ramirez Street
15. Vignes Street and Main Street
16. Alameda Street/Spring Street and College Street
17. Alameda Street and Main Street/Ord Street
18. Alameda Street and Main Street/Bauchet Street
19. Main Street and Cesar Chavez Avenue

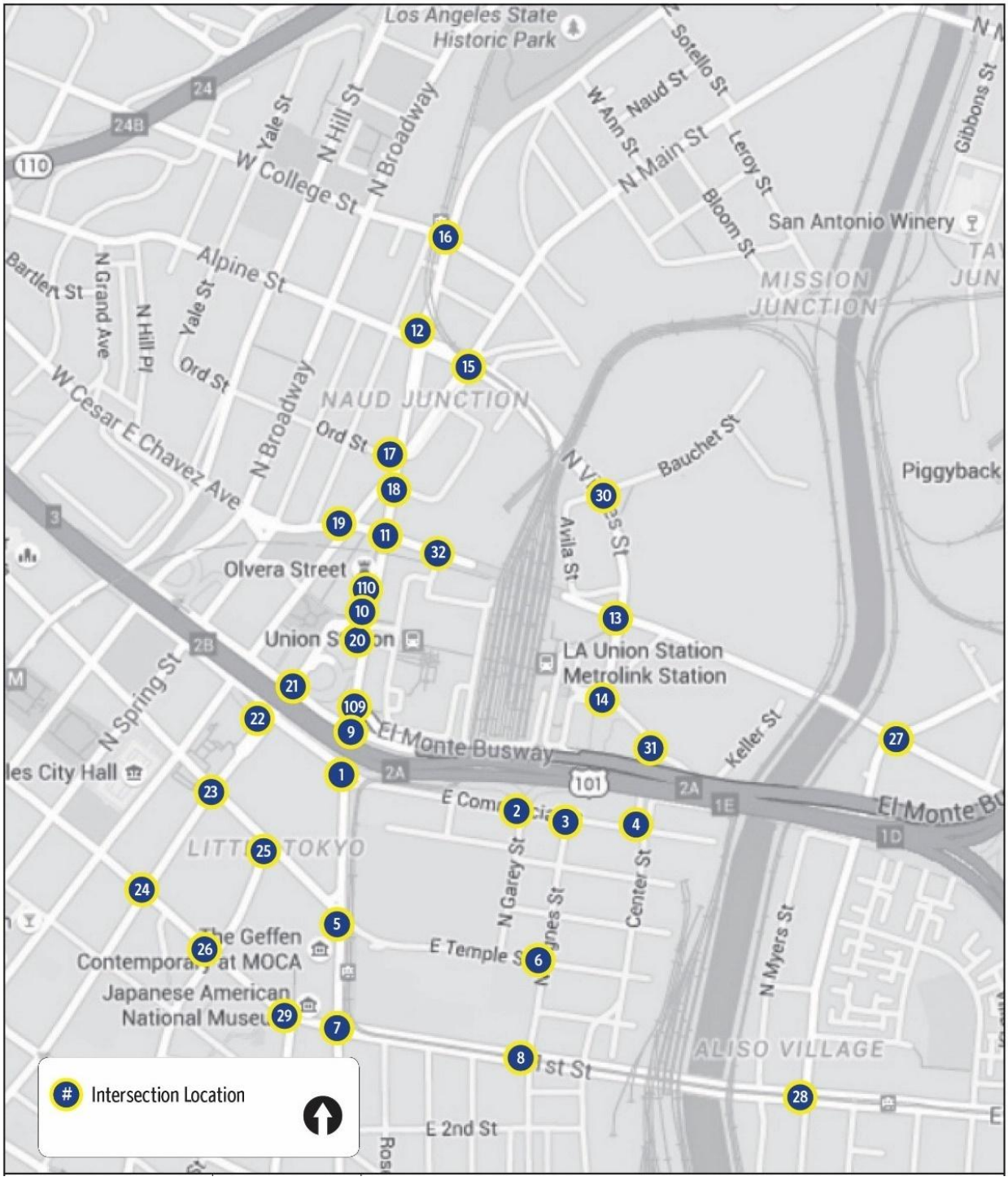
20. Alameda Street at Northbound US-101 northbound on-ramp
21. Los Angeles Street and Arcadia Street
22. Los Angeles Street and Aliso Street
23. Los Angeles Street and Temple Street
24. Los Angeles Street and 1st Street
25. Judge John Aiso Street and Temple Street
26. Judge John Aiso Street/San Pedro Street and 1st Street
27. Mission Road and Cesar Chavez Avenue
28. Mission Road and 1st Street
29. Central Avenue and 1st Street
30. Vignes Street and Bauchet Street
31. Ramirez Street and Center Street
32. Cesar Chavez Avenue and Union Station North Driveway

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

1. Alameda Street north of Commercial Street
2. Hewitt Street south of Commercial Street
3. Commercial Street west of Garey Street
4. Garey Street south of Commercial Street
5. Commercial Street east of Garey Street
6. Vignes Street south of Commercial Street
7. Ducommun Street between Vignes Street and Center Street
8. Jackson Street between Vignes Street and Center Street
9. Temple Street between Vignes Street and Center Street
10. Center Street north of Commercial Street
11. Center Street south of Commercial Street
12. Cesar Chavez Avenue east of Alameda Street

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Figure 3.3-1. Intersection Locations



Source: Link US Traffic Impact Assessment (Appendix E of this EIS)

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Existing Traffic Volumes and Operating Conditions

Arterial Average Daily Traffic

Alameda Street: Under existing conditions, 32,542 vehicles travel daily on Alameda Street north of Commercial Street, which consists of a northbound volume of 17,107 vehicles and a southbound volume of 15,435 vehicles. There is a notable difference between the AM and PM periods, with the AM period (12 midnight to 12 noon) having a volume of 13,760 vehicles (42.3 percent ADT) and the PM period having a volume of 18,782 vehicles (57.7 percent ADT). Peak hour periods are discussed below.

Commercial Street: The ADT for Commercial Street west of Garey Street totals 11,841 vehicles, of which the eastbound ADT is 6,319 vehicles and the westbound ADT is 5,522 vehicles. Meanwhile, the ADT is 8,427 vehicles on Commercial Street east of Garey Street, consisting of 4,077 eastbound vehicles and westbound 4,350 vehicles. 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 appears 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. Meanwhile, the ADT is 15,636 vehicles south of Commercial Street, which comprises 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 motorists access Commercial Street 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 to be used by motorists as an alternative route to Center Street or Garey Street.

Temple, Jackson, and Ducommun Streets: There are three segments between Vignes Street and Center Street that 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: The ADT on Cesar Chavez Avenue east of Alameda Street is 26,094 vehicles, comprising an ADT of 11,981 vehicles eastbound and an ADT of 14,113 vehicles westbound. These volumes indicate a 46 percent eastbound and 54 percent westbound directional split.

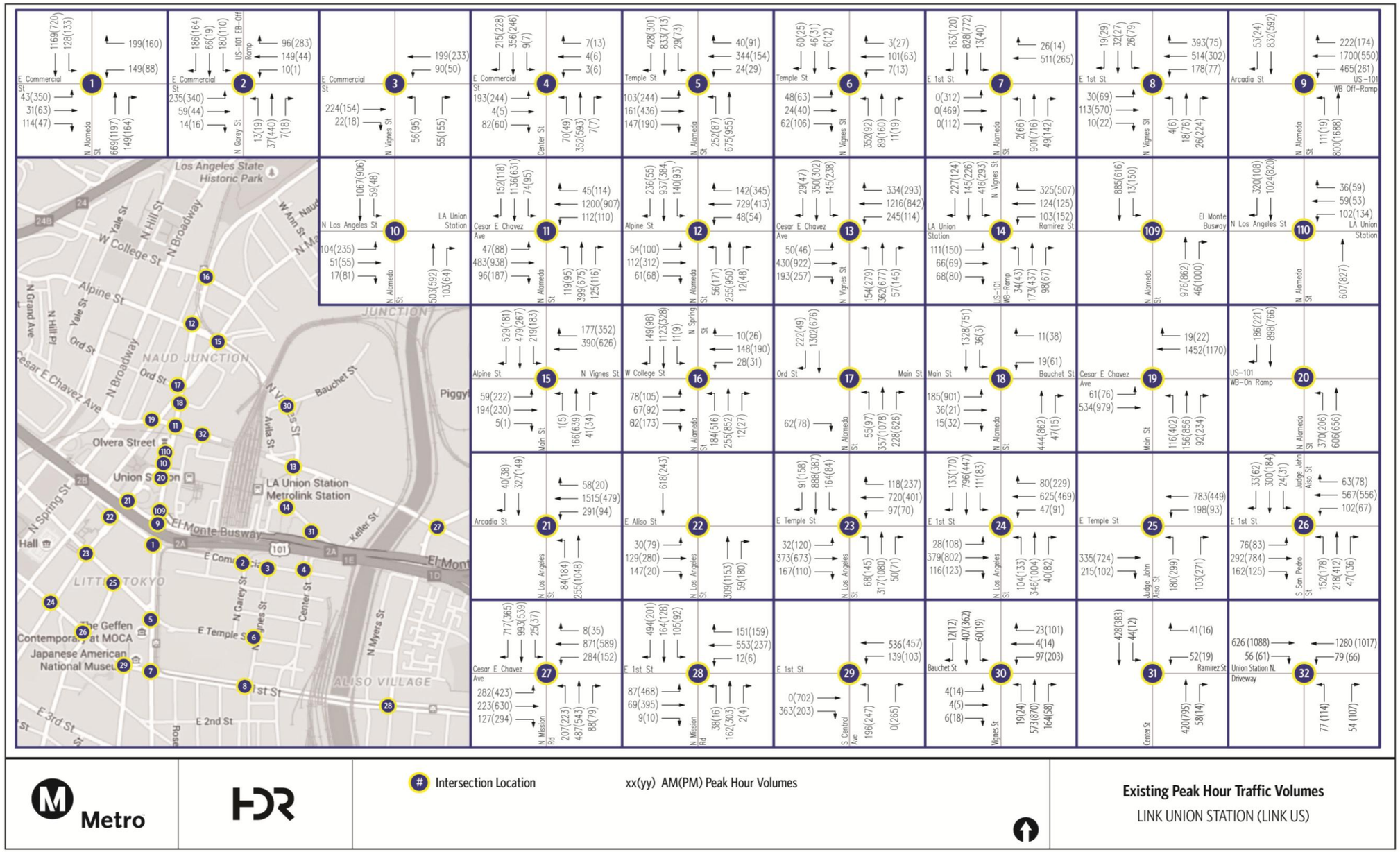
Existing Peak-Hour Traffic Volumes

Figure 3.3-2 depicts the AM and PM peak-hour intersection turn movements. The existing peak-hour volumes depicted in Figure 3.3-2 were balanced between adjacent intersections and adjusted accordingly and are based on the traffic counts conducted between 6:00 and 9:00 AM for the AM peak period and between 3:30 and 6:30 PM for the PM peak period.

Vehicle Classification and Truck Percentages

Vehicle classification counts were conducted through both ADT (automatic counts dated September 9 and 17, 2015) and intersection turn movement counts (manual counts dated June 18, September 9, November 5, 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.

Figure 3.3-2. Existing Peak Hour Traffic Volumes



Source: Link US Traffic Impact Assessment (Appendix E of this EIS)

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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 proposed run-through tracks 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 three-axle trucks. Table 3.3-7 depicts the two-axle truck and bus percentages of the four intersections during AM and PM peak hours. Additional information, including turn movements and ADT truck and bus percentages, is provided in the *Link US Traffic Impact Assessment* (Appendix E of this EIS).

Table 3.3-7. Vehicle Classification on Commercial Street

Peak Period	Car (percent)	Truck and Bus (percent)
AM Peak		
At Alameda Street	92.0	8.0
At Garey Street/US-101 southbound ramp	89.6	10.4
At Vignes Street	91.0	9.0
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: Link US Traffic Impact Assessment (Appendix E of this EIS)

During both AM and PM peak hours, the combined truck and bus percentages on Commercial Street are generally less than 10 percent within the traffic study area. 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 and bus percentage is higher than 10 percent during both AM and PM peak hours.

Existing Intersection Level of Service

Table 3.3-8 summarizes the existing LOS during the AM and PM peak hours for the intersections analyzed. As depicted in Table 3.3-8, all study intersections currently operate at acceptable LOS D or better, during both AM and PM peak hours.

Table 3.3-8. 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 Westbound	12.4	0.31	B	12.7	0.33	B
110	Alameda Street and Los Angeles Street Eastbound	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

Table 3.3-8. Existing Peak Hour Intersection Level of Service

Intersection	Intersection	AM Peak			PM Peak		
		Delay (second)	V/C	LOS	Delay (second)	V/C	LOS
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]	—	—	—	—	—	—
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: Link US Traffic Impact Assessment (Appendix E of this EIS)

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

LOS=level of service; V/C=volume to capacity

Existing Volumes and Traffic Conditions on US-101

Freeway traffic data from the 2010 CMP were utilized for this analysis because they were the most recently available at the time of preparation[3] to assess the existing operating conditions on US-101 north of Vignes Street (post mile [PM] 0.45). D/C ratios were estimated assuming a capacity of 2,000 vehicles per hour per lane. As depicted in Table 3.3-9, this freeway segment currently operates at an unacceptable LOS of LOS E or worse, during both AM and PM peak hours.

Table 3.3-9. Freeway Mainline Level of Service – Existing Year (2016) Condition

Freeway Analysis Location	Peak	Northbound				Southbound			
		Demand	Capacity	D/C	LOS	Demand	Capacity	D/C	LOS
US-101 North of Vignes Street (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: Link US Traffic Impact Assessment (Appendix E of this EIS)

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

Public Transit

The COVID-19 pandemic lockdown substantially reduced public transit ridership. The ridership level has increased post-pandemic but remains below the pre-pandemic levels used for the evaluation.

Buses

On weekdays, the Patsaouras Transit Plaza serves approximately 1,046 buses per day. On Saturdays and Sundays, approximately 556 and 655 buses are served, respectively. Thus, in a week, approximately 6,441 total buses are served. Under an 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 18,000 individual trips per weekend day, which, as a whole, reduces the number of motorists using roadways in the traffic study area.

South of LAUS, LADOT Downtown Area Short Hop Route D is the only bus route using Center Street. Other Downtown Area Short Hop bus routes in the area include Routes A and B. Detailed bus routes, bus schedules, and information can be found in the *Link US Traffic Impact Assessment* (Appendix E of this EIS). Additionally, the El Monte Busway on-ramp is a shared-use bus corridor and high-occupancy vehicle lane that travels west along US-101.

[3] Prior to 2019 and the passage of SB 743, CMP traffic data were updated once every 10 years.

Amtrak

In 2016, Amtrak operated 28 revenue trains per weekday into and out of LAUS, which included 13 Pacific Surfliner trains originating or terminating at LAUS; 10 Pacific Surfliner "through trains" that traveled 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 was a combined train that operated 3 times per week. Amtrak/LOSSAN also operated 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 passed through LAUS.

Metrolink

SCRRA or Metrolink is a joint powers authority (JPA) 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, Orange, 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 operated 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 operated 46 non-revenue trains between LAUS and the Central Maintenance Facility (CMF). During the 3-hour peak period, 80 Metrolink trains (39 in the AM and 41 in the PM) passed 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.

As part of the traffic study, pedestrian and bicyclist counts were collected and included in the intersection analysis, as applicable. Pedestrian and bicyclist activities were observed at each study intersection, while manual counts were conducted during AM and PM peak periods for the following intersections:

- At the intersection of Alameda Street and 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 periods, there were 0 to 224 pedestrians per hour crossing a leg of this intersection, with the south leg having the highest volume. During the PM peak periods, the counts ranged from 0 to 144 pedestrians per hour, 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 periods; the counts for each movement ranged from 0 to 9 bicyclists per hour.
- At the intersection of Garey Street and 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 per hour during the AM and PM peak periods. Bicyclists were observed at each approach for AM and PM peak hours; however, only 1 bicyclist was observed at the westbound approach.
- At the intersection of Center Street and Commercial Street, the number of pedestrians was low on all legs for AM and PM peak hours. The pedestrian counts for all the legs that had crosswalks observed 11 pedestrians during the AM peak hour and 28 pedestrians during the PM peak hour. Bicyclists were observed at this intersection, and numbers were similar during AM and PM peak periods; the counts for each movement ranged from 5 to 26 bicyclists per hour.

The pedestrian and bicyclist volumes observed demonstrate that the intersection of Alameda Street and Commercial Street experiences higher pedestrian and bicyclist volumes than other nearby intersections.

Parking

Existing on-street parking in the traffic study area was inventoried in September 2014 and is presented herein for informational purposes. As shown in Table 3.3-10, a total of 275 general spaces and 12 loading spaces were identified. Most parking within the traffic study area is metered (243 spaces are metered and 32 are open space parking). The meters and 10-hour parking limit are effective weekdays between 6:00 AM and 4:00 PM. In addition to the existing parking spaces shown in Table 3.3-10, on-street parking is also located on Bolero Lane, Leroy Street, and Bloom Street, which primarily serves the residents of William Mead Homes.

Table 3.3-10. Existing On-Street Parking

Location	Existing Parking Spaces		
	Metered	Open	Loading
Commercial Street (between Alameda Street and east of Center Street)	8	0	0
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 1st 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	**243**	**32**	**12**

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)

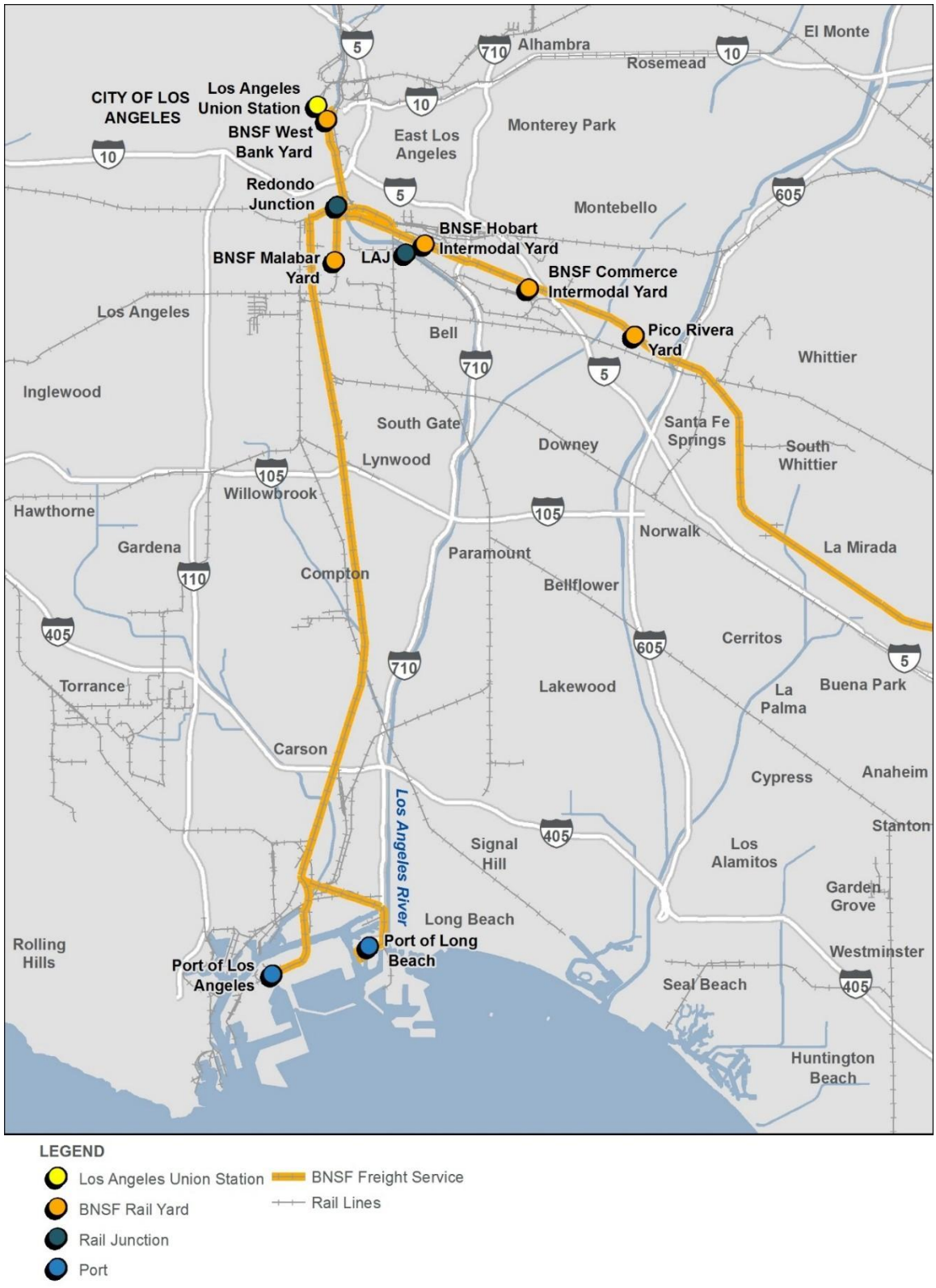
Freight

In the Southern California region, BNSF, among other freight rail companies, operates freight trains on multiple subdivisions and railroad corridors, most of which are shared with passenger trains. BNSF freight trains operate from the Ports of Los Angeles and Long Beach to BNSF Hobart/Commerce Intermodal Yards, where cargo containers are transferred to trucks or other rail lines for customer delivery (Figure 3.3-3). BNSF routinely moves empty bare tables (wheels and chassis that support cargo, shipping containers, or tanks) between BNSF West Bank Yard and the nearby BNSF Hobart/Commerce Intermodal Yards in a singular, uninterrupted movement along the San Bernardino Subdivision. The San Bernardino Subdivision is a heavily congested railroad corridor, with precise timetables for both freight and passenger train traffic that coincide to maximize the operable space across the corridor.

The current capacity and configuration of the existing storage tracks at BNSF West Bank Yard facilitates storage and staging of long, continuous intermodal trainsets that consist of empty bare tables that are transported to and/or from the longest production track at BNSF Hobart Yard (which is approximately 8,000 feet long). BNSF West Bank Yard can accommodate up to an 8,000-foot-long trainset in any of the four storage tracks. When empty bare tables are needed at BNSF Hobart Yard, a BNSF locomotive is routed to BNSF West Bank Yard to pull only the required number of empty bare tables needed.

BNSF West Bank Yard is a critical facility for regional goods movement because the location allows BNSF to store excess empty bare tables as trains pass Redondo Junction (Figure 3.3-3) along the route between BNSF Hobart/Commerce Intermodal Yards and nearby ports.

Figure 3.3-3. Regional Ports and BNSF Facilities



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3.3.5 Environmental Consequences

TOPIC 3.3-A	Traffic delays that limit the effectiveness of the traffic circulation system

No Action Alternative

Under the No Action Alternative, no Project-related changes to the roadway network would occur and no direct short-term increases in construction-related vehicle trips or new operational trips would be added to the roadway network. Some roadway modifications in the traffic study area can be expected from other cumulative projects and improvements identified in the latest RTP/SCS.

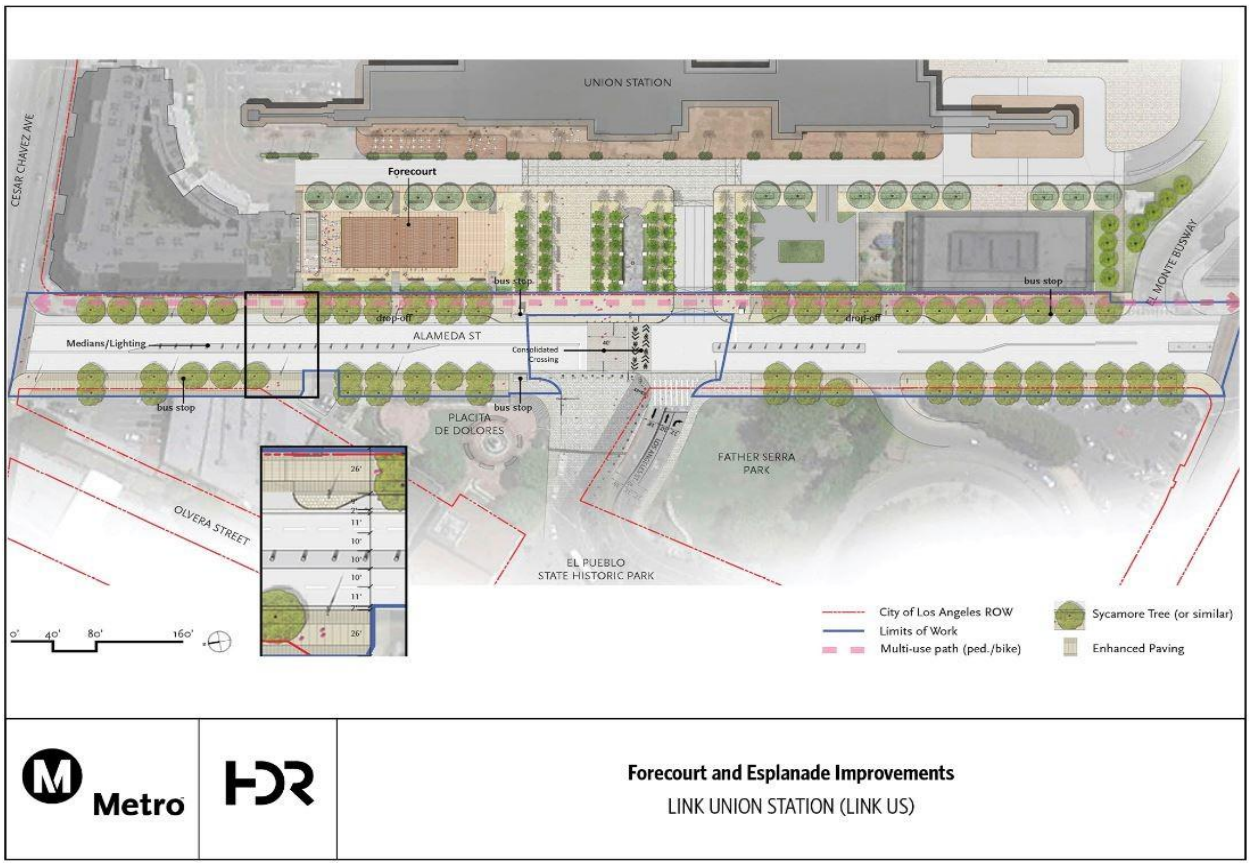
In 2031, all traffic study intersections are expected to operate at LOS D or better, during both AM and PM peak hours, except for the following intersections:

- Intersection #4: Center Street and Commercial Street (from LOS D to LOS F, PM Peak Hour).
- Intersection #15: Vignes Street at Main Street (from LOS D to LOS E, PM Peak Hour).
- Intersection #27: Mission Road and Cesar Chavez Avenue (from LOS D to LOS E, AM Peak Hour).

Since no new operational trips would be added to the roadway network under the No Action Alternative, no direct Project-related effects on the existing LOS in the traffic study area would occur.

In 2040, the Connect US Action Plan is assumed to be implemented, in addition to Metro's LAUS Forecourt and Esplanade Improvements Project (Figure 3.3-4). The LAUS Forecourt and Esplanade Improvements Project includes modifications to Alameda Street that 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. In addition to the lane reductions, Los Angeles Street across from LAUS would be closed and vacated for an exclusive pedestrian plaza. With this closure, LAUS would have a combined intersection for entrances and exits. Figure 3.3-4 depicts the LAUS Forecourt and Esplanade Improvements concept.

Figure 3.3-4. Alameda Street Improvements
(LAUS Forecourt and Esplanade Improvements Project)



In 2040, all traffic study intersections are calculated to operate at LOS D or better, during both AM and PM hours, except for the following intersections:

- Intersection #4: Center Street and Commercial Street (from LOS D to LOS F, PM Peak Hour).
- Intersection #9: Alameda Street at El Monte Busway/Arcadia Street (from LOS B to LOS F, AM Peak Hour).
- Intersection #15: Vignes Street at Main Street (from LOS D to LOS E, PM Peak Hour).
- Intersection #27: Mission Road at Cesar Chavez Avenue (from LOS D to LOS E, AM Peak Hour).

Without implementation of the Build Alternative, these four intersections would continue to operate poorly in 2040. Other cumulative projects and their associated traffic may further degrade future traffic conditions without the benefit of offsetting mode shift. Therefore, an indirect adverse effect related to traffic circulation and operation would occur under the No Build Alternative. No mitigation is proposed to minimize this indirect adverse effect other than implementation of the Build Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative 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.

Construction Detours and Local Street Closures

Construction of the Build Alternative would occur in multiple phases and stages. The anticipated locations of construction detours and street closures are depicted in Figure 3.3-5 and discussed below in the context of the three primary Project segments.

- **Segment 1: Throat Segment.** In the throat segment, the Vignes Street Bridge would be reconstructed at the same location as the existing bridge, and construction activities would occur 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 time, traffic along Vignes Street would be rerouted along Cesar Chavez Avenue and Alameda Street. Temporary traffic delays and disruption to pedestrian sidewalks and bicycle network would occur during bridge reconstruction, and reconfiguration of local street circulation would be required to accommodate construction activities. However, these impacts are temporary and would cease after completion of construction. Additionally, with the incorporation of Mitigation Measure TR-1 (described in Section 3.3.6), which requires the preparation and implementation of a TMP, alternative routes to maintain access and connectivity will be identified during temporary access restrictions on affected roadways.
- **Segment 2: Concourse Segment.** In the concourse segment, the Cesar Chavez Avenue Bridge would be reconstructed at the same location as the existing bridge, resulting in closure of Cesar Chavez Avenue during demolition of the existing bridge. During this road closure, traffic along Cesar Chavez Avenue would be rerouted along Vignes Street and Alameda Street. Similar to the Vignes Street closure described in Segment 1, temporary traffic delays and disruption to pedestrian sidewalks and bicycle network would occur during bridge reconstruction, and reconfiguration of local street circulation would be required to accommodate construction activities. These impacts are temporary and would cease after completion of construction. As discussed above, Mitigation Measure TR-1 (described in Section 3.3.6) requires a TMP to maintain access and connectivity and minimize impacts associated with temporary access restrictions.
- **Segment 3: Run-Through Segment.** In the run-through segment, local street closures are not planned to occur because run-through tracks would be located north of Commercial Street on vacant property. For the Build Alternative, the 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, although short-term overnight

closures of the El Monte Busway, US-101 mainline, and southbound ramps at Commercial Street would be necessary to erect and dismantle falsework during construction of the US-101 Viaduct (see discussion below for the US-101 Mainline).

Figure 3.3-5. Construction Detours and Street Closures



Source: Link US Traffic Impact Assessment (Appendix E of this EIS)

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Intersections – 2031 Plus Project Construction

Project-related construction activities are estimated to generate 1,481 daily trips (in passenger car equivalents). Table 3.3-11 summarizes peak hour LOS for two of the intersections that would be affected by construction-related traffic delay in the 2031 Plus Project Construction condition. Refer to the *Link US Traffic Impact Assessment* (Appendix E of this EIS) for peak hour LOS at all intersections.

As shown in Table 3.3-11, in the 2031 Plus Project Construction condition, out of the 32 intersections, two intersections would exceed the 2.5-second delay significance criterion per LADOT guidelines:

- Intersection #15: Vignes Street and Main Street (from LOS D to LOS F, PM Peak Hour).
- Intersection #27: Mission Road and Cesar Chavez Avenue (from LOS D to LOS E, AM Peak Hour).

Based on the anticipated construction-related traffic delays at these two impacted intersections, this is considered an adverse effect. However, with the implementation of Mitigation Measure TR-1 (described in Section 3.3.6), a TMP will be prepared to address construction-related vehicular traffic impacts. The TMP will 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 TMP requires coordination with LADOT and Caltrans to adjust the timing at affected intersections to mitigate detoured traffic volumes and the installation of closed-circuit television cameras to monitor traffic in real-time and allow the city to alleviate congestion by manually changing signal timing parameters, such as allowing more green time to congested movements. As shown in Table 3.3-11, implementation of Mitigation Measure TR-1 would reduce the average delay at affected intersections (Intersections #15 and #27). Therefore, no direct adverse effects would occur for the 2031 Plus Project Construction condition.

US-101 Mainline

Construction activities of the Build Alternative would generate additional construction traffic on US-101 and result in reduced lanes and the 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 lane width reductions and night closures are expected to last for 8 to 12 weeks and occur during weekends only. For the short segment of US-101 that would be affected during the closure timeframes, delay on adjacent local roads is not expected because existing traffic would be redistributed along nearby roads. The southbound ramps at Commercial Street may be either partially or fully restricted for extended periods (during daytime on weekends) during construction of the US-101 viaduct over the existing on- and off-ramps. The LOS methodology from the 2010 Congestion Management Program (CMP) was used to analyze traffic impacts along the US-101 based on early coordination and discussion with Caltrans and Metro in 2016 when the TIA for the Project was initiated. The construction activities associated with the Build Alternative would not increase the traffic demand on the US-101

mainline by more than 2 percent of the capacity (*Link US Traffic Impact Assessment,* Appendix E of this EIS, Table 8-7); therefore, no direct adverse effects on the US-101 mainline would occur for the 2031 Plus Project Construction condition.

Table 3.3-11. Peak Hour Level of Service for Impacted Intersections – 2031 Plus Project Construction Condition (with and without Mitigation)

Intersection	Intersection	AM Peak					PM Peak				
		2031 Construction without Mitigation		2031 Construction with Mitigation		Delta in Delay	2031 Construction without Mitigation		2031 Construction with Mitigation		Delta in Delay
		Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Delay (second)	LOS	Delay (second)	LOS	Delay (second)
15	Vignes Street and Main Street	23.8	C	27.7	C	3.9	82.8	**F**	63.4	**E**	-19.4
27	Mission Road and Cesar Chavez Avenue	61.8	**E**	60.2	**E**	-1.6	26.4	C	26.5	C	0.1

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
LOS=level of service
Bold indicates LOS of E or F

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Direct Effects – Operations

Operational traffic that may result from implementation of the Build Alternative is based on the trip generation assumptions approved by LADOT. The trip generation methodology is described in detail in *Link US Traffic Impact Assessment* (Appendix E of this EIS) and is summarized below:

1. **Growth in background traffic due to increased non-Project related activity at LAUS.** With a background traffic growth rate of 0.2 percent per year, a 4.8 percent growth in traffic levels is anticipated between 2016 and 2040. 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 addition of approximately 160,000 square feet of transit-oriented retail space and approximately 30,400 square feet of office/commercial space as part of the concourse-related improvements for the Build Alternative 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.** Metro provided the mode splits of the ridership at LAUS. The mode splits of the ridership indicate 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.

Intersections – 2031 Plus Project

As shown in Table 3.3-12, under the 2031 Plus Project condition, out of the 32 intersections, one intersection would exceed the 2.5-second delay significance criterion per LADOT guidelines (Table 3.3-6). This is considered an adverse effect.

- Intersection #4: Center Street and Commercial Street (from LOS D to LOS F, PM peak Hour). The Build Alternative would result in an increased delay of 3.0 seconds during the PM peak hour.

Intersections – 2040 Plus Project

As shown in Table 3.3-13, for the 2040 Plus Project condition, out of the 32 intersections, one intersection would exceed the 2.5-second delay significance criterion per LADOT guidelines (Table 3.3-6). This is considered an adverse effect.

- Intersection #4: Center Street and Commercial Street (from LOS D to LOS F, PM Peak Hour). The Build Alternative would result in an increased delay of 3.1 seconds during the PM peak hour.

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

Intersection	AM Peak						PM Peak					
	2031 No Project		2031 Plus Project		Delta in Delay		2031 No Project		2031 Plus Project		Delta in Delay	
	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Adverse Effect?	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Adverse Effect?
#4: Center Street and Commercial Street	17.2	C	18.0	C	0.8	No	57.5	**F**	60.5	**F**	3.0	**Yes**

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
2031 peak hour LOS for all other intersections are provided in the Link US Traffic Impact Assessment (Appendix E of this EIS).
LOS=level of service
Bold indicates LOS of E or F

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

Intersection	AM Peak						PM Peak					
	2040 No Project		2040 Plus Project		Delta in Delay		2040 No Project		2040 Plus Project		Delta in Delay	
	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Adverse Effect?	Delay (second)	LOS	Delay (second)	LOS	Delay (second)	Adverse Effect?
#4: Center Street and Commercial Street	18.0	C	18.9	C	0.9	No	62.5	**F**	65.6	**F**	3.1	Yes

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
2040 peak hour LOS for all other intersections are provided in the Link US Traffic Impact Assessment (Appendix E of this EIS).
LOS=level of service
Bold indicates LOS of E or F (Adverse Effect)

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Based on the LADOT Guidelines (LADOT 2016), the City of Los Angeles encourages implementation of mitigation measures that would focus on minimizing the demand for trips by single-occupant vehicles through trip reduction strategies and encouraging other modes of transportation, such as public transit and bicycles. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) requires Metro to implement active transportation improvements, such as new bicycle lanes along Commercial Street from Alameda Street to Center Street or a dedicated bicycle/pedestrian bridge over US-101 to minimize impacts related to conflicts with applicable plans and policies. This mitigation measure also minimizes the impacts related to operational traffic delays for both the 2031 Plus Project and 2040 Plus Project conditions. Mitigation Measure LU-1 would enhance nonmotorized connectivity, facilitate a pedestrian and bicycle-friendly environment in the Project study area, and encourage the use of alternate modes of transportation, consistent with LADOT Guidelines (LADOT 2016), Metro's Active Transportation Program, and the City's sustainability, smart growth, and GHG reduction objectives. These active transportation improvements would minimize operational impacts during the PM peak hours while also enhancing neighborhood connectivity. Therefore, with the implementation of Mitigation Measure LU-1, no direct traffic-related adverse operational effects would occur for the 2031 Plus Project or 2040 Plus Project conditions.

US-101 Mainline –2031 Plus Project

Future operating conditions on the US-101 mainline in 2031 are summarized in Table 3.3-14, which shows 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 Plus Project conditions. No volume to capacity (V/C) increases attributable to the Build Alternative would occur. Traffic generated by the Build Alternative would not have an effect on US-101 operating conditions during the peak hours. Therefore, no direct adverse traffic effects would occur along the US-101 mainline for the 2031 Plus Project condition.

US-101 Mainline – 2040 Plus Project

Future operating conditions on the US-101 mainline 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 Plus Project conditions. Traffic generated by the Build Alternative would not have an effect on US-101 operating conditions during the peak hours in 2040. Therefore, no direct adverse effects would occur along the US-101 mainline for the 2040 Plus Project condition.

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Table 3.3-14. Freeway Mainline Level of Service – 2031 Plus Project Condition

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

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
D/C=demand-to-capacity; LOS=level of service; PM=post mile

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Table 3.3-15. Freeway Mainline Level of Service – 2040 Plus Project Condition

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

Source: Link US Traffic Impact Assessment (Appendix E of this EIS)
Notes:
D/C=demand-to-capacity; LOS=level of service; PM=post mile

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Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. New infill development could generate a modest increase in vehicular traffic during construction and throughout operations. However, these other projects would be subject to local government review and would require the preparation of traffic impact studies and implementation of mitigation measures to reduce potential traffic-related impacts consistent with guidelines under CEQA, NEPA, LADOT, and Caltrans. Construction-related staging activities would not encroach into areas outside of the Project footprint. Traffic generated during construction would be managed in accordance with the provisions of Mitigation Measure TR-1 and would cease upon completion of construction. Although Project-related traffic generation during operation of the facility at LAUS would occur, an increase transit trips is also expected, which would offset some of the local Project-related increases in vehicular traffic during operation. Therefore, no indirect adverse effects would occur during construction or operation in 2031 or 2040.

TOPIC 3.3-B	Design of existing roadways and intersections causing increased hazards

No Action Alternative

Under the No Action Alternative, the existing stub-end rail configuration at LAUS would remain in its current configuration and existing operational characteristics at LAUS would remain unchanged. No major changes to the roadway network would occur with exception of background traffic associated with cumulative projects or infill development discussed above and/or projects proposed in the 2020 RTP/SCS. In this context, the No Action Alternative would not create or increase hazards from Project design features. No direct or indirect adverse effect would occur.

Build Alternative

Direct Effects – Construction

Construction activities associated with the Build Alternative would result in temporary construction-related roadway hazards within the Project footprint. As discussed above, existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US-101 would also 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 lane width reductions and night closures are expected to last for 8 to 12 weeks and occur during weekends only. The on- and off-ramps at Commercial Street would also be subject to temporary lane width reductions. As a result of these temporary roadway modifications, short-radius curves and/or short sight distances may occur during construction. This is considered an adverse effect. However, with the

implementation of Mitigation Measure TR-1 (described in Section 3.3.6), which requires the preparation and implementation of a TMP to minimize construction related roadway hazardous conditions, these impacts would be minimized. The TMP requires the construction contractor to coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to minimize detoured traffic volumes, maintain traffic flow to the safest degree feasible, post advance notice signs prior to construction in areas where access to local businesses could be affected, and notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions. Implementation of Mitigation Measure TR-1 would minimize impacts related to roadway hazards during construction and no direct adverse effects would occur during construction.

Direct Effects – Operations

Proposed infrastructure improvements associated with the Build Alternative would not create sharp curves or dangerous intersections. The design for proposed roadway and bridge improvements, run-through track infrastructure over the US-101, safety improvements at North Main Street, and new roadways east of Center Street, are being designed and coordinated with local agencies, including the City's Department of Transportation and Bureau of Engineering, Caltrans, Metrolink, and CHSRA, as applicable.

All proposed 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, no direct adverse effects would occur during operation.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. New infill development is expected to add increased pedestrian and bicycle traffic that would be accommodated by design features of the Build Alternative such as sidewalks, bike lanes, and ADA features. Temporary construction-related detours and lane width reductions that would be managed in accordance with the provisions of Mitigation Measure TR-1 and would cease after completion of construction. Temporary roadway modifications would result in no fundamental change to the design or configuration throughout operations. Therefore, no indirect adverse effects would occur during construction or operation of the Build Alternative under either year 2031 or year 2040.

TOPIC 3.3-C	Emergency access

No Action Alternative

Under the No Action Alternative, no changes to designated disaster routes (Cesar Chavez Avenue and Alameda Street) or designated disaster route freeways (US-101) would occur, nor would there be any construction activities that would otherwise affect emergency access.

Metro would not implement improvements at LAUS to meet current applicable CBC requirements (CBC 2022, as amended) and NFPA performance requirements for egress and safe evacuation (NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2020 edition). As described in Chapter 1.0, Purpose and Need, existing facilities at LAUS do not have adequate operational and passenger capacity to serve future rail transportation needs and are already operating at its maximum capacity. Therefore, as part of the No Action Alternative, capacity constraints would continue to worsen and limit Metro's ability to accommodate for planned increases in regional and intercity rail service and the corresponding increase in passengers through LAUS. This could result in adverse safety conditions by exacerbating current conditions at LAUS without implementation of concourse-related improvements. Operations would continue in business-as-usual conditions and emergency routes and access within the Project footprint would remain in their existing configuration and capacity. This could result in direct or indirect adverse effects because increased crowding could exacerbate existing conditions and affect adequacy of emergency access at LAUS. There is no mitigation to avoid or minimize the effects with exception of implementing the Build Alternative.

Build Alternative

Direct Effects – 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 (Link US *Traffic Impact Assessment,* Appendix E of this EIS).

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. As previously indicated, substantial delays are anticipated at three intersections during construction that 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 result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. However, these potential impacts would be short-term and would cease upon completion of construction. 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 and emergency response. Notwithstanding these circumstances, this is considered an adverse effect. Mitigation Measure TR-1 (described in Section 3.3.6) requires a TMP to be prepared to minimize construction-related vehicular traffic delays that could affect emergency response times. The TMP requires that traffic be rerouted to adjacent streets via clearly marked detours and advance notice be provided to nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events. The TMP also requires the construction contractor to coordinate with LADOT and Caltrans to adjust the signal timing at affected intersections and on- or off-ramps to mitigate detoured traffic volumes, maintain traffic flow to the safest degree feasible, and notify LADOT and Caltrans in advance of street closures, detours, or temporary lane reductions. Implementation of Mitigation Measure TR-1 would minimize construction-related effects on emergency response and access during construction. Therefore, with the implementation of Mitigation Measure TR-1, no direct adverse effects on emergency access or response times would occur during construction.

Direct Effects – Operations

As previously discussed above, increased traffic delay is expected at one intersection within the traffic study area: Intersection #4: Center Street and Commercial Street. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) would minimize the operational traffic delays at Intersection #4 for both the 2031 Plus Project and 2040 Plus Project conditions. Mitigation Measure LU-1 would enhance nonmotorized connectivity, facilitate a pedestrian and bicycle-friendly environment in the Project study area, and encourage the use of alternate modes of transportation, consistent with LADOT Guidelines (LADOT 2016), Metro's Active Transportation Program, and the City's sustainability, smart growth, and GHG reduction objectives. These active transportation improvements would minimize operational impacts during the PM peak hours while also enhancing neighborhood connectivity. Therefore, with the implementation of Mitigation Measure LU-1, no direct traffic-related adverse operational effects would occur for the 2031 Plus Project or 2040 Plus Project conditions.

No major changes to the configuration of local roadways and US-101 would occur that would permanently impede access for emergency responders. Planned internal roadway reconfiguration and associated modifications to fire lanes and access roads would not substantially 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, as would emergency and fire lane access to the eastern side of LAUS. No modifications to the internal access road on the west side of LAUS would occur; therefore, direct access from MWD to Cesar Chavez Avenue via the west internal roadway will remain in its current state. 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. No changes are proposed to identified evacuation routes during operation.

Concourse-related improvements would meet current applicable CBC requirements or NFPA performance requirements for egress and safe evacuation, which could lead to enhanced emergency access. Based on these considerations, no direct adverse effects would occur related to emergency access or response times during operation as a result of the Build Alternative under either year 2031 or year 2040.

Indirect Effects – Construction and Operations

Proposed infrastructure within the Project study area would not alter emergency access or modify existing disaster routes. Any new development project or infill project around LAUS would be subject to local government review and would require the preparation of traffic impact studies and implementation of mitigation measures to reduce potential traffic-related impacts consistent with guidelines under CEQA, NEPA, LADOT, and Caltrans. Construction activities would cause localized impacts on affected roadways for emergency service providers but would be managed in accordance with the provisions of Mitigation Measure TR-1. Construction activities are temporary and would not extend farther in distance from the Project footprint or further in time beyond the end of the construction duration. Therefore, no indirect effects during construction or operation would occur as a result of the Build Alternative under either year 2031 or year 2040.

TOPIC 3.3-D	Public transit, bicycle, or pedestrian facilities

No Action Alternative

Under the No Action Alternative, the existing stub-end rail yard and 28-foot-wide pedestrian passageway at LAUS would remain in their current configurations. There would be no construction activities that would temporarily disrupt regional/intercity rail service or cause decreased performance for rail operators at LAUS. Daily travel patterns for commuters, bicyclists, and pedestrians around LAUS would not be affected by construction activities or temporary roadway detours or closures.

Under the No Action Alternative, Metro would not increase operational capacity at LAUS to accommodate planned growth of regional/intercity rail service or new HSR service in southern California. As a result, the No Action Alternative would constrain Metro's ability to accommodate the forecast increase in transit service and corresponding passenger capacity within the existing facility, as summarized below:

- The stub-end track configuration limits the number of trains that can serve passengers at LAUS during peak hours.
- The size of the existing passenger concourse limits the number of transit passengers that can access trains and circulate through the station.
- The design of the throat at the entrance to the LAUS rail yard affects the number of trains that can enter and leave LAUS during peak hours, and its design is interlinked with the rail yard and concourse.

Therefore, the No Action Alternative would not meet the needs for increased rail capacity in order to accommodate the increasing numbers of rail passengers, provide enhanced passenger circulation and transit connectivity to Metro's bus, subway, and light rail systems, or to accommodate the planned HSR system at LAUS. Therefore, there would be a direct operational adverse effect. No mitigation is proposed to minimize this adverse effect other than implementation of the Build Alternative.

Build Alternative

Direct Effects – Construction

Public Transit

Construction of the lead tracks, elevated rail yard, and associated concourse-related improvements would cause potential schedule delays and increased dwell times at LAUS and could cause a ripple effect at other nearby 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 commuter daily travel patterns may occur for passengers accessing the heavy rail, light-rail, and regional/intercity rail platforms during construction at LAUS. This is considered an adverse effect. With the implementation of Mitigation Measure TR-2 (described in Section 3.3.6), which requires Metro to prepare a MOU with each current rail operator and detailed temporary construction staging plans to outline mutually agreed upon on-time performance goals to be achieved throughout construction, these construction-related impacts would be minimized. Additionally, Mitigation Measure TR-2 would also require that throughout the duration of construction, SCRRA be responsible for monitoring how mutually agreed upon on-time performance is met. With the implementation of Mitigation Measure TR-2, no direct adverse construction-related effects on public transit would occur.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian accessibility 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. 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 an adverse effect. However, with implementation of Mitigation Measure TR-1 (described in Section 3.3.6), which requires the preparation and implementation of a TMP, these impacts would be minimized. As part of the TMP, during planned closures, traffic would be rerouted to adjacent streets via clearly marked detours and notice would 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 will

identify proposed closure schedules and detour routes to maintain safe bicycle and pedestrian access during construction. With the implementation of Mitigation Measure TR-1, no direct adverse construction-related effects on bicyclists and pedestrians would occur.

Direct Effects – Operations

Public Transit

As described in Section 3.2, Land Use and Planning, the Build Alternative is consistent with the plans and policies relative to 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 is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the following:

- 2050 California Transportation Plan: The *2050 California Transportation Plan* vision calls for a transportation system that is safe, resilient, and universally accessible, and that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The proposed capacity enhancements and concourse-related improvements address this vision.
- 2020 RTP/SCS: The core vision of the 2020 RTP/SCS centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investment in transit and complete streets. The Build Alternative would increase capacity at LAUS and indirectly contribute to cumulative benefits for the region, including a regional reduction of GHG emissions and VMT. As described in the 2020 RTP/SCS, the Project would reduce rail travel times across the system and allow one-seat rides to many more destinations. 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 within a high-quality transit area and transit priority area, and the Build Alternative is specifically identified as the number one future transit improvement for the region.
- 2018 California State Rail Plan: The proposed 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.
- 2022 CHSRA Business Plan: The proposed infrastructure improvements accommodate the planned HSR system in alignment with the vision of the *2022 Business Plan*.

These effects are considered beneficial. Considering the importance of the Build Alternative to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, these beneficial effects to public transit would be long-term and regional.

Bicycle and Pedestrian Facilities

Center Street: As part of the Build Alternative, Center Street from Ducommun Street to US-101 would be reconstructed to not preclude infrastructure improvements along this roadway envisioned as part of the Connect US Action Plan. As depicted in Figure 3.3-6, at the intersection of Center Street and Commercial Street, new sidewalks (shown in light grey), bike lanes (shown in green), and pedestrian safety/ADA features (shown in yellow) would be implemented as part of the Build Alternative.

Commercial Street: Commercial Street between Garey Street and Center Street would be modified to accommodate streetscape improvements (street trees/pedestrian lighting and ADA improvements). As required by Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning), a 5-foot-wide Class IV bike lane with a 4-foot striped buffer would be added in both directions of Commercial Street between Alameda Street and Center Street. The portion of Commercial Street east of Center Street would be vacated.

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 increase 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.

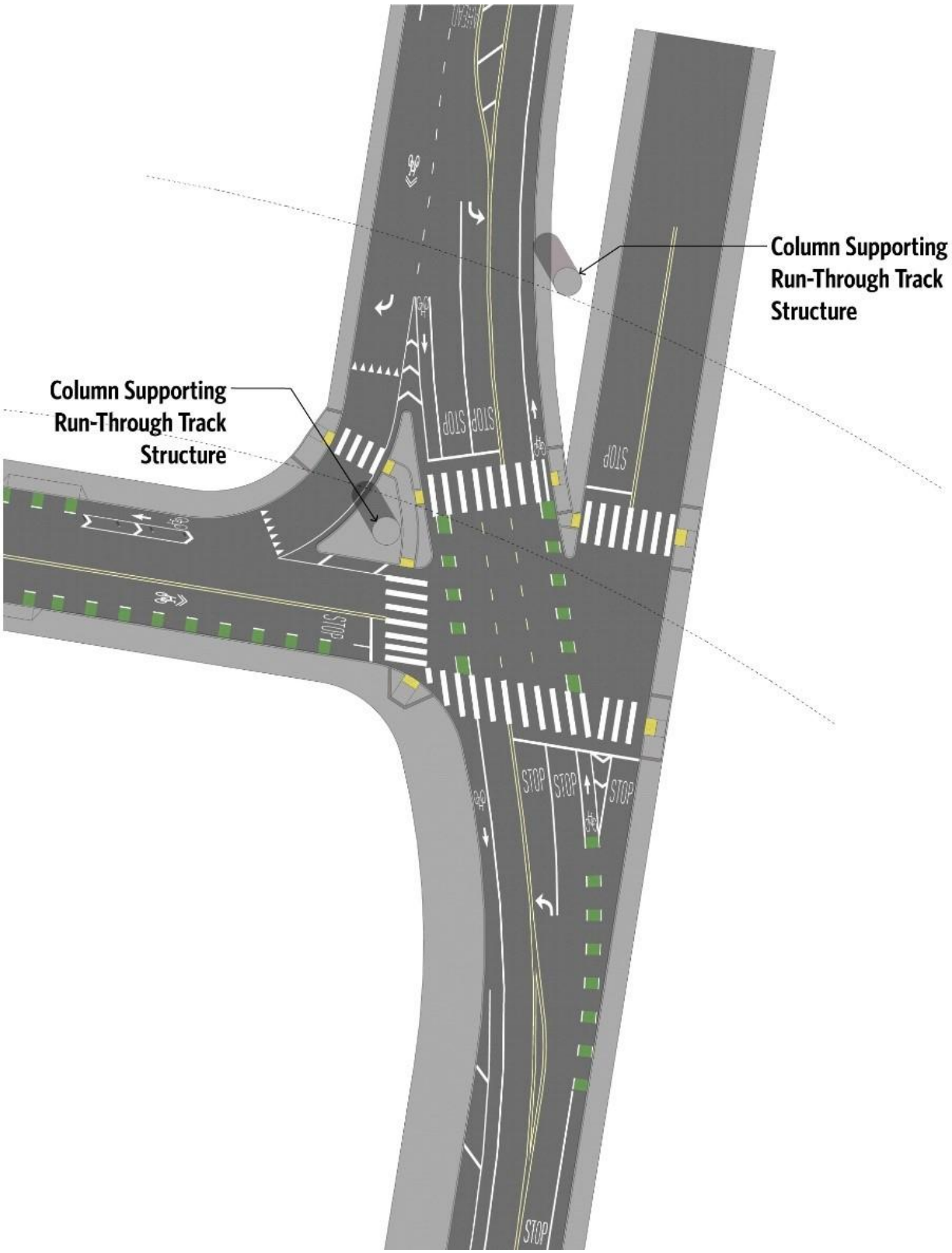
Cesar Chavez Avenue: As part of the reconstruction of the Cesar Chavez Avenue Bridge, the existing street section would be maintained at the current width, although the bridge span would be increased from its existing length of 75 feet to 100 feet to provide the horizontal clearance for future roadway improvements in accordance with the City's Mobility Plan 2035 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:

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

Although Metro is committed to not precluding future active transportation infrastructure as part of other planned or completed projects, including the Connect US Action Plan, the Los Angeles Forecourt and Esplanade Improvements Project, and the LA River Path Project, as described in Section 3.2, Land Use and Planning, the Build Alternative would conflict with the City's Mobility Plan 2035 Policy 2.12. However, 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. Implementation of Mitigation Measure LU-1 would minimize potential impacts on bicycle and pedestrian connectivity between LAUS and neighborhoods surrounding LAUS. Therefore, no direct adverse effects during operation would occur.

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Figure 3.3-6. Center Street/Commercial Street Intersection



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Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. Construction activities from other infill development within the Project study area could cause temporary impacts on sidewalks, bicycle lanes, and other active transportation facilities temporarily during construction activities. 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.

As discussed above, the Build Alternative does not preclude implementation of other projects that would further enhance public transit, or bicycle and pedestrian connectivity including 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.

The Vignes Street Bridge structure and Cesar Chavez Avenue Bridge structure would each be constructed with sufficient width to accommodate future roadway improvements, including future active transportation and enhanced mobility improvements, identified in the City of Los Angeles' *Mobility Plan 2035.* As a result, an indirect beneficial effect would occur during operation.

TOPIC 3.3-E	Freight

No Action Alternative

Under the No Action Alternative, the existing storage tracks at the BNSF West Bank Yard would remain in the current configuration and operations at the north end of the BNSF West Bank Yard would remain unchanged. BNSF would continue to operate on a dedicated lead track at the northern portion of the BNSF West Bank Yard and use the San Bernardino Subdivision to access other nearby yards including Hobart Yard. The BNSF West Bank Yard would continue to be used to store and stage long, continuous intermodal trainsets consisting of empty bare tables. Therefore, no direct or indirect effects would occur.

Build Alternative

Direct Effects – Construction

In the interim condition, construction of the Build Alternative would require removal of the northerly portion of four existing storage tracks at the BNSF West Bank Yard (comprising 5,500 feet of freight storage track capacity) located north and south of First Street (Figure 3.3-7) to facilitate the construction of a new common rail embankment on the west bank of the Los Angeles River. To minimize temporary effects on BNSF's freight rail operations, dedicated lead tracks for Amtrak trains and BNSF freight trains would be constructed upon removal of the storage tracks depicted

in Figure 3.3-7. The dedicated lead track for BNSF trains would be installed in its permanent configuration to facilitate continuous north/south freight rail service and access to the mainline tracks on the west bank of the Los Angeles River so that freight rail operations could be maintained during construction of the proposed infrastructure at the BNSF West Bank Yard and throughout future operations (see Direct Effect - Operations discussion below).

In the full build-out condition, no construction activities would occur at the West Bank Yard because work would be focused on the new lead tracks in the throat segment north of LAUS, and concourse-related improvements at LAUS. Proposed infrastructure would remain unchanged until catenaries would be constructed to facilitate implementation of the planned HSR system within the Project footprint at the BNSF West Bank Yard.

Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard is considered a direct adverse effect. However, the dedicated BNSF lead track (described above) and Mitigation Measure TR-3 (described in Section 3.3.6), would minimize effects on freight rail operations. The following railroad improvements to BNSF's Malabar Yard in the City of Vernon would be implemented as part of Mitigation Measure TR-3:

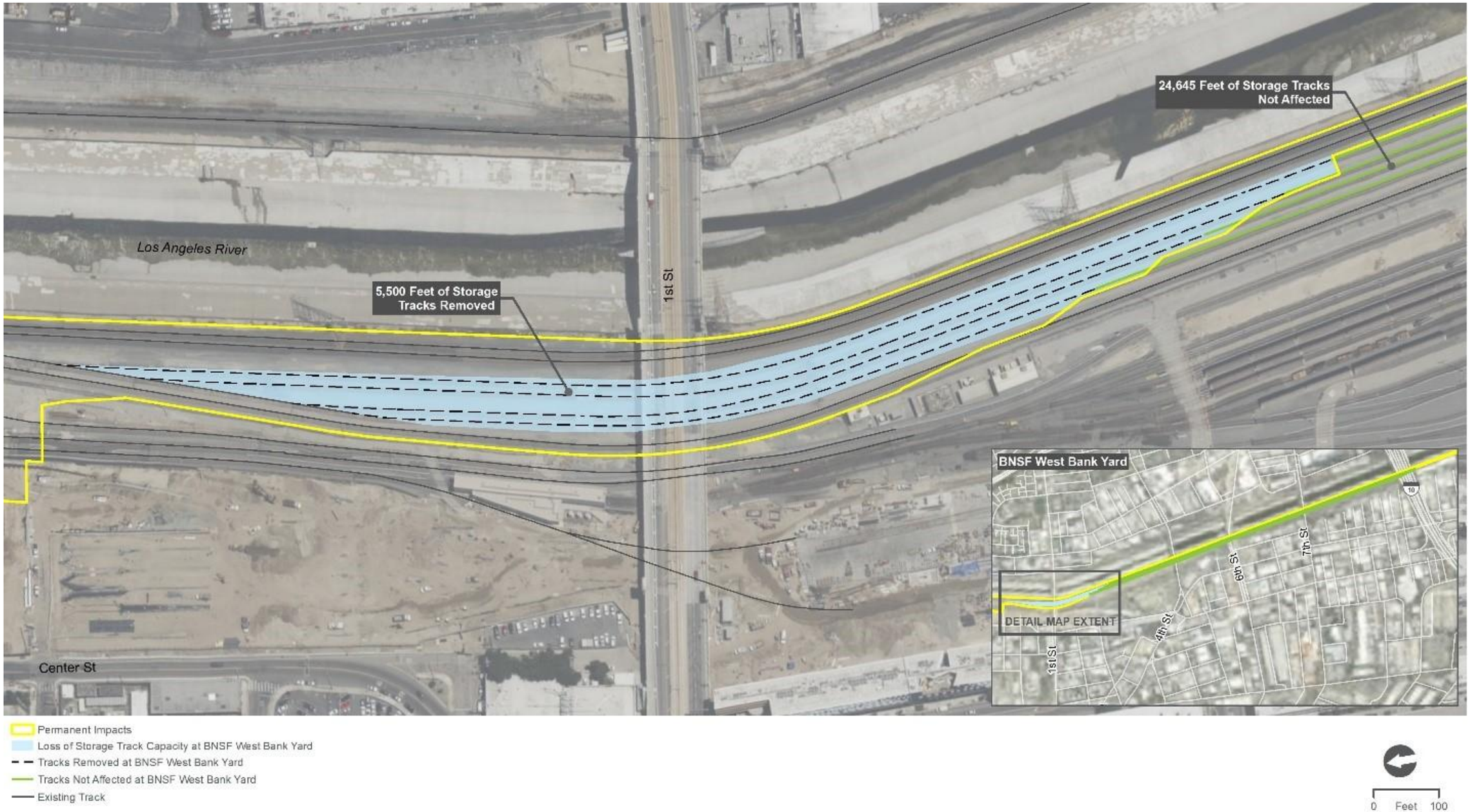
- Closure of an at-grade crossing at 49th Street in the City of Vernon to accommodate 3,350 new track feet of freight storage track capacity that does not exist at BNSF's Malabar Yard; and
- A new 1,000-foot track connection to enable direct freight rail access to and from BNSF's Malabar Yard and Los Angeles Junction, which is currently not available.

A full environmental evaluation of the Malabar Yard railroad improvements (Mitigation Measure TR-3) is provided as an appendix to this EIS. With implementation of the dedicated BNSF lead track and Mitigation Measure TR-3, no direct adverse effect would occur.

Direct Effects – Operations

As discussed above, in the interim condition, implementation of the common rail embankment and dedicated Amtrak and BNSF lead tracks as part of the Build Alternative would result in a permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard (Figure 3.3-7). The reduced storage track capacity would necessitate a double movement along the heavily congested San Bernardino Subdivision to transfer longer intermodal trainsets, which may range up to approximately 8,000 or 9,000 feet long; thereby creating operational inefficiencies. Therefore, an adverse effect would occur.

Figure 3.3-7. Loss of Storage Track Capacity at BNSF West Bank Yard



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BNSF's ongoing use of the West Bank Yard is dynamic and subject to regional and national economic conditions. To provide further information regarding the context of the effect, a freight rail industry professional familiar with the Southern California freight system reviewed and participated in the development of the content contained herein.

- Percentage of West Bank Yard Impacted: The permanent loss of approximately 5,500 feet of freight storage track capacity resulting from removal of the northernmost portion of four storage tracks is equivalent to approximately 18 percent of BNSF's overall track storage capacity at the West Bank Yard (30,145 feet of freight storage track capacity). Approximately 24,645 feet of existing freight storage track capacity at the BNSF West Bank Yard south of First Street (remaining 82 percent) outside of the Project footprint would not be physically altered or removed upon implementation of the Build Alternative and would remain available and functional for BNSF freight rail operations.
- Occupancy Observations of West Bank Yard: 23 aerial images were reviewed for a 10-year duration beginning in August 2012 after the 1st Street Bridge widening was complete and omitting December 2017 through March 2022 when the West Bank Yard was bisected during the 6th Street Bridge construction.

Table 3.3-16 identifies the occupancy observations from 2012 to 2022 in blue. The Table 3.3-16 gold columns show the number of trains that hypothetically would have been necessary in the proposed condition to support the observed train counts and to determine the length of observed storage the proposed layout would have supported.

Table 3.3-16. Occupancy Observations of BNSF West Bank Yard

Date	Observed existing condition		Proposed interim layout condition	
	Train Count	Total Length of Stored Trains	Train Count	Total Length of Proposed Stored Trains
Sep 2022	3	18,300	3	18,300
Mar 2022	1	7,600	2	7,600
Dec 2017	0	0	0	0
Dec 2017	1	6,200	1	6,200
Oct 2017	3	18,100	3	18,100
Jul 2017	1	6,400	1	6,400

Table 3.3-16. Occupancy Observations of BNSF West Bank Yard

Date	Observed existing condition		Proposed interim layout condition	
	Train Count	Total Length of Stored Trains	Train Count	Total Length of Proposed Stored Trains
Apr 2017	2	13,000	3	13,000
Mar 2017	2	13,400	3	13,400
Oct 2016	3	17,900	3	17,900
Feb 2016	3	19,400	4	19,400
Mar 2015	4	25,900	4	24,645
Apr 2014	1	6,100	1	6,100
Aug 2013	2	12,500	2	12,500
Apr 2013	2	12,000	2	12,000
Aug 2012	4	23,700	4	23,700
Total	**32**	**Total 200,500 feet**	**36 (113%)**	**Total 199,245 feet (99%)**

Based upon the observations, implementation of the Build Alternative and the corresponding permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard would require 13 percent more train moves to transport the storage cars from the West Bank Yard (36 train moves versus 32 train moves) in lieu of operating longer trains.

With the implementation of Mitigation Measure TR-3 (summarized above and described in Section 3.3.6), the net loss of freight storage track capacity resulting from the Build Alternative would be

limited to 2,150 track feet[4] and freight rail operations would be enhanced with a new connection between two of BNSF's freight rail yards in the City of Vernon.

Due to the importance of coordinating regional/intercity rail and freight rail operational requirements before, during, and after implementation of the Build Alternative, the timing for implementation of Mitigation Measure TR-3 requires coordination and mutual agreement between Metro and BNSF. Considering the Build Alternative results in removal of only 18 percent of the total freight storage track capacity at the West Bank Yard and acknowledging BNSF would operate on a dedicated lead track to facilitate north/south freight movements during construction and future operation of the Build Alternative (similar to the existing condition), the implementation timeframe for Malabar Yard railroad improvements shall be mutually agreed upon by Metro, CHSRA, City of Vernon, and BNSF. Therefore, with the implementation of Mitigation Measure TR-3, no direct adverse effects would occur during operation.

A complete environmental evaluation of the Malabar Yard railroad improvements required by Mitigation Measure TR-3 is provided in the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS).

Indirect Effects – Construction and Operations

A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard that would occur during construction and remain throughout operations would have the potential to indirectly affect operations at other freight railyards (BNSF Hobart/Commerce Intermodal Yards) by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards. Without mitigation, the reduced storage track capacity would necessitate a double movement to transfer longer intermodal trainsets, which may range up to approximately 8,000 or 9,000 feet long. This would potentially create increased emissions and traffic queuing/delay as freight trains may be required to occupy the San Bernardino Subdivision, shared by passenger and freight trains, for an increased period of time. This is considered an adverse effect. For the reasons described above for direct effects, Mitigation Measure TR-3 (described in Section 3.3.6) would minimize the potential for indirect adverse effects. Currently BNSF uses the heavily congested San Bernardino Subdivision to serve local customers on west and east sides of the City of Vernon. Upon implementation of the Malabar Yard railroad improvements (primarily the 46th Street Connector), BNSF would have a direct path from Los Angeles Junction to Malabar Yard; thereby reducing train movements and associated increased traffic queuing on the San Bernardino Subdivision. Therefore, with the implementation of Mitigation Measure TR-3, no indirect adverse effects would occur during construction or operation of the Build Alternative.

[4] 5,500 track feet removed - 3,350 track feet gained at Malabar yard = net loss of 2,150 track feet. The new 1,000-foot track connection on 46th Street in the City of Vernon does not add freight storage capacity.

3.3.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects related to transportation.

TR-1 **Prepare a Construction TMP:** During the final engineering phase, 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 among the construction contractor, LADOT, Caltrans (if ramps are involved), private businesses, public transit and bus operators, emergency service providers, Los Angeles Unified School District, and residents to minimize construction-related vehicular traffic impacts during the peak-hour. The signal timing at affected intersections and on- or off-ramps shall also be adjusted to reduce detoured traffic volumes and maintain traffic flow to the safest degree feasible. LADOT and Caltrans shall be notified in advance of street closures, detours, or temporary lane reductions. During planned closures, traffic shall be rerouted 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, and to maintain safe bicycle and pedestrian access during construction. 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 will allow the city to alleviate congestion by manually changing

signal timing parameters, such as allowing more green time to congested movements.

- The contractor shall avoid concurrent closures of Cesar Chavez Avenue and Vignes Street north of LAUS.

TR-2 **Prepare Passenger Rail Operations Temporary Construction Staging Plan:** During final engineering design and prior to construction, Metro shall prepare an MOU with each current rail operator, including, but not limited to, SCRRA, LOSSAN, and Amtrak, to outline mutually agreed upon on-time performance goals to be achieved throughout construction, and how construction sequencing and railroad operational protocols shall be incorporated into applicable construction documents (plans and specifications).

Prior to construction, Metro and the construction contractor shall prepare detailed temporary construction staging plans for each phase of construction that the contractor implements to maintain mutually agreed upon on-time performance goals 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 ensure that any rail-to-bus or rail-to-rail connections are uninterrupted throughout construction. Detailed temporary construction staging 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, SCRRA shall monitor on-time performance during construction and participate in weekly construction coordination meetings to ensure that the mutually agreed upon on-time performance is met.

TR-3 **Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street):** Metro shall implement the following:

A. Pursuant to Metro Board Motion 2025-0931, Malabar Yard Mitigations and Continued Collaboration Motion (Oct. 23, 2025), Metro shall collaborate with BNSF to explore potential alternative approaches to rail storage to mitigate NEPA/CEQA significant and adverse environmental impacts caused by the loss of BNSF tracks at the West Bank Yard. Any alternative approach, other than the Malabar Yard Railroad Improvements, must be approved by CHSRA, as NEPA lead agency. This collaboration process includes meeting with BNSF and the City of Vernon (together or separately as appropriate) to seek written commitments from BNSF that may minimize impacts to the City of Vernon.

   As part of Step A above, Metro shall retain an independent railroad consultant to update data and analysis that demonstrates the need for Malabar Yard Railroad Improvements to mitigate the significant environmental effects that would result from the removal of BNSF storage tracks at the West Bank Yard. This independent assessment shall be completed before any implementation of Malabar Yard

improvements. On the basis of this independent assessment, Metro and CHSRA may determine, regardless of BNSF concurrence, whether the Malabar Yard Railroad Improvements continue to be needed as a mitigation.

B. If Metro does not implement the Malabar Yard Railroad Improvements due to Step A above, Metro need not implement the measures in the City of Vernon identified in Table 2 of the Mitigation Monitoring and Reporting Program (MMRP) [Record of Decision Appendix A (MMRP), Table 2 (MMRP Malabar Yard Railroad Improvements)].

If the collaboration between Metro, the City of Vernon, and BNSF under step A or the analysis under Step A, above, do not result in any mitigation approach other than the Malabar Yard Railroad Improvements, then Metro shall implement Design Option 2 for the Malabar Yard Railroad Improvements as follows:

- 49th Street Closure Design Option 2 - Hammerhead Cul-de-Sac: Closure of the 49th Street at-grade railroad crossing would accommodate approximately 3,350 track feet of freight storage capacity at the BNSF Malabar Yard. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard.

- 46th Street Connector Design Option 2 - Northern Alignment: An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction.

The timing for implementation and operation of the Malabar Yard Railroad Improvements shall be before elimination of tracks at the West Bank Yard unless Metro and CHSRA, as NEPA lead agency, mutually find and conclude removing those tracks first would not cause CEQA/NEPA significant and adverse environmental effects. Such a finding must be supported by a written analysis undertaken by Metro and approved by CHSRA for NEPA sufficiency, before the removal of BNSF storage tracks at West Bank Yard.

LU-1 **Enhance Neighborhood Connectivity.** See Section 3.2, Land Use and Planning for details.

3.3.7 NEPA Impact Summary

This section summarizes the effects related to transportation for the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.3-A, no Project-related changes to the roadway network would occur and no short-term increases in construction-related vehicle trips or new operational trips would be added to the roadway network. Some roadway modifications in the traffic study area can be expected from other cumulative projects and infill projects, as well as improvements identified in the 2016 RTP/SCS.

In 2031, all 32 traffic study area intersections operate at LOS D or better, during both AM and PM peak hours, except for the following intersections:

- Intersection #4: Center Street and Commercial Street (LOS F, PM Peak Hour).
- Intersection #15: Vignes Street at Main Street (LOS E, PM Peak Hour).
- Intersection #27: Mission Road and Cesar Chavez Avenue (LOS E, AM Peak Hour).

In 2040, the Connect US Action Plan is assumed to be implemented, in addition to Metro's LAUS Forecourt and Esplanade Improvements Project, which will reduce the number of lanes on Alameda Street from Cesar Chavez Avenue to Arcadia Street/El Monte Busway from three lanes to two lanes. In addition to the lane reductions, Los Angeles Street across from LAUS would be closed and vacated for an exclusive pedestrian plaza, resulting in a combined intersection for entrances and exits. In 2040, all 32 traffic study area intersections are calculated to operate at LOS D or better, during both AM and PM hours, except for the following intersections:

- Intersection #4: Center Street and Commercial Street (LOS F, PM Peak Hour).
- Intersection #9: Alameda Street at El Monte Busway/Arcadia Street (LOS F, AM Peak Hour).
- Intersection #15: Vignes Street at Main Street (LOS E, PM Peak Hour).
- Intersection #27: Mission Road at Cesar Chavez Avenue (LOS E, AM Peak Hour).

Other cumulative projects and associated background traffic would further degrade future traffic conditions without the benefit of offsetting mode shift.

As discussed under Topic 3.3-B, no changes to the stub-end configuration of the rail yard or 28-foot-wide pedestrian passageway would occur and Metro would be unable to accommodate the forecast increase in transit service and corresponding passenger capacity in LAUS. In addition, the No Action Alternative would not accommodate the planned HSR systems at LAUS.

As discussed under Topic 3.3-C, no temporary changes to designated disaster routes (Cesar Chavez Avenue, Alameda Street, or US-101) would occur and no construction activities would affect emergency access during construction. Metro would not implement improvements at LAUS to meet current applicable CBC requirements (CBC 2022, as amended) and NFPA performance requirements for egress and safe evacuation (NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2020 edition).

As discussed under Topic 3.3-D, there would be no construction activities that would temporarily disrupt regional/intercity rail service or cause decreased performance for rail operators at LAUS. Daily travel patterns for commuters, bicyclists, and pedestrians would not be affected by construction activities at LAUS or temporary roadway detours or closures.

As discussed under Topic 3.3-E, existing storage tracks at the BNSF West Bank Yard would remain in the current configuration and operations at the north end of the BNSF West Bank Yard would remain unchanged. BNSF would continue to operate on a dedicated lead track at the northern portion of the BNSF West Bank Yard and use the San Bernardino Subdivision to access other nearby yards. The BNSF West Bank Yard would continue to be used to store and stage long, continuous intermodal trainsets consisting of empty bare tables.

Build Alternative

Table 3.3-17, following this discussion, summarizes NEPA impacts related to the Build Alternative.

As discussed under Topic 3.3-A, the Build Alternative would include traffic-related effects from street closures, lane closures, traffic detours, and additional construction-generated traffic. These effects would occur in the traffic study area and would be temporary and cease upon construction completion. In general, construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #15 and Intersection #27, traffic delays would exceed the 2.5-second delay significance criterion, per LADOT guidelines, and an adverse effect would occur. Mitigation Measure TR-1 requires alternative routes to be implemented that would maintain access and connectivity, road closures and detour routes to be coordinated with LADOT and Caltrans, and for construction traffic routes to avoid heavily congested areas. With implementation of Mitigation Measure TR-1, these construction-related effects would be minimized, and no adverse effect would occur during construction.

As discussed under Topic 3.3-A, during operations, traffic growth is anticipated from the addition of approximately 160,000 square feet of transit-oriented retail space and approximately 30,400 square feet of office/commercial as part of the concourse-related improvements. The Build Alternative would increase traffic delay at Intersection #4 because it would exceed the 2.5-second delay significance criterion, per LADOT guidelines, resulting in an adverse effect. However, with implementation of Mitigation Measure LU-1, new active transportation improvements would enhance nonmotorized connectivity and reduce the demand for single-occupant vehicle trips, thereby minimizing the operational traffic delay impacts. No other intersections or routes would exceed the 2.5-second delay significance criterion and no adverse effects associated with traffic delays during operations would occur with implementation of Mitigation Measure LU-1.

As discussed under Topic 3.3-B, construction activities would create temporary roadway hazards in the Project footprint. These include temporary detours, lane reductions, reduced lane widths, short-radius curves, and short sight distances. This is considered an adverse effect. Implementation of Mitigation Measure TR-1 would minimize these effects by requiring preparation

and implementation of a TMP, which requires coordination with LADOT and Caltrans. Therefore, no adverse effects would occur with implementation of Mitigation Measure TR-1.

As discussed under Topic 3.3-C, construction activities could interfere with emergency response and access. These effects would occur in areas where temporary lane closures and detours are in place, especially at US-101 and Alameda Street. Not all roadway closures and detours would occur at the same time; therefore, the location of effects may shift depending on the construction phase. While this is considered an adverse effect, implementation of Mitigation Measure TR-1 requires a TMP to minimize effects on emergency access. The TMP requires emergency service providers to be provided advanced notice of planned closures. As such, no adverse effect to emergency access would occur. During operations, the West Plaza would be accessible to emergency service providers and no other design feature or internal roadway reconfigurations would adversely affect emergency access or existing disaster routes. Concourse-related improvements would meet current applicable CBC requirements or NFPA performance requirements for egress and safe evacuation, which could lead to enhanced emergency access.

As discussed under Topic 3.3-D, bicycle and pedestrian facilities would be temporarily affected due to reduced access to and from LAUS and increased hazards near construction areas. Construction activities could also temporarily impact public transit by causing 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 commuter daily travel patterns may occur as well as accessibility disruptions to the Gold Line, Red Line, and Purple Line platforms. This is considered an adverse effect. Mitigation Measure TR-1 requires implementation of a TMP and detour routes to be implemented to maintain safe bicycle and pedestrian access during construction. Throughout operation, new sidewalks, bike lanes, and pedestrian safety/ADA features would be implemented on affected roadways as part of the Build Alternative. Mitigation Measure TR-2 requires a MOU with Metro and each current rail operator to outline mutually agreed upon on-time performance goals to be achieved throughout construction, which would avoid or minimize potential for adverse construction-related effects on public transit.

As discussed under Topic 3.3-D, beneficial effects associated with public transit, bicycle, and pedestrian facilities would occur. Mitigation Measure LU-1 requires new active transportation improvements to enhance nonmotorized connectivity south of LAUS, and future active transportation infrastructure as part of Connect US Action Plan, the Los Angeles Forecourt and Esplanade Improvements Project, and the LA River Path Project would not be precluded. Once operational, the Build Alternative would support Metrolink's implementation of the SCORE Program, as well as other planning documents that guide the future growth in rail operations and accommodation of the planned HSR system. Considering the importance of the Build Alternative to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, the beneficial effects to public transit would be long-term and regional.

As discussed under Topic 3.3-E, construction of the common rail embankment and dedicated Amtrak and BNSF lead tracks would result in a permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard. Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF would cause an adverse effect due to the operational inefficiencies when BNSF operates longer trains between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards. With the implementation of the dedicated BNSF lead track (described above) and Mitigation Measure TR-3 (Malabar Yard railroad improvements in the City of Vernon), no adverse effect would occur.

Table 3.3-17. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **LU-1 Enhance Neighborhood Connectivity**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.3-B: Design features or incompatible uses that increase hazards	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.3-C: Emergency access	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)**	*Construction* No Adverse Effect

Table 3.3-17. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)** **TR-2 Prepare Passenger Rail Operations Temporary Construction Staging Plan**	*Construction* No Adverse Effect
	Operations Beneficial Effect (Public Transit) Adverse Effect (Bicycle and Pedestrian Facilities)	*Operations* **LU-1 Enhance Neighborhood Connectivity**	*Operations* Beneficial Effect (Public Transit) No Adverse Effect (Bicycle and Pedestrian Facilities)
	Indirect Beneficial Effect	*Indirect* No mitigation is required	*Indirect* Beneficial Effect
Topic 3.3-E: Freight	*Construction* Adverse Effect	*Construction* **TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**	*Operations* No Adverse Effect

Table 3.3-17. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect Adverse Effect	*Indirect* **TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**	*Indirect* No Adverse Effect

3.4 Visual Quality and Aesthetics

3.4.1 Introduction

This section provides an evaluation of potential effects related to visual quality and aesthetics that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Visual Impact Assessment* (Appendix F of this EIS) and published sources.

3.4.2 Regulatory Framework

Table 3.4-1 identifies and summarizes applicable laws, regulations, and plans relevant to visual quality and aesthetics.

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

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(12),* 64 *Federal Register* 28545-28556 (1999) [1]	The *FRA's Procedures for Considering Environmental Impacts* indicate that an EIS should identify any significant changes likely to occur in the natural environment and the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by USDOT Order 5610.4.
National Historic Preservation Act	Section 106 of the NHPA of 1966 requires that federal agencies take into account the effects of their projects on historic properties included in, or eligible for inclusion in, the National Register of Historic Places. Adverse effects occur when a project "may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Examples of adverse effects include "[i]ntroduction of visual … elements that diminish the integrity of the property's significant historic features," which often includes the larger setting and viewshed.
Section 4(f) of the United States Department of Transportation Act of 1966	Section 4(f) of the USDOT Act of 1966 restricts the "use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites" for federally funded highway projects. The FHWA's regulations for complying with Section 4(f) identified in 23 CFR Part 774 including the coordination requirements detailed in 23 CFR 774.5 were followed for the Project. As part of the VIA, visual impacts on Section 4(f) properties were also identified in coordination with the analysis of Section 4(f) properties.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

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

Law, Regulation, or Plan	Description
Federal Highway Administration Visual Impact Assessment Guidelines for Highway Projects (1988)	In 1981, FHWA developed a set of VIA guidelines to analyze changes to visual quality caused by the development of federally funded highway projects. The FHWA guidelines were influenced by the visual management systems used by the U.S. Forest Service, the Bureau of Land Management, Natural Resources Conservation Service, the Office of Coastal Zone Management, and other federal agencies. In 1988, the FHWA VIA guidelines were updated from the original 1981 guidelines in response to a growing number of alternative methods being used for visual assessments.
Federal Highway Administration Guidelines for the Visual Impact Assessment of Highway Projects (2015)	In January 2015, FHWA released an update to the 1988 VIA guidelines. The 2015 guidance requires a description of a "baseline" and includes provisions for an analysis of scale, form, materials, and overall visual character. One of the key changes in the methodology between the two versions involved the categories used to describe and compare changes in visual quality. The 1988 guidelines utilize "Vividness, Intactness, and Unity" while the 2015 guidelines utilize "Natural Harmony, Cultural Order, and Project Coherence." Because the visual and aesthetic environment of the Project study area remains topographically flat and heavily urbanized, and because the analysis methods and corresponding results would not be appreciably different, the 1988 guidelines were used to determine potential Project-related visual and aesthetic impacts. Analysis using the 1988 guidelines captured similar qualities as the 2015 guidelines would have, only with different descriptors used for some of the baseline setting and analysis results.
State	
Caltrans Scenic Highway Program (1963)	Caltrans oversees the California Scenic Highway Program, which was created in 1963 by California legislature to designate certain portions of the state highway system as state scenic highways for the protection and enhancement of California's natural scenic beauty. The program includes a list of highways that are eligible or have been designated as scenic highways. State Scenic Highways are governed under California Streets and Highways Code, Article 2.5, Sections 260 through 263 and 280 through 284.
Local	
City of Los Angeles General Plan – Framework and Conservation Elements (2001)	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 street 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

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

Law, Regulation, or Plan	Description
	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 streetlights. *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.
City of 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 2 footcandles (21.5 lux) 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 3 footcandles above ambient lighting, as measured at the property line of the nearest residentially zoned property.
City of Los Angeles Cornfield Arroyo Seco Specific Plan (2014)	The Cornfield Arroyo Seco Specific Plan includes requirements applicable to lighting that may be applicable to the Project:

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

Law, Regulation, or Plan	Description
	• 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.
Downtown Community Plan (2023)	The DCP includes the following policies related to visual quality and aesthetics for transit projects included in the Draft DCP: • LU 10.1: Require active ground floors and street frontages that improve walkability and connectivity, especially between transit stations and nearby destinations. • LU 10.6: Require that pedestrian bridges minimize visual impacts, be architecturally integrated into building design, connect with public entrances, incorporate lighting and directional signage, and include maintenance and safety programs. • LU 14.1: Ensure that where new development occurs, it complements the physical qualities and distinct features of existing historic resources. • LU 14.3: Preserve and promote the distinct qualities and features of historically and culturally significant neighborhoods and communities. • LU 17.1: Promote a pedestrian environment that enhances thermal, visual, and audible comfort and provides opportunities for resting and socializing. • LU 21.1: Encourage well-designed, intensive development that contributes to a safe and inviting pedestrian realm and includes substantial benefits that reinforce Downtown's character and enhance livability. • LU 21.2: Foster and reinforce a cohesive, pedestrian-friendly, and inviting streetscapes that promote walking, bicycling, and transit use. Encourage the creative infill of landscaped setbacks and inoperative spaces, such as those resulting from inconsistent street walls. • LU 21.15: Encourage a mix of uses that intensifies and activates Union Station and surrounding neighborhoods. • LU 49.1: Promote Downtown as an attractive home for civic, cultural, and other institutional uses to reinforce the area's identity. • LU 52.5: Locate and design civic, institutional, and cultural buildings, and public spaces, to be easily accessible to pedestrians, cyclists, and transit users. • MC 3.4: Enhance the pedestrian experience between major destinations and transit stations through improved streetscapes and wayfinding programs. • PO 3.3: Require that public spaces are well lit and visible to ensure that they are safe and inviting.

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

Law, Regulation, or Plan	Description
	• PO 4.2: Facilitate the integration of locally produced and community oriented public art projects and cultural programming into public spaces to reinforce community character. 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.
City of Los Angeles Alameda District Specific Plan (1996)	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 mitigation measures for resource topics, including lighting.

Notes:
ADSP=Alameda District Specific Plan; CFR=Code of Federal Regulations; EIS=environmental impact statement; FHWA=Federal Highway Administration; FRA=Federal Railroad Administration; NEPA=National Environmental Protection Act; U.S.=United States; VIA=visual impact assessment

3.4.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Visual character or quality; and/or
- Light or glare.

Geographic Area Considered

The Project study area was used to characterize the affected environment and determine where visual resources and viewers/viewer groups are located. Visual assessment units and key views were used to assess the visual impacts on each of the viewers/viewer groups considered.

Methodology

The findings contained in the Link US *Visual Impact Assessment* are based on guidance outlined in the *Visual Impact Assessment for Highway Projects* (FHWA 1988) and the Caltrans' template, modified as needed for this project type. Although FHWA VIA guidelines were updated in 2015, the 1988 FHWA VIA guidelines were used for this evaluation to maintain consistency with the VIA

conducted for the Link US Final EIR, which included an evaluation of visual impacts following the 1988 guidelines. The 1988 FHWA VIA guidelines were used for the Project based on the following:

- Project type: The Project is a linear transportation project located within and adjacent to an existing railroad ROW.
- Project location and topography: The Project is located in a relatively flat and heavily urbanized area surrounded by existing transportation infrastructure. Additionally, there are no scenic vistas or scenic highways located near the Project study area.
- Consistency with the underlying analysis in the Link US Final EIR: The analysis presented in the Final EIR certified in 2019 is based on the 1988 guidelines. To avoid conflicting analysis, the same methodology was used.

The 2015 guidance describes the initial establishment phase in the VIA process as defining the project's visual character, determining the regulatory context, and defining the area of visual effect. Following this establishment phase, the 2015 guidance includes provisions for assessment of the visual effects using (1) an inventory phase to define the existing status of the affected environment and the affected population and the existing or preferred condition of visual quality and (2) an analysis phase to assess changes to the degree of visual quality as being beneficial or adverse to the relationship viewers have with their visual environment.

Similar to the 2015 guidance, the analysis in this document includes a description of baseline conditions within the affected environment and analyzes the changes in visual quality that would occur with implementation of the Malabar yard railroad improvements (see Section 3.4.4 and Section 3.4.5). For these reasons, and because the analysis method and results would not be appreciably different, the 2015 guidance was not used for this analysis.

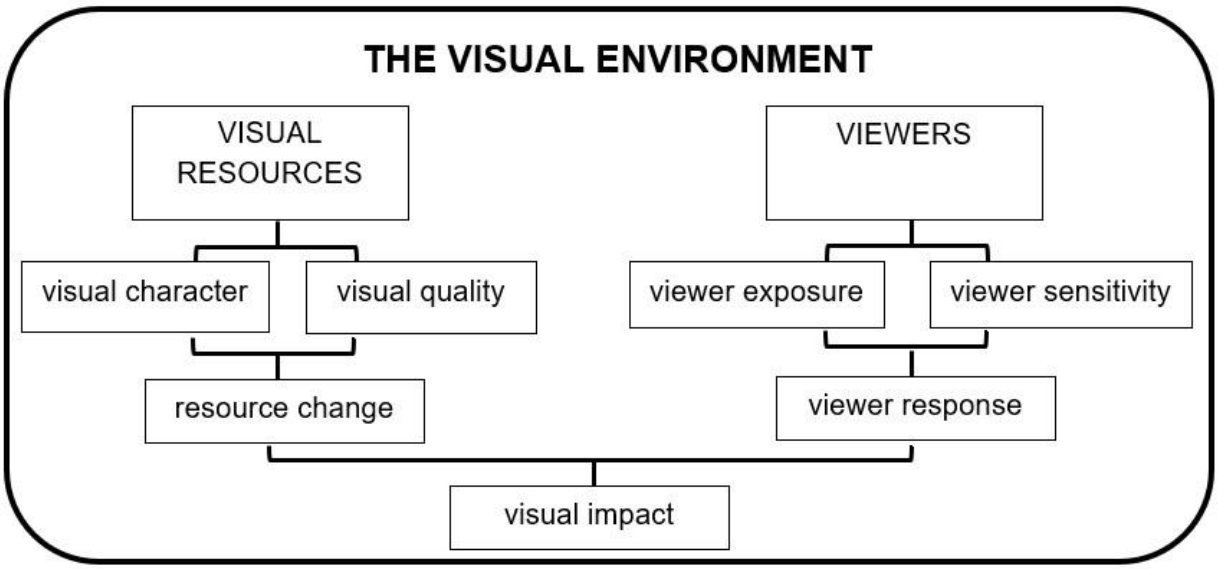
The key changes in the methodology between the 2015 and 1988 guidelines involve the characteristics used to describe and compare changes in visual quality. For instance, the 1988 guidelines use "Vividness, Intactness, and Unity" while the 2015 guidelines use "Natural Harmony, Cultural Order, and Project Coherence". The three criteria are evaluated to assess visual quality of a project area and it is noted that none of the three by themselves is equivalent to visual quality; all three must be high to indicate high quality.

Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns, *intactness* is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements, and *unity* is the visual coherence and compositional harmony of the landscape considered as a whole (FHWA 1988). *Natural harmony, cultural order,* and *project coherence* are determined by viewing the character of the visual resources of the natural environment through the lens of viewer preferences—the greater the degree to which the natural visual resources of the area of visual effect meet the viewer's preferred concept of natural harmony, cultural order, or project coherence, the higher value the viewer places on those visual resources (FHWA 2015). The analysis using the 1988 guidelines captures similar qualities that the 2015 guidelines would, only with different descriptors. The visual

and aesthetic environment of the Project study area remains topographically flat and heavily urbanized and the difference in analysis language between the 1988 and 2015 guidelines would not affect any of the impact conclusions in this EIS.

Following FHWA's 1988 methodology, visual effects are determined by assessing changes to the visual resources and predicting viewer response to those changes. Figure 3.4-1 depicts a generalized visual impact assessment process.

Figure 3.4-1. Federal Highway Administration Visual Impact Assessment Process Concept Diagram



Source: Federal Highway Administration 1988

The following steps were taken to determine potential visual effects:

1. Defining the location and setting;
2. Identifying existing visual resources, viewers, and viewer groups;
3. Identifying visual assessment units and key viewpoints;
4. Assessing resource change and viewer response;
5. Simulating visual appearance of major components at key viewpoints (as deemed necessary given the existing resources or degree of change); and
6. Analyzing context and intensity of visual effects of Proposed Infrastructure.

Defining Project Location and Setting

The setting considers existing landscape constraints (landform and land cover) and the physical limits of human sight as it relates to the location, proximity, and quantity and quality of light of the viewer.

Identifying Existing Visual Resources, Viewers, and Viewer Groups

For the purpose of this evaluation, visual resources correspond to each of the visual assessment units evaluated. Viewers and viewer groups considered include neighbors (residents, business owners/employees, business patrons, etc.) and users (commuters and visitors/tourists).

Visual resources and the associated viewers/viewer groups are described below.

1. William Mead Homes and Care First Village (residents).
2. Vignes Street Corridor (business owners/employees/patrons, commuters, visitors/tourists).
3. Cesar Chavez Avenue Corridor/Mozaic Apartments (residents, business owners/employees/patrons, commuters).
4. Alameda Street Corridor/Father Serra Park (business owners/employees/patrons, commuters, visitors/tourists).
5. Commercial Street/US 101 Corridor (business owners/employees/patrons, commuters, visitors/tourists).
6. LAUS (business owners/employees/patrons, commuters, visitors/tourists).

Identify Visual Assessment Units and Key Viewpoints

The Project study area was divided into a series of visual assessment units defined by geographic features. The visual assessment units are focused on areas that would be subject to the most visually dominant features of the proposed infrastructure in conjunction with land uses, buildings, transportation facilities, etc., in each segment of the Project study area.

Each visual assessment unit has its own visual character and visual quality. Several key views were selected within each visual assessment unit that would most clearly illustrate the resulting change to visual resources, if any. Key views also represent the viewer groups that have the highest potential to be affected by the proposed infrastructure, considering exposure and sensitivity.

Six visual assessment units and 17 key viewpoints or “key views” were identified for this evaluation. The location of key views for each visual assessment unit is described/depicted in detail in the discussion of the affected environment (Section 3.4.4).

Assessing Resource Change and Viewer Response

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources in each of the visual assessment units before, during, and after construction of the Build Alternative. Resource change is one of the two major variables in the equation that determines visual impacts (the other is *viewer response*, discussed below).

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions (viewer exposure and viewer sensitivity). Viewer response is assessed by evaluating the change in viewer exposure and sensitivity.

The overall level of resource change and viewer response was qualitatively assessed by assigning one of five resource change levels: low, moderately low, moderate, moderately high, or high. Table 3.4-2 provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 3.4-2. Visual Impact Using Resource Change and Viewer Response

Resource Change	Viewer Response				
	Low	Moderately Low	Moderate	Moderately High	High
Low	Low	Moderately Low	Moderately Low	Moderate	Moderate
Moderately Low	Moderately Low	Moderately Low	Moderate	Moderate	**Moderately High**
Moderate	Moderately Low	Moderate	Moderate	**Moderately High**	**Moderately High**
Moderately High	Moderate	Moderate	**Moderately High**	**Moderately High**	**High**
High	Moderate	**Moderately High**	**Moderately High**	**High**	**High**

Source: Federal Highway Administration 1981
Notes:
Bold indicates when an adverse effect would occur

Visual Character

Visual character includes attributes such as form, line, color, texture, dominance, scale, diversity, and continuity, and is used for description purposes, not for evaluation purposes. These attributes are described below:

- **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 within the Project study area is described based on existing visual character, viewer groups, and expected community preferences. Community preferences were gathered during the public outreach process when stakeholder feedback was received throughout the environmental process. Visual quality is evaluated by identifying the vividness, intactness, and unity present in the Project study area. The three criteria for evaluating visual quality are described below:

- **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 nontypical visual intrusions.
- **Unity** – the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

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 the 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 sees an object. The longer an object can be kept in view, the more the exposure. High viewer exposure helps predict viewers who would have a response to a visual change such as those viewers that are residents and recreationists. Low viewer exposure exists when few viewers experience a defined view or when viewers such as commuters on a freeway are passing by and not as concerned with the view.

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), described below.

- Activity relates to the pre-occupation of viewers, whether they are doing something else or are engaged in observing their surroundings. The more they are observing their surroundings, the more sensitivity viewers would have to changes in 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 would be more sensitive to visible changes.

High viewer sensitivity, assessed qualitatively, helps predict if viewers would have a high concern for a visual change.

Simulating Visual Appearance of Major Components at Key Viewpoints

To create a visual representation of proposed infrastructure elements, photo-realistic simulations were prepared to help convey what aspects of the existing visual setting would be changed and what would not be changed by the proposed infrastructure elements. Artist renderings were also prepared to depict the elements of the concourse-related improvements.

Analyzing Context and Intensity of Visual Effects of Proposed Infrastructure

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Visual Impacts

Visual impacts (synonymous with effects) can be beneficial or adverse, and would occur when the level of resource change, combined with the level of viewer response, is moderately high or high (Table 3.4-2):

- Beneficial Visual Effect: Beneficial effects would occur if proposed infrastructure either enhances views within a visual assessment unit by improving visual quality or character or results in a positive viewer response.
- Adverse Visual Effect: Adverse effects would occur if proposed infrastructure either diminishes views within a visual assessment unit by degrading visual quality or character or results in a negative viewer response.

Light and Glare Impacts

Light and glare impacts are typically related to the extent of light spill and glare effects on nearby drivers and residential land uses. The light emissions and potential glare from proposed infrastructure improvements, including nighttime construction activities (resource change) are compared to baseline conditions to determine if increases in light or glare would result in undesired exposure or disruption of normal activities (viewer response).

3.4.4 Affected Environment

This section describes the six visual assessment units and 17 key viewpoints, or "key views" used for the evaluation. For each visual assessment unit, a description of the corresponding key views, visual character, and visual quality is provided to characterize the affected environment.

The affected environment can be characterized as an urban, developed area with a heavy presence of transportation and industrial, commercial, and institutional land uses. Night and daytime lighting is present throughout the urban environment, including, pole lights throughout the LAUS campus, streetlights, train lights, and light sources associated with other industrial, commercial, and institutional land uses. Six visual assessment units and 17 key viewpoints or "key views" were identified (Table 3.4-3) for this evaluation. The locations of key views for each visual assessment unit are shown in Figure 3.4-2 and described below. The *Link US Visual Impact Assessment* (Appendix F of this EIS) provides additional details regarding the affected environment for each visual assessment unit.

Table 3.4-3. Los Angeles Union Station – Visual Assessment Units and Key Views for the Project Study Area

Visual Assessment Unit and Viewer Group Represented	Key View Number	Key View Description
#1 – William Mead Homes and Care First Village (Residents)	1a	William Mead Homes (view looking southwest from corner of Bolero Lane/Bloom Street toward railroad ROW)
	1b	William Mead Homes (view looking south from East Elmyra Street toward railroad ROW)
	1c	Care First Village (view looking southeast from East College Street toward railroad ROW)
#2 – Vignes Street Corridor (Business Owners/Employees/Patrons, Commuters, Visitors/Tourists)	2a	Vignes Street (view looking north from road toward bridge)
	2b	Vignes Street (view looking south from road toward bridge)
	3a	Cesar Chavez Avenue (view looking west from road toward bridge)

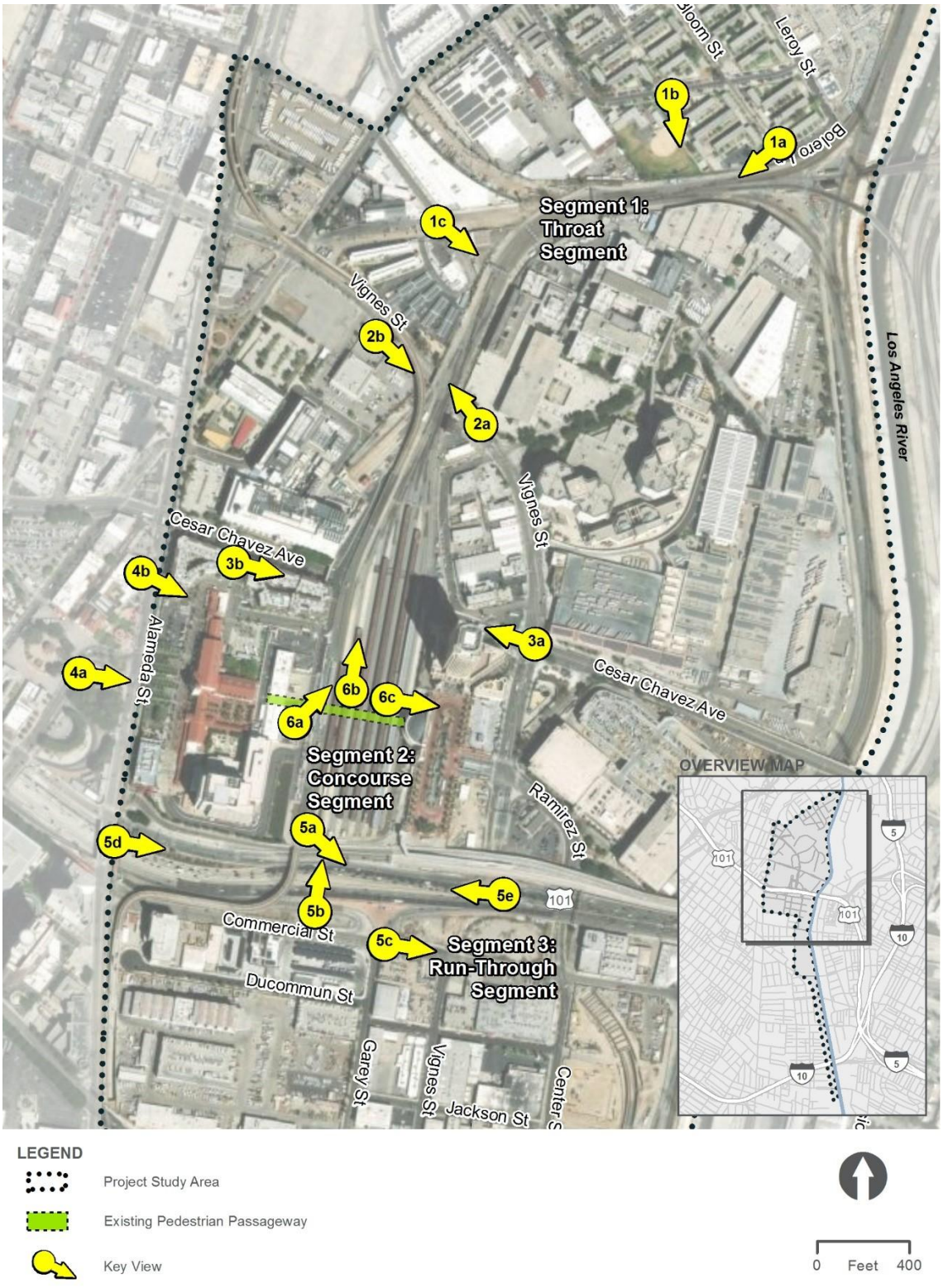
Table 3.4-3. Los Angeles Union Station – Visual Assessment Units and Key Views for the Project Study Area

Visual Assessment Unit and Viewer Group Represented	Key View Number	Key View Description
#3 – Cesar Chavez Avenue Corridor/Mozaic Apartments (Residents, Business Owners/ Employees/Patrons, Commuters)	3b	Cesar Chavez Avenue (view looking east from road toward bridge)
#4 – Alameda Street Corridor/Father Serra Park (Business Owners/Employees, Patrons, Commuters)	4a	LAUS entrance (view looking southeast from Alameda Street toward LAUS)
	4b	LAUS entrance (view looking east from Father Serra Park toward LAUS)
#5 – Commercial Street/US-101 Corridor (Business Owners/Employees/Patrons, Commuters, Visitors/Tourists)	5a	US-101/Commercial Street (view looking southeast from LAUS Southern Platform Limit toward US-101/Commercial Street)
	5b	Commercial Street (view looking north from Commercial Street toward US-101 and LAUS)
	5c	Commercial Street (view looking east from US-101 on-/off-ramps)
	5d	Southbound US-101 (view looking east from Alameda Street toward run-through tracks)
	5e	Northbound US-101 (view looking west from US-101 toward Downtown Los Angeles)
#6 – LAUS (Business Owners/Employees/ Patrons, Commuters, Visitors/Tourists)	6a	LAUS rail yard (view looking northeast toward platform area)
	6b	LAUS platform access (view looking north toward pedestrian ramp)
	6c	LAUS pedestrian passageway (view looking west toward passageway entrance)

Notes:
LAUS=Los Angeles Union Station; ROW=right-of-way

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Figure 3.4-2. Key Views for the Project Study Area



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

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Visual Assessment Unit #1: William Mead Homes and Care First Village

Key Views

Visual Assessment Unit #1 represents residential viewers from within the William Mead Homes residential development and the Care First Village transitional housing complex. Three key views were chosen to determine where visual changes may result from proposed infrastructure.

- Key View #1a is located at the corner of Bolero Lane and Bloom Street, in front of one of the apartment buildings, facing southwest toward the railroad ROW (Figure 3.4-3).
- Key View #1b is located on Elmyra Street, between two of the apartment buildings, facing south toward the railroad ROW (Figure 3.4-4).
- Key View #1c is located north of Care First Village on East College Street, facing southeast toward the railroad ROW (Figure 3.4-5).[2]

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 within William Mead Homes and one vantage point from Care First Village. These vantage points represent views from residents at the rear of these two properties.

Figure 3.4-3. Key View #1a – William Mead Homes
(view looking southwest from corner of Bolero Lane/Bloom Street toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

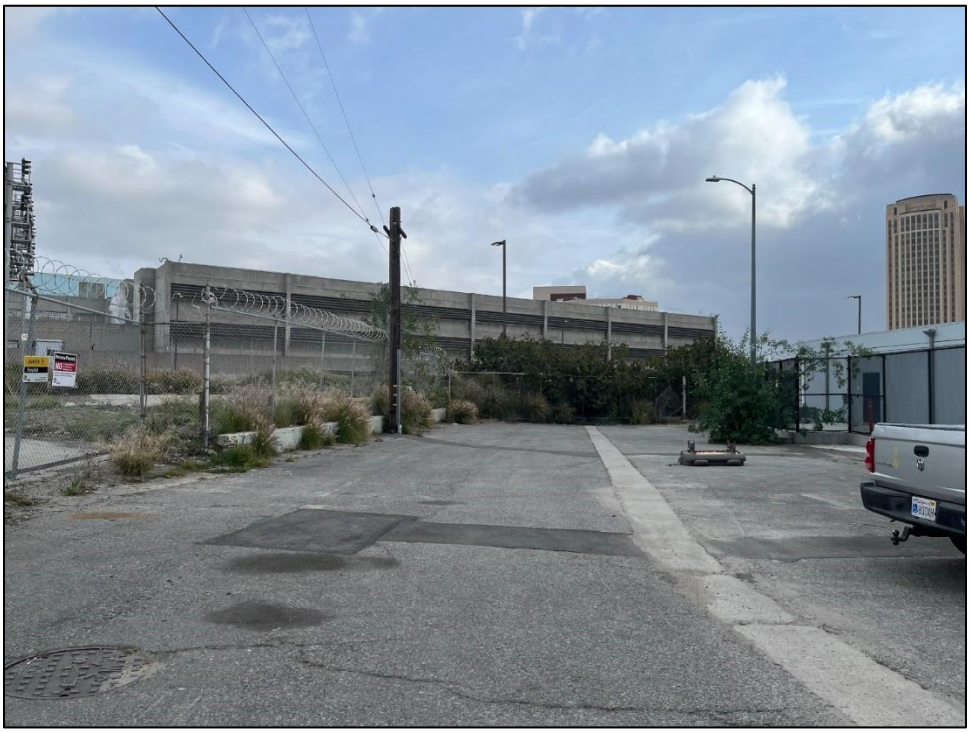
[2] Due to restricted access to the Care First Village transitional housing complex during site visits conducted in February 2023, the closest viewpoint from the property was selected to depict typical views and perform the visual impact evaluation.

Figure 3.4-4. Key View #1b – William Mead Homes
(view looking south from Elmyra Street toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-5. Key View #1c – Care First Village Transitional Housing
(view looking southeast from East College Avenue toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Character

The visual character of Visual Assessment Unit #1 is reflective of high-density residential development within an urban industrial setting. The William Mead Homes residential buildings are rectangular in shape and are brick red with green trim, which represent dominant physical components. The Care First Village buildings are orange with white railings, which add contrast to the industrial area. These buildings provide continuity in form, line, color, texture, dominance, and scale because the buildings on the properties are designed with uniformity and are interspersed at a patterned interval. The surrounding streets, power lines, commercial/industrial buildings, and train tracks are also linear in form. Landscaping surrounding these buildings, including trees, shrubs, lawns, and individual ornamental plantings, add diversity in form, line, color, and texture to the landscape. Within Visual Assessment Unit #1, the buildings are relatively close together, and the streets are narrow, creating a pedestrian-scale environment.

Visual Quality

Table 3.4-4 summarizes the visual quality in Visual Assessment Unit #1.

Table 3.4-4. Visual Quality of Visual Assessment Unit #1 – William Mead Homes and Care First Village

Category	Description	Rating
Vividness	Visual Assessment Unit #1 is visually distinctive in that all of the buildings have a consistent architecture and distinctive colors that contrast with the surrounding development. The physical setting of the residential scale development within the larger Downtown Los Angeles landscape also presents an interesting contrast in scale. However, there are a large number of visual intrusions, including power transmission and local distribution lines, satellite dishes, cluttered balconies, garbage cans, and vehicles, which distract from the overall memorability of the landscape.	Moderately Low
Intactness	Visual Assessment Unit #1 consists entirely of manmade elements. The continuity of the residential buildings and landscaping increase visual integrity. However, there are a large number of visual intrusions, including power lines, satellite dishes, garbage cans, and vehicles, which distract from the views.	Moderately Low
Unity	Visual Assessment Unit #1 consists mainly of geometric residential buildings of similar size with bright color, which create uniform patterns in the landscape. Ornamental plantings within the development, including the geometry of the lawns at William Mead Homes, add to the uniformity of the property. However, power lines, satellite dishes, garbage cans, and vehicles detract from the overall visual coherency.	Moderate
Overall	The consistent architecture and distinctive colors of the buildings are visually memorable and create integrity and uniformity in the landscape. Ornamental landscaping also adds to the uniformity. However, power lines, satellite dishes, garbage cans, and vehicles detract from the overall vividness, intactness, and unity.	Moderately Low

Visual Assessment Unit #2: Vignes Street Corridor

Key Views

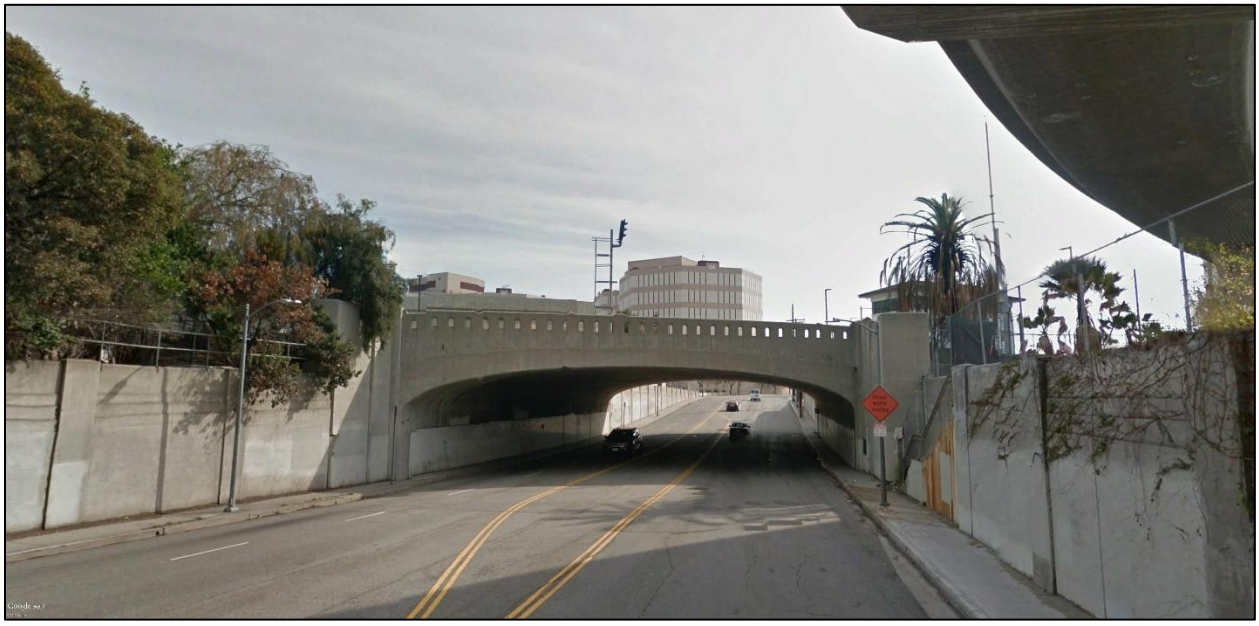
This visual assessment unit represents business owners/employees/patrons, commuters, and visitors/tourists along Vignes Street. Two key views were chosen to illustrate visual changes resulting from the proposed infrastructure (Figure 3.4-6 and Figure 3.4-7). Both key views are of the National Register of Historic Places (NRHP)-eligible 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 3.4-6. Key View #2a – Vignes Street (view looking north from road toward bridge)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-7. Key View #2b – Vignes Street (view looking south from road toward bridge)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Character

Visual Assessment Unit #2 consists of Vignes Street from Bauchet Street to Alameda Street. This roadway segment has 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, and a portion of the Gold Line viaduct is visible. These elements are linear in form, with a heavy presence of concrete and minimal diversity. The concrete bridge and adjacent walls on each side of the roadway are the dominant features with a few trees that extend over the walls from the properties to the north.

Land uses in Visual Assessment Unit #2 along the Vignes Street corridor consist of residential, institutional, and 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, sidewalks, limited vegetation, and the use of retaining walls and fences to define properties.

Visual Quality

Table 3.4-5 summarizes the visual quality in Visual Assessment Unit #2.

Table 3.4-5. Visual Quality of Visual Assessment Unit #2 – Vignes Street Corridor

Category	Description	Rating
Vividness	Within Visual Assessment Unit #2, building architecture, streetscape elements, and the Vignes Street Undercrossing draw the eye and provide visual diversity and interest. The street has a fairly eclectic character. However, high traffic levels on the roadways and pedestrian traffic distract from the overall memorability of the landscape.	Low
Intactness	Visual Assessment Unit #2 consists entirely of manmade elements. The streetscape elements along Vignes Street do not create a sense of an intact consistent visual corridor. There are a number of visual intrusions, including high traffic levels on the roadways, pedestrian traffic, utilities, and signs, which distract from the views.	Low
Unity	Within Visual Assessment Unit #2, the streetscape along Vignes Street does not create uniform patterns within the landscape. The streetscape design varies throughout the entire corridor because of a diversity of uses, scale, materials, and streetscapes. The architecture styles and streetscape reduce the overall coherence of the visual patterns.	Low
Overall	Streetscape elements, architecture, and views within Visual Assessment Unit #2 are urban with generally obscured distant views. The heavy presence of concrete along the roadway does not contribute to visual integrity. In addition, the lack of visual diversity further reduces overall vividness, intactness, and unity, thereby reducing overall visual quality.	Low

Visual Assessment Unit #3: Cesar Chavez Avenue Corridor/Mozaic Apartments

Key Views

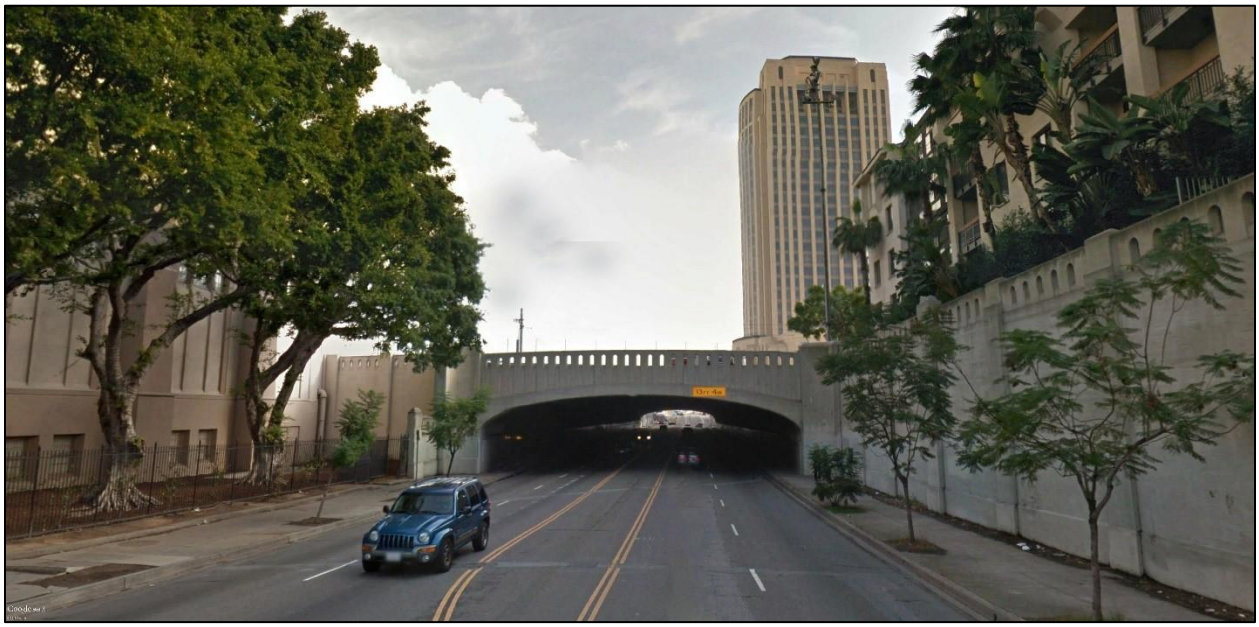
This visual assessment unit represents residential viewers, business owners/employees/patrons, commuters, and visitors/tourists along Cesar Chavez Avenue, near the Mozaic Apartments and Metro Headquarters. Two key views were chosen to illustrate visual changes resulting from the proposed infrastructure (Figure 3.4-8 and Figure 3.4-9). 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.

Figure 3.4-8. Key View #3a – Cesar Chavez Avenue
(view looking west from road toward bridge)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-9. Key View #3b – Cesar Chavez Avenue
(view looking east from road toward bridge)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

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 Metro Headquarters at LAUS, Mozaic Apartments, the historic U.S. Post Office Terminal Annex, and institutional uses. Adjacent to the Mozaic Apartments is a large retaining wall with a sidewalk and street trees, and adjacent to the U.S. Post Office Terminal Annex are large trees, a fence with a sidewalk and street trees. On Cesar Chavez Avenue, there are two travel lanes with a bicycle lane in each direction, but the roadway width is reduced approaching the bridge, with no bicycle lanes on either side of the street under the bridge. Under the bridge, the sidewalk width is further narrowed. Two different styles of street lighting are located on the north and south sides of the roadway east of the bridge, whereas a consistent style of street lighting is west of the bridge.

On the north side of the roadway corridor and east of the bridge, the retaining wall is consistent in form, color, texture, and scale with minimal diversity. The Metro Headquarters building with a light brown color is the dominant feature east of the bridge and has a greater mass and scale than the rest of surrounding visual setting. East of the bridge, the Mozaic Apartments and U.S. Post Office Terminal Annex Building are consistent in scale and height, although vary in texture and diversity, mainly due to the historic aspects of the U.S. Post Office Terminal Annex building.

Visual Quality

Table 3.4-6 summarizes the visual quality in Visual Assessment Unit #3.

Table 3.4-6. Visual Quality of Visual Assessment Unit #3 – Cesar Chavez Avenue Corridor/Mozaic Apartments

Category	Description	Rating
Vividness	Within Visual Assessment Unit #3, building architecture, streetscape elements, the Cesar Chavez Avenue Bridge, and Alameda Street draw the eye and provide visual diversity and interest. East of the Cesar Chavez Avenue Bridge, the character changes with a switch to governmental uses and extensive use of retaining walls and concrete. Views of downtown (facing south at Alameda Street) and hills (facing west) add visual interest. However, high traffic levels on the roadways and pedestrian traffic distract from the overall memorability of the landscape.	Moderate
Intactness	Visual Assessment Unit #3 consists entirely of manmade elements. The streetscape elements along portions of Cesar Chavez Avenue have a visual intactness on each side of the Cesar Chavez Avenue Bridge, but of different character on each side. There are a number of visual intrusions, including high traffic levels on the roadways, pedestrian traffic, utilities, and signs, which distract from the views.	Moderate
Unity	Within Visual Assessment Unit #3, the streetscape along portions of Cesar Chavez Avenue creates a uniform pattern within the landscape on each side of the Cesar Chavez Avenue Bridge. The streetscape design has different continuity on each side of the bridge; however, the diversity of architectural styles is complemented by an urban form and building placements, which provide consistency of the visual pattern.	Moderate

Table 3.4-6. Visual Quality of Visual Assessment Unit #3 – Cesar Chavez Avenue Corridor/Mozaic Apartments		
Category	**Description**	**Rating**
Overall	Streetscape elements (street trees and lighting), architecture, and views of the Metro Headquarters, Mozaic Apartments, and U.S. Post Office Terminal Annex within Visual Assessment Unit #3 have a vibrant urban appeal. Streetscape elements also provide visual integrity and uniform patterns in the landscape, which lend to intactness in the overall setting.	Moderate

Visual Assessment Unit #4: Alameda Street Corridor/Father Serra Park

Key Views

This visual assessment unit represents business owners/employees/patrons, commuters, and visitors/tourists across Alameda Street from the historic LAUS entrance. Two key views were chosen to illustrate visual changes of the proposed action (Figure 3.4-10 and Figure 3.4-11). 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 concourse-related improvements and proposed canopies.

Figure 3.4-10. Key View #4a – Los Angeles Union Station Entrance (view looking southeast from Alameda Street toward LAUS)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-11. Key View #4b – LAUS Entrance
(view looking east from Father Serra Park toward LAUS)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Character

Visual Assessment Unit #4 consists of Alameda Street between Cesar Chavez Avenue and US-101. For this portion of Alameda Street, Alameda Street is three travel lanes in each direction. Land uses in Visual Assessment Unit #4 consist of commercial businesses, retail shops, offices, and warehouses; Father Serra Park; and 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. LAUS interfaces directly with this highly active pedestrian area, which represents the most critical viewshed of the analysis due to the historic context of the LAUS façade facing Alameda Street.

LAUS is the dominant feature in the landscape and offers a distinct form, color, texture, and scale to the surrounding environment due to its historic architecture. 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 that provide unity and continuity in line and color and minimal diversity. The MWD building in the background has variation and adds diversity to the setting of LAUS in terms of form, color, texture, and continuity.

Visual Quality

Table 3.4-7 summarizes the visual quality in Visual Assessment Unit #4.

Table 3.4-7. Visual Quality of Visual Assessment Unit #4 – Alameda Street Corridor/ Father Serra Park

Category	Description	Rating
Vividness	Visual Assessment Unit #4 is framed by the large scale of the buildings in Downtown Los Angeles and US-101 on the south, and hills to the north. The eye is drawn by the historic LAUS entrance and associated buildings, Father Serra Park and all of its components, and associated activities on the west. Beyond El Pueblo is Chinatown and old Little Italy. These features are visually memorable. However, a high level of traffic on the roadways and high pedestrian traffic are distractions. Variability in visual pattern with many distinctive architectural features and destination spots adds to the overall memorability of the landscape.	Moderately High
Intactness	Visual Assessment Unit #4 consists entirely of manmade elements. The views of LAUS are dominant, while the park area garners attention due to the high activity level. The integrating features in the landscape include tall palm trees on both sides of the corridor. The visual intrusions of this assessment unit include high traffic levels, pedestrian disruptions, and utilities, which distract from the views.	Moderately High
Unity	Within Visual Assessment Unit #4, LAUS, Father Serra Park, and Olvera Street are visually dominant. Though eclectic, the area is unified as a tourist, commuter, and worker hub. There is a clear sense of arrival and place along Alameda Street.	Moderately High
Overall	Visual Assessment Unit #4 is a vivid area with very distinctive memorable features. The unity of the of the historical features and architecture create a high sense of unity with a clear sense of place and arrival. It has unifying features with varying architectural style and ages. The variability in visual elements and patterns does not seem to reduce the overall vividness, intactness, and unity of the views because LAUS has a distinct identity.	Moderately High

Notes:
LAUS=Los Angeles Union Station; US-101=United States Highway 101

Visual Assessment Unit #5: Commercial Street /US-101 Corridor

Key Views

Visual Assessment Unit #5 represents business owners/employees/patrons, commuters, and visitors/tourists from US-101 and the Commercial Street corridor. Five key views were chosen to illustrate visual changes of the proposed infrastructure (Figure 3.4-12 through Figure 3.4-16).

- 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.

- Key View #5d is from the Alameda Street Bridge looking east toward the Gold Line viaduct over US-101.
- Key View #5e is from US-101 looking toward downtown Los Angeles.

These key views were chosen to illustrate views of the run-through track structures located south of LAUS. Key View #5b was also chosen to illustrate views of the elevated rail yard and concourse-related improvements, including the proposed canopies that would be visible from south of LAUS.

Figure 3.4-12. Key View #5a – US-101/Commercial Street (view looking southeast from LAUS southern platform limit toward US-101/Commercial Street)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-13. Key View #5b – Commercial Street
(view looking north from Commercial Street toward US-101 and LAUS)



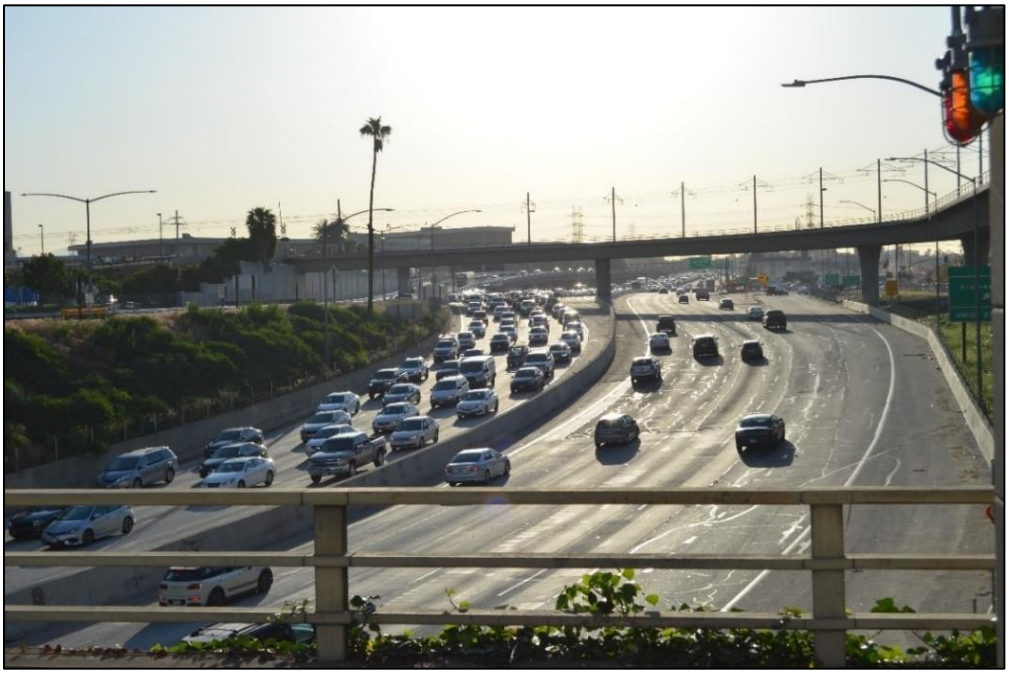
Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-14. Key View #5c – Commercial Street
(view looking east from US-101 on-/off-ramps)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-15. Key View #5d – Southbound US-101
(view looking east from Alameda Street)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-16. Key View #5e – Northbound US-101
(view looking west toward Downtown Los Angeles)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Character

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 in 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 Los Angeles 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 grander-scale environment. There are no scenic highways, residential land uses, or other sensitive land uses in this visual assessment unit.

Visual Quality

Table 3.4-8 summarizes the visual quality in Visual Assessment Unit #5.

Table 3.4-8. Visual Quality of Visual Assessment Unit #5 – Commercial Street/ US-101 Corridor

Category	Description	Rating
Vividness	Within Visual Assessment Unit #5, visual elements are scattered and spread away from the roadway corridor. The absence of distinctive features and variability in visual patterns detracts from the memorability of the landscape.	Low
Intactness	Visual Assessment Unit #5 consists entirely of manmade elements. There are no integrating features and there are many visual intrusions, including power lines, light poles, and traffic signs, which distract from views.	Low
Unity	Within Visual Assessment Unit #5, there is a high variability in visual elements and no unifying patterns in the landscape.	Low
Overall	Visual elements in Visual Assessment Unit #5, including the industrial and commercial buildings and vacant lots are scattered, and the variability in visual elements and patterns and visual intrusions of transportation and overhead utility infrastructure reduce the overall vividness, intactness, and unity of the views.	Low

Visual Assessment Unit #6: Los Angeles Union Station

Key Views

This visual assessment unit represents station users, business owners/employees/patrons, commuters, and visitors/tourists at LAUS. 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 3.4-17, Figure 3.4-18, and Figure 3.4-19). Key View #6a is from the parking

lot between the baggage handling building and the Gold Line (LAUS Rail Yard Platform 1), 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 3.4-17. Key View #6a – LAUS Rail Yard
(view looking northeast toward platform area)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-18. Key View #6b – LAUS Platform Access
(view looking north from passageway toward pedestrian ramp)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-19. Key View #6c – LAUS Pedestrian Passageway
(view looking west from passageway toward passageway entrance)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Character

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 was listed in the NRHP in 1980. This 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 platforms, canopies, railroad tracks, overhead lines, and trains are the dominant physical components in this 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, it is pedestrian-scale, highlighted by the larger scale of the surrounding buildings.

Visual Quality

Table 3.4-9 summarizes the visual quality in Visual Assessment Unit #6.

Table 3.4-9. Visual Quality of Visual Assessment Unit #6 – Los Angeles Union Station

Category	Description	Rating
Vividness	Within Visual Assessment Unit #6, the historic station architecture, landscaping, and the scale of the platforms are visually notable and memorable. The design of the Patsaouras Transit Plaza is also visually distinctive. However, the variability in visual pattern surrounding the platforms and station detracts slightly from the memorability of the landscape.	Moderately High
Intactness	Visual Assessment Unit #6 consists entirely of manmade elements. The architectural and streetscape elements increase visual integrity. However, there are some visual intrusions, including traffic, which distract slightly from the views.	Moderate
Unity	Within Visual Assessment Unit #6, the architectural and streetscape elements at the historic station area and Patsaouras Transit Plaza are unifying features. However, the streetscape is not uniform throughout the entire station and there is a high level of visual diversity in both structures and landscaping that reduces the overall visual coherence.	Moderate
Overall	Streetscape elements in Visual Assessment #6 are visually appealing, provide increased visual integrity, and are unifying features. However, visual diversity within the station and visual intrusions reduce the overall vividness, intactness, and unity.	Moderate – Moderately High

3.4.5 Environmental Consequences

TOPIC 3.4-A	Visual character or quality

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. There would be no construction activities that would result in viewer exposure to construction staging areas and equipment. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could incrementally result in impacts on viewers, visual character, and visual quality depending on the proposed project type, materials used for construction, and orientation to viewer groups. These effects could be beneficial or adverse, and the context and intensity of effects would vary based on the location of other proposed developments and extent to which they diminish or improve visual quality. Maintenance activities in the railroad ROW or within vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements.

Build Alternative

Direct Effects – Construction

In the interim condition, no construction activities would occur within Visual Assessment Units #1, #2, #3, or #4. Within Visual Assessment Unit #5, construction activities would occur south of LAUS and in staging areas along Commercial Street. Within Visual Assessment Unit #6, construction of a run-through track ramp and associated platform improvements would occur on Platform 4 in the rail yard. Construction activities, vehicles, equipment, and machinery use would be visible from business owners/employees/patrons, commuters, and visitors/tourists, primarily from views south of LAUS. Depending on the viewers location, viewers could be exposed to construction staging areas and equipment, which would add industrial elements to an already highly urbanized Project area. Viewer groups located along the highly urbanized highway and railroad corridor are likely to be accustomed to seeing construction vehicles and equipment within the Project study area because of existing roadway improvement projects and ongoing rail maintenance activities. Construction sites and staging areas would also be screened from the public as contractors would include fencing, tarp, and/or wood boarding to provide additional visual protection to minimize exposure to viewer groups in the area. The overall visual quality rating of Visual Assessment Unit #5 is low based on the variability in visual elements and patterns and visual intrusions of transportation and overhead utility infrastructure reducing the overall vividness, intactness, and unity of the views (Table 3.4-8). Therefore, the construction activities that would occur south of LAUS and the staging areas along Commercial Street would not substantially change the visual quality from existing conditions as the area is already industrial and highly urbanized.

The overall visual quality rating of the Visual Assessment Unit #6 is moderate – moderately high based on streetscape elements related to vividness and unity (Table 3.4-9). However, visual diversity within the station and existing visual intrusions reduce the overall vividness, intactness, and unity. Construction activities that would be visible from Visual Assessment Unit #6 would be similar to common rail maintenance and roadway projects that commonly exist in this area. The change in visual quality would not be substantial to viewers in this visual assessment unit (e.g., station users, business owners/employees/patrons, commuters, and visitors/tourists at LAUS).

In the full build-out condition, construction of new lead tracks, the elevated throat and rail yard, and concourse-related improvements including the East and West Plazas would occur. Construction, vehicles, equipment, and machinery use would be visible within all Visual Assessment Units #1 through #6, from travelers on US-101 and other local roadways, and from surrounding land uses, including William Mead Homes, Care First Village, Mozaic Apartments, and Father Serra Park. Vehicles and equipment would be contained within the Project footprint; however, some construction areas would be adjacent to residential buildings and industrial and commercial land uses. Construction activities would also extend into the road during replacement of the new Vignes Street Bridge and Cesar Chavez Avenue Bridge abutments and related track and civil work in the throat segment and for the elevated rail yard. Effects related to viewer response would be of short duration with minimal construction-related impacts on visual quality because construction activities, vehicles, equipment, and machinery would no longer be visible to viewer groups (business owners/employees/patrons, commuters, visitors/tourists, and residents) after construction is complete, and all staging areas would be restored to pre-Project conditions or used for proposed infrastructure.

In addition, as previously described above, viewer groups located along the highly urbanized highway and railroad corridor are likely to be accustomed to seeing construction vehicles and equipment within the Project study area because of existing roadway improvement projects and ongoing rail maintenance activities. Therefore, visual changes would not be substantial for the viewer groups of the visual assessment units for the Project. No direct adverse effect would occur.

Direct Effects – Operations

The visual effects of the proposed infrastructure improvements associated with the Build Alternative are evaluated in the context of Visual Assessment Units #1 through #6 and each of the Key Views discussed below and depicted in Figure 3.4-20. A summary of the resource change and viewer response considered to determine potential visual effects during operation for each of the visual assessment units is summarized in Table 3.4-10 and discussed below.

Visual Assessment Unit #1 (William Mead Homes and Care First Village)

The Build Alternative would cause a resource change at Key Views #1a and #1b (William Mead Homes) and #1c (Care First Village). The resource change at Key View #1a and #1b would consist of a retaining wall to support new lead tracks and a sound wall that would be up to 22 feet in height extending alongside the rear of the property. The resource change at Key View #1c (Care

First Village) would consist of the elevated throat tracks and retaining wall with a 13-foot sound wall between Care First Village and the adjacent tracks.

Direct effects on Key Views #1a, #1b, and #1c would cause a resource change because the retaining and sound walls would change the visual character and quality by introducing new linear infrastructure elements that would expose residential viewer groups to a dominant feature substantially larger in form and scale than any of the current surroundings within the residential communities; thereby resulting in a moderately high resource change.

Viewer response would be high for residents at William Mead Homes and Care First Village because exposure to visual changes from the retaining and sound walls would be permanent and substantially different than existing views. Some viewers, depending upon their residential unit, would see proposed infrastructure when arriving at and leaving their residential unit and may have views of proposed infrastructure elements from inside their residential units. As shown in Table 3.4-10, a moderately high level of resource change combined with a high level of viewer response would result in a high visual impact, which correlates to an adverse effect during operation.

Mitigation Measure AES-1 (described in Section 3.4.6) requires Metro to design the retaining wall/sound wall in consideration of the scale and architectural style of the adjacent William Mead Homes and Care First Village. As part of Mitigation Measure AES-1, Metro will be required to coordinate with the Housing Authority for the City of Los Angeles (HACLA) regarding aesthetic enhancements to the retaining wall/sound wall at William Mead Homes. Materials, color, murals, landscaping, and/or other aesthetic treatments would be integrated into the design of the retaining wall/sound wall to minimize the dominance and scale of the retaining wall/sound wall. Implementation of Mitigation Measure AES-1 would minimize adverse effects of the Build Alternative in Visual Assessment Unit #1 by improving the overall visual quality at the rear of the William Mead Home and Care First Village properties. Upon implementation of Mitigation Measure AES-1, no direct adverse effect would occur in Visual Assessment #1.

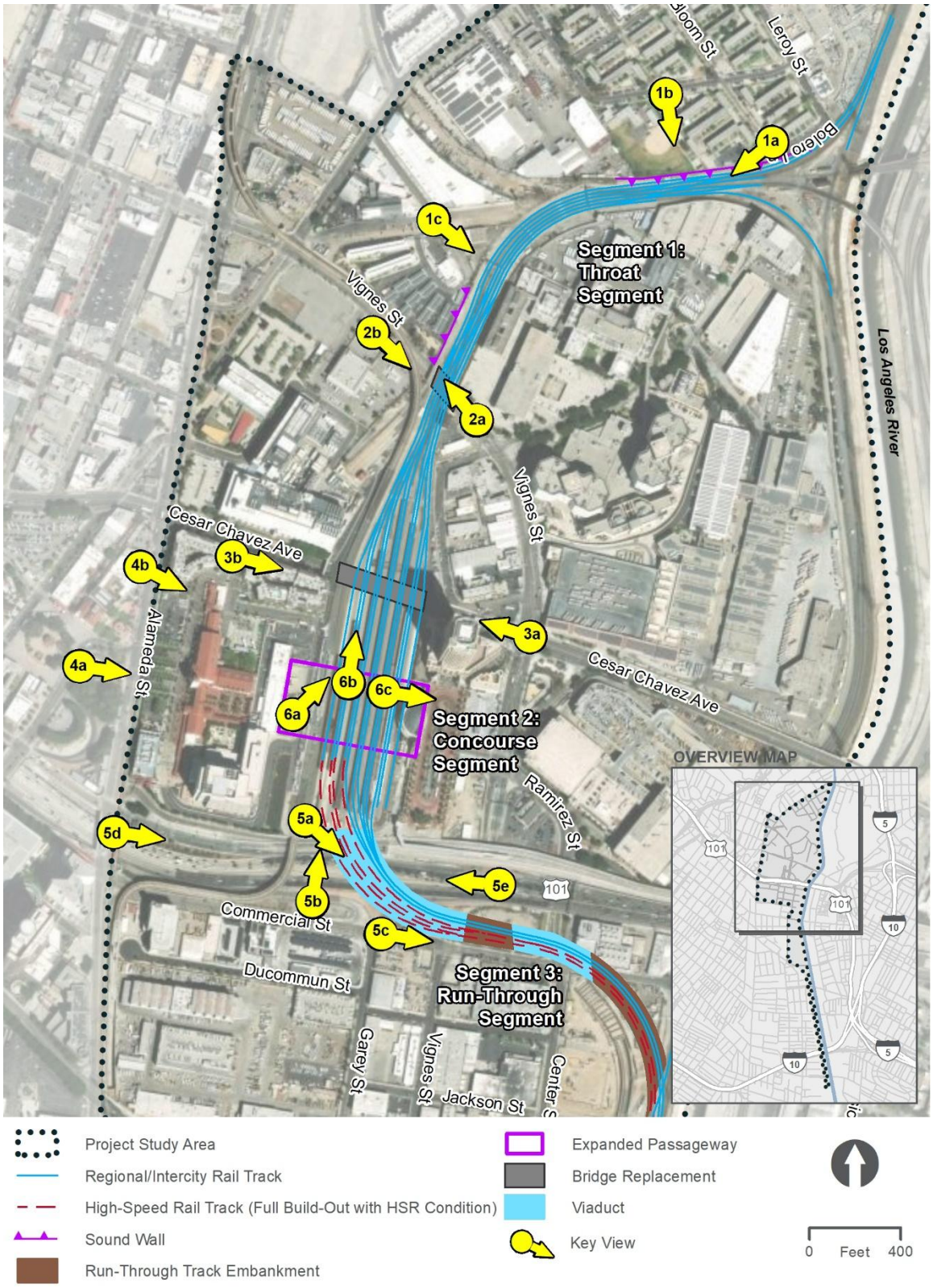
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Table 3.4-10. Summary of Resource Change, Viewer Response, Impacts, and Effects Determinations

Visual Assessment Unit	Viewer Group Represented	Resource Change	Viewer Response	Visual Impact	Effect Determination
#1 – William Mead Homes and Care First Village	Residents – William Mead Homes	Moderately High	High	High	**Adverse**
	Residents – Care First Village		High	High	**Adverse**
#2 – Vignes Street Corridor	Business Owners/Employees/Patrons and Visitors/Tourists	Low	Low	Low	Not Adverse
	Commuters		Moderate	Moderately Low	Not Adverse
#3 – Cesar Chavez Avenue Corridor/ Mozaic Apartments	Business Owners/Employees/Patrons	Moderate	Low	Low	Not Adverse
	Commuters		Moderate	Moderately Low	Not Adverse
	Residents – Mozaic Apartments		Moderately High	Moderately High	**Adverse**
#4 – Alameda Street Corridor/Father Serra Park	Residents, Business Owners/Employees/ Patrons, Commuters, Visitors/Tourists	None	Moderately High	Moderate	Not Adverse
#5 – Commercial Street/US-101 Corridor	Business Owners/Employees/Patrons	Low	Moderately High	Moderate	Not Adverse
	Commuters and Visitors/Tourists		Moderately Low	Moderately Low	Not Adverse
#6 – LAUS (Business Owners/ Employees/Patrons, Commuters, Visitors/Tourists)	Business Owners/Employees/Patrons, Visitors/Tourists, Commuters	Moderately High	Moderately High	Moderately High	**Beneficial**

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Figure 3.4-20. Key Views and Proposed Infrastructure Improvements



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Figure 3.4-21 through Figure 3.4-25 depict Key Views #1a and #1b in the existing and proposed conditions with a new retaining wall and 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 changes resulting from a new retaining wall and sound wall at these locations. Potential visual effects at Care First Village would be similar to the post-project conditions depicted in Figure 3.4-22.

Figure 3.4-21. Key View #1a – Existing Conditions at William Mead Homes (view looking southwest toward railroad ROW)



Source: A Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-22. Key View #1a – Post-Project Conditions with Retaining Wall and Sound Wall at William Mead Homes
(view looking southwest from corner of Bolero Lane/Bloom Street toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-23. Key View #1b – Existing Conditions at William Mead Homes
(view looking south toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-24. Key View #1b – Post-Project Conditions at William Mead Homes with Retaining Wall (view looking south toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-25. Key View #1b – Post-Project Conditions at William Mead Homes with Retaining Wall and Sound Wall (view looking south toward railroad ROW)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Assessment Unit #2 (Vignes Street Corridor)

The Build Alternative would cause a resource change at Key Views #2a and #2b that would consist of a new railroad bridge over Vignes Street and retaining walls to support new lead tracks in the throat segment (Figure 3.4-26 through Figure 3.4-29). The new railroad bridge would be higher than the existing bridge and would increase the scale of vertical elements in the visual landscape; however, within this visual assessment unit, the resource change would not substantially change visual quality or character in the full build-out condition due to the presence of an existing bridge and associated railroad infrastructure in the same location as the new railroad bridge; thereby resulting in a low resource change.

Viewer response for the viewer groups in this visual assessment unit is described below.

- The new railroad 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/patrons and tourists/visitors because exposure would be short term and their awareness of the visual setting would be more focused on their businesses or preoccupied by traveling through the area. As shown in Table 3.4-10, a low level of resource change combined with a low level of viewer response would result in a low visual impact.
- Viewer response would be moderate for commuters because exposure would be short-term due to their awareness of the visual setting anticipated to be more focused on driving during periods of light roadway congestion, but they may also be able to focus on the surrounding views during periods of heavy roadway congestion when vehicles are moving more slowly. As shown in Table 3.4-10, a low level of resource change combined with a moderate level of viewer response would result in a moderately low visual impact.

Based on these considerations, no adverse effect would occur in Visual Assessment Unit #2 during operation.

Figure 3.4-26. Key View #2a – Vignes Street Bridge (view looking west toward bridge) Existing Conditions



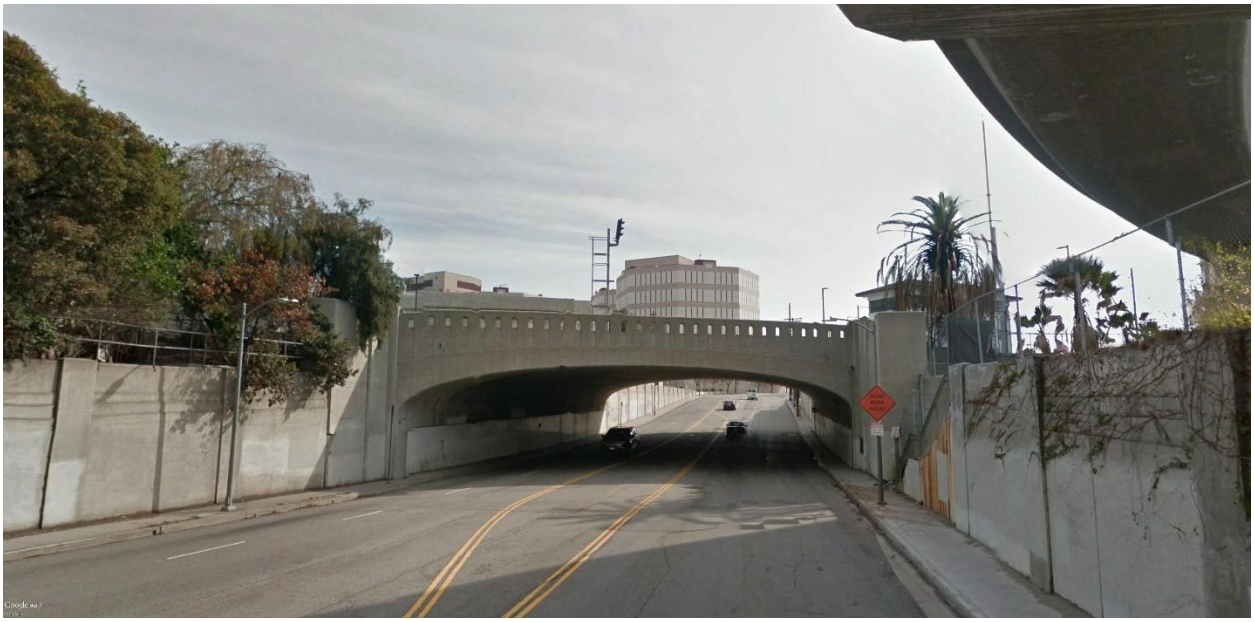
Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-27. Key View #2a – Vignes Street Bridge (view looking west toward bridge) Post-Project Conditions with New Bridge



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-28. Key View #2b – Vignes Street Bridge (view looking east toward bridge) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-29. Key View #2b – Vignes Street Bridge (view looking east toward bridge) Post-Project Conditions with New Bridge



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Assessment Unit #3 (Cesar Chavez Avenue Corridor/Mozaic Apartments)

The Build Alternative would cause a resource change at Key Views #3a and #3b in the full build-out condition that would consist of a new railroad bridge over Cesar Chavez Avenue, retaining walls to support the new lead tracks and elevated rail yard, and canopies over the rail yard (Figure 3.4-30 through Figure 3.4-33). The new railroad bridge would be replaced in the same location as the existing bridge to support tracks that would be elevated 10 to 15 feet higher than the existing top-of-rail at this location. The new railroad bridge and retaining walls to support elevated tracks would increase the dominance and scale of vertical and horizontal infrastructure elements in the visual landscape due to the increase in elevation of proposed track and structural improvements. Although the resource change would not be substantially different than existing views due to the presence of similar infrastructure elements at the same location, the dominance and scale of proposed infrastructure resulting from the change in the height of the bridge over Cesar Chavez Avenue, along with the introduction of new retaining walls, would be substantially greater than existing conditions; therefore, the resource change is considered moderate.

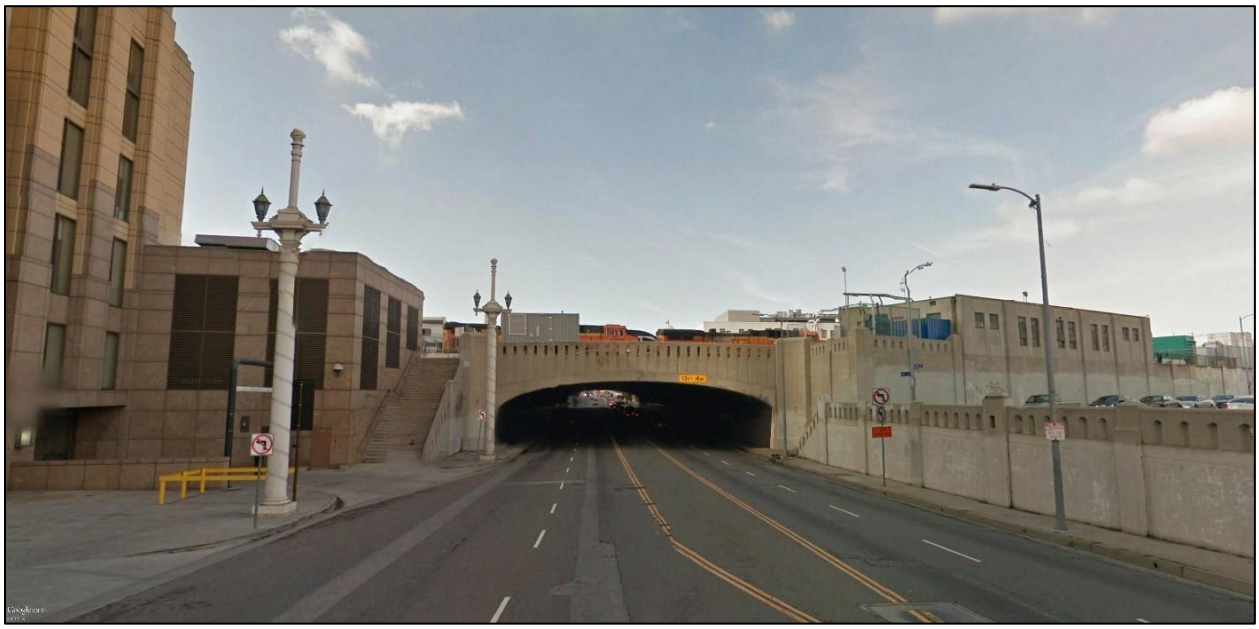
Viewer response for the viewer groups in this visual assessment unit is described below.

- Viewer response would be low for business owners/employees/patrons and tourists/ visitors because exposure would be short-term due to their awareness of the visual setting anticipated to be more focused on their businesses or preoccupied by traveling through the area. As shown in Table 3.4-10, a moderate level of resource change combined with a low level of viewer response would result in a moderately low visual impact.
- Viewer response would be moderate for commuters because exposure would be short-term due to their awareness of the visual setting anticipated to be more focused on driving during periods of light roadway congestion, but they may also be able to focus on the surrounding views during periods of heavy roadway congestion when vehicles are moving more slowly. As shown in Table 3.4-10, a moderate level of resource change combined with a moderate level of viewer response would result in a moderate visual impact.
- Viewer response would be moderately high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. Some viewers, depending upon their residential unit, would see proposed infrastructure when arriving at and leaving their residential unit and may have views of proposed infrastructure elements from inside their residential unit. Residents of the Mozaic Apartments would also have the most prominent views of the canopy option to be implemented, 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. The view toward LAUS and the associated canopies would be to the southeast, which currently is an open-air view of the existing rail yard. As shown in Table 3.4-10, a moderate level of resource change combined with a moderately high level of viewer response would result in a moderately high visual impact.

Based on these considerations, an adverse effect would occur for residents at the Mozaic Apartments within Visual Assessment Unit #3 during operation.

Mitigation Measure AES-1 (described in Section 3.4.6) requires Metro to design the retaining walls in consideration of the scale and architectural style of the adjacent Mozaic Apartments. As part of Mitigation Measure AES-1, Metro will be required to integrate materials, color, murals, landscaping, and/or other aesthetic treatments into the design of the retaining walls to minimize the dominance and scale. As described in Section 3.12, the design and façade of the Cesar Chavez Avenue Bridge would also be coordinated with SHPO as it is a historic property. Implementation of Mitigation Measure AES-1 would minimize adverse effects of the Build Alternative in Visual Assessment Unit #3 by improving the overall visual quality at the Mozaic Apartments. Upon implementation of Mitigation Measure AES-1, no direct adverse effect would occur in Visual Assessment Unit #3.

Figure 3.4-30. Key View #3a – Cesar Chavez Avenue Bridge (view looking west toward bridge) Existing Conditions



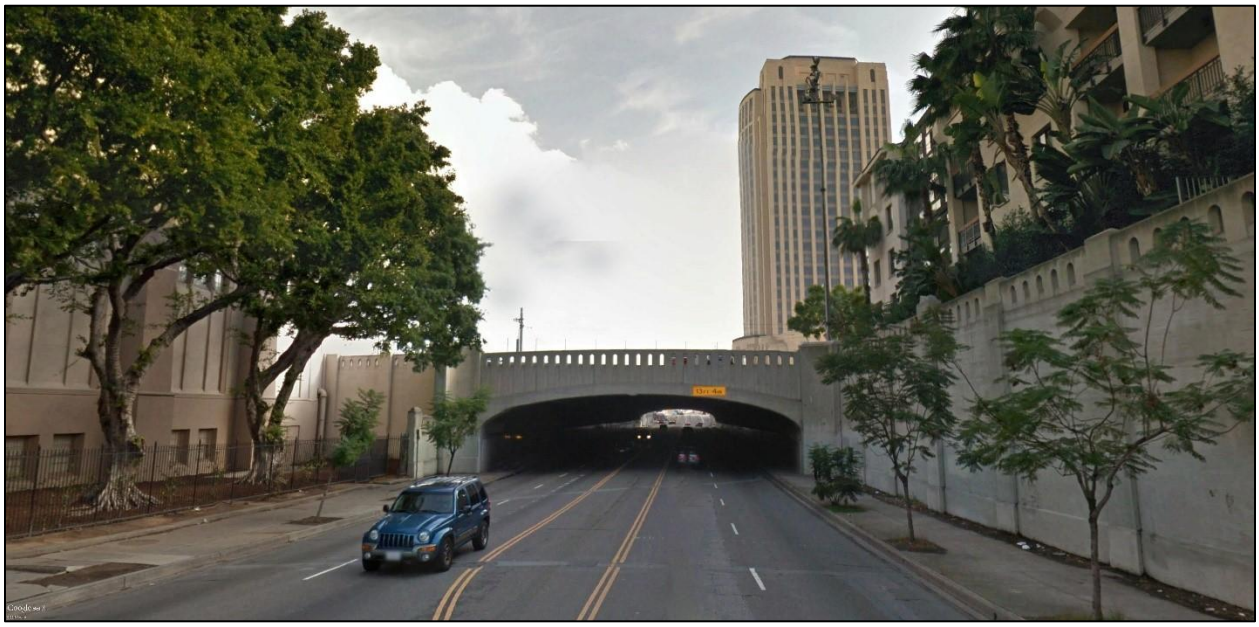
Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-31. Key View #3a – Cesar Chavez Avenue Bridge (view looking west toward bridge) Post-Project Conditions with New Bridge and Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-32. Key View #3b – Cesar Chavez Avenue (view looking east toward bridge) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-33. Key View #3b – Cesar Chavez Avenue Bridge (view looking east toward bridge) Post-Project Conditions with New Bridge and Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Assessment Unit #4 (Alameda Street Corridor/Father Serra Park)

The Build Alternative would cause a resource change at Key Views #4a and #4b that would consist of a small segment of the Rail Yard Canopy Design Option 2: Grand Canopy. The new canopy would introduce a new modern infrastructure element behind the historic LAUS entrance that would include design elements consistent with other transportation-related infrastructure and development in the Project study area, but the form and scale would not substantially alter the visual quality. Rail Canopy Design Option 1, individual canopies over platforms, would not cause a resource change because individual canopies would not be visible behind LAUS from Key Views #4a and #4b. The Build Alternative would result in no changes to the visual quality or character of the LAUS frontage within Visual Assessment Unit #4 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; therefore, the resource change is considered low.

Viewer response would be low for residents, business owners/employees/patrons, commuters, and visitors/tourists because 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; thereby reducing overall viewer sensitivity. Exposure would be limited due to the topography and existing development within the Project study area and views of the canopies are expected to take place intermittently for short durations as viewers pass LAUS along Alameda Street or utilize the public spaces in the vicinity. As shown in Table 3.4-10, a low

level of resource change combined with a low level of viewer response would result in a low visual impact. Based on these considerations, no adverse effect would occur in Visual Assessment Unit #4 during operation.

Figure 3.4-34 and Figure 3.4-36 depict the existing conditions from Key View #4a and #4b, and Figure 3.4-35 and Figure 3.4-37 depict the grand canopy that would be partially visible to primary viewers in this visual assessment unit.

Figure 3.4-34. Key View #4a – LAUS Entrance (view looking southeast toward LAUS) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-35. Key View #4a – LAUS Entrance (view looking southeast toward LAUS) Post-Project Conditions with Grand Canopy (Design Option 2)



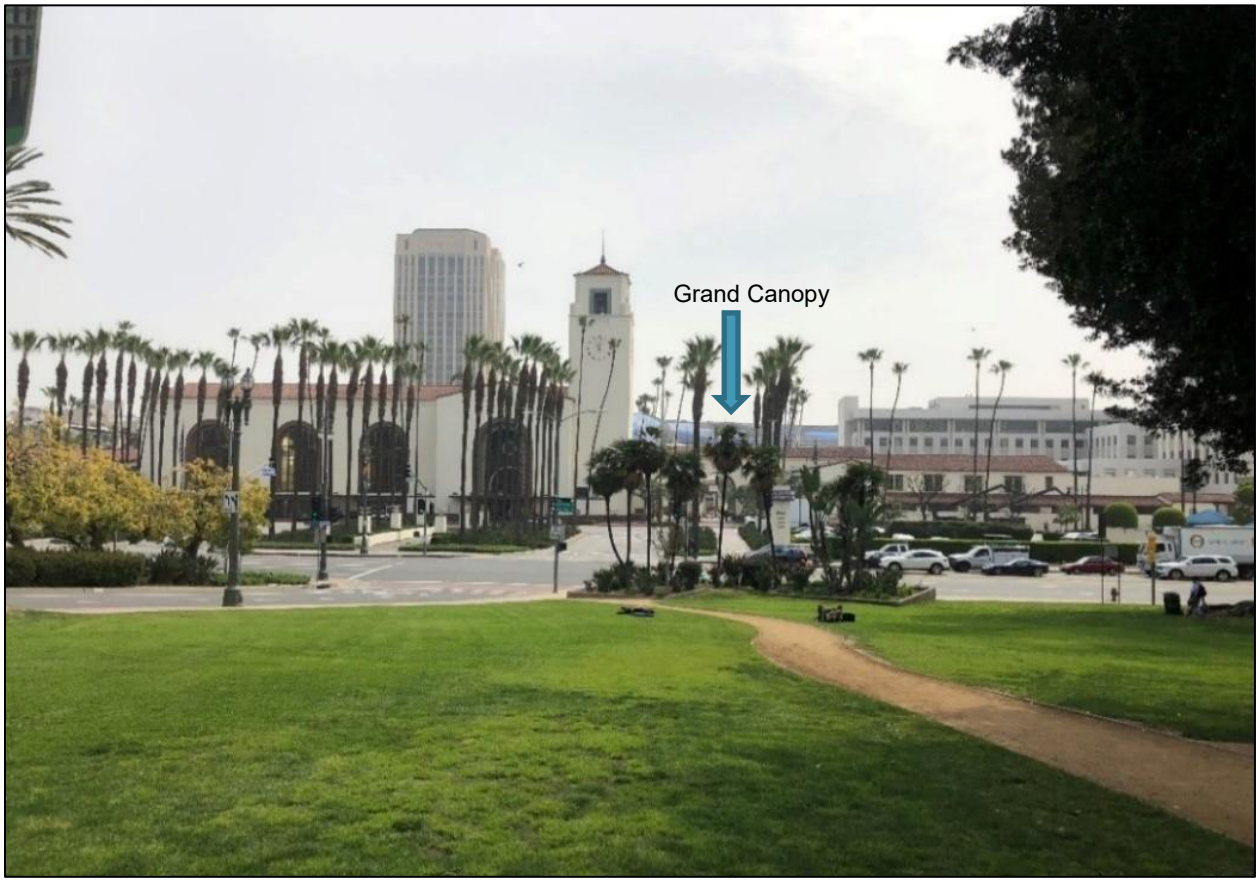
Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-36. Key View #4b – LAUS Entrance (view looking east toward LAUS) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-37. Key View #4b – Los Angeles Union Station Entrance (view looking east toward LAUS) Post-Project Conditions with Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Assessment Unit #5 (Commercial Street/US-101 Corridor)

The Build Alternative would cause a resource change at Key Views #5a through #5e that would consist of new run-through track structures south of LAUS, including the common viaduct/deck that would be constructed over US-101 and common embankments and bridges that would be constructed north of Commercial Street in the interim condition (Figure 3.4-38 through Figure 3.4-47). The US-101 Viaduct within the Caltrans ROW would be approximately 205 feet wide and 700 feet long, with a deck elevation that varies between 307 feet and 314 AMSL. The height of the structure would vary from 25 feet to 35 feet, depending on location when measured from the roadway below to the highest point of the viaduct structure. The US-101 Viaduct would be supported by two abutments and on seven 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 the US-101 ROW. The US-101 Viaduct would be constructed of materials similar to those used in the Alameda Street overhead crossing and the Gold Line Viaduct; however, 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 Build Alternative would result in a substantial addition of new transportation infrastructure elements to the existing visual environment south of LAUS, but the run-through track infrastructure would be similar in context, form, and scale to the existing transportation infrastructure in this visual assessment unit, as it is primarily a transportation corridor with multiple highway and railroad-oriented uses. 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 for both the interim and full build-out conditions; however, there are no residential land uses or other sensitive land uses that would be affected by shadow impacts, and the scale of the highway corridor and surrounding development is linear and large; therefore, the addition of run-through track infrastructure would not change the visual character of this visual assessment unit. Metro may also implement aesthetic treatments to the US-101 Viaduct and run-through structures south of LAUS, in coordination with the City of Los Angeles and Caltrans.
- The resource change within Visual Assessment Unit #5 would be low due to the context with the surrounding transportation infrastructure and industrial land uses. A summary of the resource change for each of the key views in Visual Assessment Unit #5 is provided below.
    - 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 reduce the visibility of aging industrial buildings and overhead power lines in the background (Figure 3.4-38 and Figure 3.4-39).
    - From Key View #5b, looking north from Commercial Street toward US-101 and LAUS, the run-through track structure over US-101 would dominate views from Commercial Street looking toward LAUS, the MWD headquarters, and Metro Headquarters (Figure 3.4-40 and Figure 3.4-41).
    - From Key Views #5c, #5d, and #5e, the run-through track structure and embankment would present a new infrastructure feature that would be similar in form, scale, color, and mass to other overhead bridges with associated bents and abutments within public ROW and at freeway on- and off-ramp locations because these are a common infrastructure element within and adjacent to the Caltrans ROW. Placement of outrigger bents over the intersection of Commercial Street and the US-101 on- and off-ramps would not be required, thereby avoiding potential shadow effects on Commercial Street (Figure 3.4-42 through Figure 3.4-47).
- Examples of potential aesthetic treatment concepts that could be applied to the US-101 Viaduct and run-through tracks structures, provided that additional funding is made available, are depicted on Figure 3.4-48 and Figure 3.4-49. These aesthetic treatments would contribute to the resource change and are conceptual and subject to change. Figure 3.4-48 and Figure 3.4-49 also depict the bicycle lanes along Commercial Street required as part of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning), in addition to other future urban design enhancements that would further contribute to the resource change, provided that additional funding is identified in coordination with City of Los Angeles and Caltrans.

Viewer response for the viewer groups in this visual assessment unit is described below.

- Viewer response would be moderately low for commuters and visitors/tourists on US-101 (northbound and southbound travelers), 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 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 the 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 the Caltrans ROW. As shown in Table 3.4-10, a low level of resource change combined with a moderately low level of viewer response would result in a moderately low visual impact.
- Viewer response would be moderately high for business owners/employees/patrons because these viewer groups would be exposed to new, large structures where none currently exists. As shown in Table 3.4-10, a low level of resource change combined with a moderately high level of viewer response would result in a moderate visual impact.

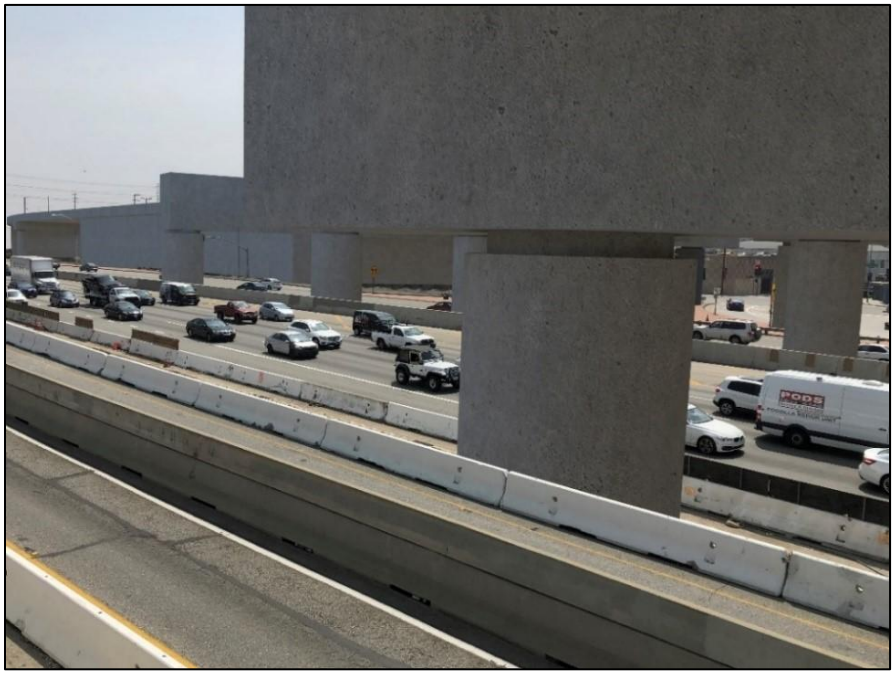
Based on these considerations, no direct adverse effect would occur within Visual Assessment Unit #5 during operation.

Figure 3.4-38. Key View #5a – US-101/Commercial Street Corridor (view looking southeast toward US-101/Commercial Street) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-39. Key View #5a – US-101/Commercial Street Corridor (view looking southeast toward US-101/Commercial Street) Post-Project Condition with Run-Through Track Infrastructure



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-40. Key View #5b – Commercial Street Corridor (view looking north toward US-101 and LAUS) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-41. Key View #5b – Commercial Street Corridor (view looking north toward US-101 and LAUS) Post-Project Condition with Run-Through Tracks and Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-42. Key View #5c – Commercial Street Corridor (view looking east toward Center Street) Existing Conditions



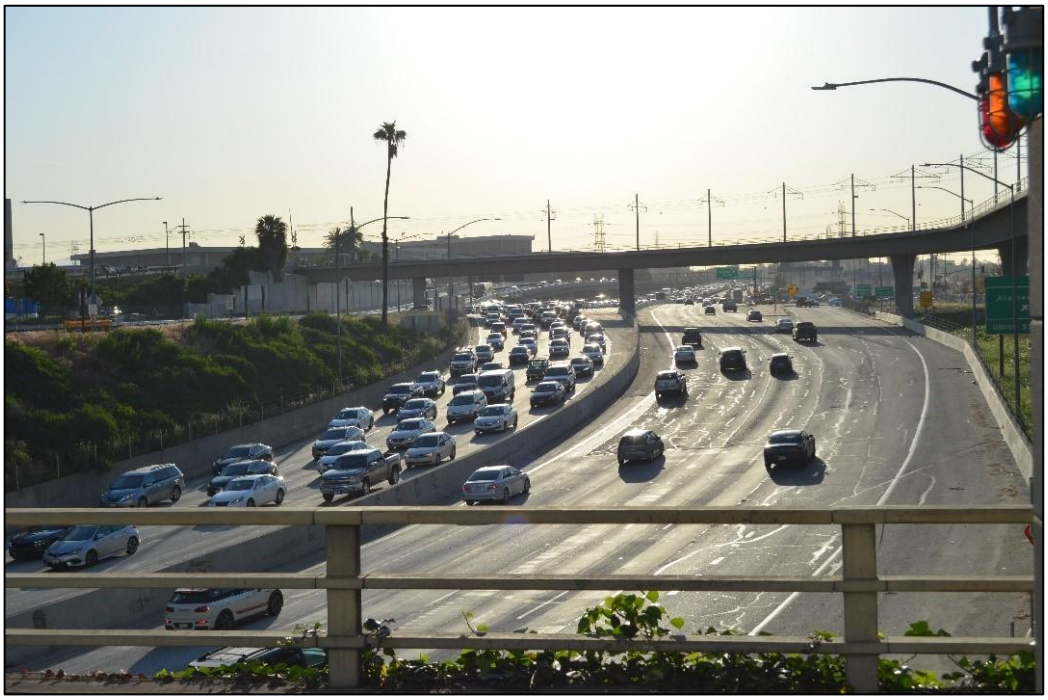
Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-43. Key View #5c – Commercial Street Corridor (view looking east toward Center Street) Post-Project Condition with Run-Through Tracks



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-44. Key View #5d – US-101 (view looking north toward LAUS) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-45. Key View #5d – US-101 (view looking north toward LAUS) Post-Project Condition with Run-Through Tracks



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-46. Key View #5e – US-101 (view looking north toward Downtown Los Angeles) Existing Conditions



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-47. Key View #5e – US-101 (view looking north toward Downtown Los Angeles) Post-Project Condition with Run-Through Tracks



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-48. Potential Aesthetic Treatments and Urban Design Enhancements on Commercial Street



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-49. Potential Aesthetic Treatments and Urban Design Enhancements at Center Street/Commercial Street Intersection



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Visual Assessment Unit #6 (Concourse Segment)

The Build Alternative would cause a resource change at Key Views #6a, #6b, and #6c that would consist of concourse-related improvements including a 140-foot-wide expanded passageway below the LAUS rail yard in conjunction with new plazas east and west of the elevated rail yard (East and West Plazas).

Two rail yard canopy design options that would contribute the resource change are described below.

- **Rail Yard Canopy Design Option 1.** Individual canopies over each platform would introduce new, noticeable visual elements in the rail yard that would be larger in scale with a more modern design than the existing butterfly canopies. Individual canopies would include glass architectural elements to cover the size of the expanded platforms.
- **Rail Yard Canopy Design Option 2.** A grand canopy over the rail yard would introduce new, noticeable visual elements in the rail yard that would be larger in scale than the individual canopies because it would extend up to 75 feet above the elevated rail yard platforms and would also include modernized glass architectural elements. The grand canopy would present a new, dominant feature in the landscape and introduce new vertical building elements above the rail yard that would provide prominent views within and outside of LAUS.

New VCEs and standard amenities, benches, variable message signs, new lighting, closed-circuit television security cameras, ticket vending machines, passenger waiting areas, and trash receptacles would also contribute to the resource change. The resource change for the portion of the concourse-related improvements below the rail yard would be visible from Key Views #6b and #6c. Similar to the existing conditions and visual character, the rail yard would be situated within an exterior environment, although it would be elevated approximately 15 feet within this visual assessment unit. This resource change to the rail yard would be most visible from Key View #6a. The grand canopy or individual canopies would be visible above the tracks (visible from Key View #6a). The design of the proposed improvements would be compatible with the surrounding visual landscape in Downtown Los Angeles, include sustainable design features consistent with the vision for LAUS, and improve upon the aesthetic conditions at LAUS. The scale and modern architectural style of the concourse-related improvements in Visual Assessment Unit #6 and overall enhancements to the visual quality of the LAUS campus that would result from implementation of the expanded passageway, plazas, and elevated rail yard would result in a moderately high resource change.

Viewer response would be moderately high for business owners/employees/patrons, visitors/ tourists, and commuters because exposure to the resource change would be short-term when business owners/employees/patrons arrive and/or leave when arriving and leaving businesses; however, exposure would be often, potentially daily. Visitors/tourists and commuters would also be exposed to the resource change on a frequent basis, although for shorter duration of time. These viewer groups are anticipated have a positive response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS. As shown in Table 3.4-10, a moderately high level of resource change combined with a moderately high level of viewer response would result in a moderately high visual impact. Based on these considerations, a beneficial effect would occur during operations.

Architectural representations depicting the interior and exterior views of the proposed infrastructure and concourse-related improvements within Visual Assessment Unit #6 were prepared. The renderings are conceptual, subject to change, and are provided to illustrate the extent of architectural expansion and renovation proposed for LAUS. Figure 3.4-50 includes the viewpoint locations that were selected to depict the concourse-related improvements, including the 140-foot-wide expanded passageway below the LAUS rail yard, new plazas east and west of the elevated rail yard, and the elevated railyard as part of the Build Alternative. Figure 3.4-51 through Figure 3.4-56 depict views of the concourse-related improvements associated with the Build Alternative and, specifically, the West Plaza, East Plaza, ingress/egress areas, waiting areas, VCEs, platforms areas, and interior of the new expanded passageway (Views A through F).

Figure 3.4-50. Viewpoint Locations of the Build Alternative with Expanded Passageway



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

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Figure 3.4-51. View A – Expanded Passageway from West Plaza Looking East with Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-52. View B – Expanded Passageway under Gold Line Platforms Looking West



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-53. View C – New Platforms and Vertical Circulation Elements Looking North with Grand Canopy (Design Option 2)



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-54. View D – Expanded Passageway with Retail Space and Waiting Areas Looking Southwest



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-55. View E – Expanded Passageway Looking West



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Figure 3.4-56. View F – Expanded Passageway from East Plaza Looking West



Source: Link US Visual Impact Assessment (Appendix F of this EIS)

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. As discussed in Section 3.2, *Land Use and Planning*, all development would be subject to zoning regulations with regard to setbacks, massing, and lighting. New development is not expected to adversely change the visual quality and aesthetics in the Project study area throughout operation because all new development would be constructed pursuant to applicable policies, programs and plans for the area. Therefore, no indirect adverse effect would occur.

TOPIC 3.4-B	Light or glare

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. There would be no construction activities that would introduce temporary lighting within the Project study area. The No Action Alternative does not facilitate construction of new run-through tracks or an expanded passageway with concourse-related improvements. Therefore, the No Action Alternative would not increase the number of trains and signals within the throat segment that would increase lighting in the surrounding area during operations. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative. Changes related to other projects could incrementally affect visual quality and aesthetics and add additional lighting and glare depending on the proposed project type, materials used for construction, and orientation to viewer groups. The context and intensity of effects would vary based on the location of other proposed developments. No direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – 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 be temporary and placed in select locations where work is occurring. Direct lighting on nearby residences in proximity to the construction work zone within Visual Assessment Units #1 and #3 would potentially expose residential viewers to higher levels of lighting during the nighttime hours, which could disrupt normal activities for residents of William Mead Homes, Care First Village and Mozaic Apartments. This would be a direct adverse effect. However, implementation of Mitigation Measure AES-2 (described in Section 3.4.6) requires the construction contractor to install temporary lighting in a manner that directs light toward the construction area and to install temporary shields as necessary so that

light spill does not occur into residential areas. Implementation of Mitigation Measure AES-2 would minimize adverse effects by reducing the amount of direct light exposed to residential areas in Visual Assessment Units #1 and #3. Upon implementation of Mitigation Measure AES-2, no direct adverse effect would occur in Visual Assessment Units #1 and #3 during construction.

Direct Effects – Operations

Visual Assessment Unit #1

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 from additional train movements; however, within Visual Assessment Unit #1 some of this lighting may be blocked by the sound wall along William Mead Homes 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. No new sources of lighting or glare would be directed at residential land uses at William Mead Homes.

At Care First Village, the increase in lighting would occur on the elevated portion of the throat tracks and is not expected to add new direct sources of lighting or glare to the residential units because the elevated throat tracks would be located at a higher elevation than the residential units.

The additional lighting within Visual Assessment Unit #1 would occur within an existing railroad ROW in an area heavily utilized by transportation uses and is not expected to affect disrupt normal activities for the surrounding residential land uses. No direct adverse effect would occur during operation.

Visual Assessment Unit #2

Views from Key Views #2a and #2b within Visual Assessment Unit #2 would be oriented toward the new railroad bridge that would support new lead tracks over Vignes Street in the full build-out condition. The new railroad bridge would be elevated over Vignes Street; however, the presence of lighting on the bridge or in the railroad ROW would not be substantially different than existing conditions and any additional light from increased train movements would not be directed toward residential land uses or drivers from Key Views #2a and #2b. No direct effect would occur during operation.

Visual Assessment Unit #3

Views from Key Views #3a and #3b within Visual Assessment Unit #3 would be oriented toward where the resource change would occur (new railroad bridge that would support new lead tracks over Cesar Chavez Avenue and the new platform canopies, i.e., Rail Yard Canopy Designs Option 1 or 2). The new railroad bridge would be elevated, and lights would be incorporated into the design of the elevated rail yard and canopies to meet current applicable safety standards in the full build-out condition. If not properly designed and installed, light emissions and potential

glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. 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; however, for residents in the Mozaic Apartment units nearest to the station, direct effects in the full build-out condition would be considered adverse. Mitigation Measure AES-3 requires Metro to design all Project lighting to comply with applicable rules, standards, and guidelines including *Metro Rail Design Criteria* (Metro 2013a), SCRRA *Design Criteria Manual* (SCRRA 2014), Illuminating Engineering Society standards (Illuminating Engineering Society 2011a, 2011b, 2014), California Building Standards Code 2013 (Title 24), and Leadership in Energy and Environmental Design® (LEED®) standards for new construction. These guidelines include requirements for lighting pollution reduction to minimize any undesired exposure on viewers and nearby residents of Mozaic Apartments. Upon implementation of Mitigation Measure AES-3, no direct adverse effect would occur in Visual Assessment Unit #3 during operation.

Visual Assessment Unit #4

Views from Key Views #4a and #4b within Visual Assessment Unit #4 would be oriented toward the LAUS and the new canopies above the elevated platforms during operation. In Visual Assessment Unit #4, viewers would experience some change resulting from nighttime illumination; however, light levels would not be substantially different than under existing conditions. Individual canopies (Rail Yard Canopy Design Option 1) would not be visible from the key views considered within this visual assessment unit, although the grand canopy (Rail Yard Canopy Design Option 2) would be visible. Operational effects of lighting and glare in Visual Assessment Unit #4 would not result in undesired exposure to residents or drivers or disrupt any normal activities for other viewer groups. No direct adverse effect would occur.

Visual Assessment Unit #5

Views from Key Views #5a through #5e within Visual Assessment Unit #5 would be oriented toward run-through track infrastructure south of LAUS. 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 2011c). The Build Alternative 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 tracks or increased train movements would not be substantially noticeable. The Build Alternative is not expected to result in additional daytime glare in this visual assessment unit because the proposed run-through structures south of LAUS would be constructed of concrete non-reflective building materials, similar to other bridges and overcrossings (e.g., Gold Line Viaduct) in the Project study area. Because Visual Assessment Unit #5 is within a developed urban area, and additional lighting would not result in undesired exposure to residents or drivers,

effects related to lighting are not expected to be substantially different from the surrounding area. No direct adverse effect would occur during operation.

Visual Assessment Unit #6

Views from Key Views #6a through #6c within Visual Assessment Unit #6 would be oriented toward the elevated railyard and new concourse-related improvements. At night, the elevated rail yard would be an illuminated feature, similar to other nearby transit facilities. Additional light at the station would result from increased train movements in the rail yard and the new canopies. There is already 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 out into this visual assessment unit. Therefore, the amount of lighting would not be substantially different relative to existing conditions. No direct adverse effect would occur.

As discussed above for Visual Assessment Unit #3, glare effects would result from implementation of the canopies above the elevated platforms. See discussion above for an evaluation of potential effects and applicable mitigation at Mozaic Apartments.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. New development could introduce new light sources during construction and throughout operations. However, all new development will be required to be consistent with applicable federal, state, and local policies and regulations related to light and glare to minimize potential for lighting and glare impacts; therefore, no indirect adverse effect would occur.

3.4.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects on visual quality and aesthetics.

AES-1 **Aesthetic Treatments:** Retaining walls Segments 1 and 2 and the sound walls in Segment 1 of the Project study area shall be designed in consideration of the scale and architectural style of the adjacent William Mead Homes, Care First Village, 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 walls/sound walls to minimize the dominance and scale of the retaining walls/sound walls. Before construction is complete, Metro

shall be responsible for the structural maintenance of the sound wall. In most cases, right-of-way agreements require the property owner to perform routine wall maintenance. Metro shall also enter into maintenance agreements with HACLA and Care First Village. Additionally, Metro shall collaborate with HACLA and Care First Village to determine the aesthetics and materials for the 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. A Construction Lighting Management Plan shall be prepared and coordinated with Metrolink Operations & Safety to ensure work-zone lights do not impact train engineers' vision or passengers on adjacent platforms.

AES-3 **Screen Direct Lighting and Glare:** During final design, all new or replacement lighting shall comply with *Metro Rail Design Criteria* (Metro 2013), SCRRA *Design Criteria Manual* (SCRRA 2014), CHSRA design criteria, Illuminating Engineering Society standards (Illuminating Engineering Society 2011a, 2011b, 2014), maximum allowable CALGreen glare ratings (CBC 2013 – Title 24, Part 11), and LEED® standards for new construction. In addition, all permanent lighting 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 incorporated into the design of the new canopies to reduce daytime glare impacts.

3.4.7 NEPA Impact Summary

This section summarizes the effects related to visual quality and aesthetics of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.4-A and Topic 3.4-B, no Project-related resource change would occur within the Project study area and the visual quality and aesthetics would remain similar to the existing condition. However, other planned projects and new developments within the Project study area could result in other direct and indirect effects on visual quality and aesthetics.

All planned future projects and new developments would require the evaluation of visual quality and aesthetic impacts during CEQA and NEPA environmental review and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects.

Build Alternative

As discussed under Topic 3.4-A, visual effects from construction activities are considered a temporary resource change because no permanent changes to any of the visual assessment

units considered would occur. Viewer response would be temporary because construction activities, vehicles, equipment, and machinery would no longer be visible to viewer groups (business owners/employees/patrons, commuters, visitors/tourists, and residents) after construction is complete, and all staging areas would be restored to pre-Project conditions; thereby eliminating all exposure to these elements after construction is complete.

As discussed under Topic 3.4-A, during operations, the resource change associated with the proposed infrastructure and overall viewer response varies. A summary of the resource change, viewer response, visual impact and effect determination for each of the visual assessment units considered follows:

- **Visual Assessment Unit #1.** Proposed infrastructure results in a moderately high level of resource change. For residential viewers, a high level of viewer response would occur, resulting in a high visual impact. The high visual impact correlates to an adverse effect during operation. Mitigation Measure AES-1 requires Metro to design retaining walls/ sound walls in consideration of the scale and architectural style of the adjacent William Mead Homes and Care First Village. Upon implementation of Mitigation Measure AES-1, no adverse effect would occur in Visual Assessment #1.
- **Visual Assessment Unit #2.** Proposed infrastructure results in a low resource change. For business owners/employees/patrons and tourists/visitors, a low level of viewer response would occur, resulting in a low visual impact. For commuters, a moderate level of viewer response would occur, resulting in a moderately low visual impact. No adverse effect would occur.
- **Visual Assessment Unit #3.** Proposed infrastructure results in a moderate resource change. For business owners/employees/patrons and tourists/visitors, a low level of viewer response would occur, resulting in a moderately low visual impact. For commuters, a moderate level of viewer response would occur, resulting in a moderate visual impact. For residents, a moderately high viewer response would occur, resulting in a moderately high visual response. The moderately high visual impact correlates to an adverse effect during operation. Mitigation Measure AES-1 requires Metro to design retaining walls/sound walls in consideration of the scale and architectural style of the adjacent Mozaic Apartments. Upon implementation of Mitigation Measure AES-1, no adverse effect would occur in Visual Assessment #3.
- **Visual Assessment Unit #4.** Proposed infrastructure results in a low resource change. For residents, business owners/employees/patrons, commuters, and visitors/tourists, a low level of viewer response would occur, resulting in a low visual impact. For commuters, a moderate level of viewer response would occur, resulting in a low visual impact. No adverse effect would occur.
- **Visual Assessment Unit #5.** Proposed infrastructure results in a low resource change. For commuters and visitors/tourists, a moderately low level of viewer response would occur, resulting in a moderately low visual impact. For business owners/employees/

patrons, a moderately high level of viewer response would occur, resulting in a moderate visual impact. No adverse effect would occur.

- **Visual Assessment Unit #6.** Proposed infrastructure results in a moderately high resource change. For business owners/employees/patrons, visitors/tourists, and commuters, a moderately high level of viewer response would occur, resulting in a moderately high visual impact. Viewer groups are anticipated have a positive response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. A beneficial effect would occur.

As discussed under Topic 3.4-B, nighttime lighting from the construction work zone in close proximity residential viewer groups (William Mead Homes, Care First Village, and Mozaic Apartments) would be considered adverse because residences would be exposed to higher levels of lighting throughout the duration of construction. Throughout operation, increased light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare. This is considered an adverse effect.

Mitigation Measure AES-2 includes provisions that require the construction contractor to install temporary lighting in a manner that directs light toward the construction area and to install temporary shields as necessary so that light spill does not occur into residential areas. Implementation of Mitigation Measure AES-2 would minimize the potential for adverse effects during construction. Mitigation Measure AES-3 includes provisions that require lighting to be designed in accordance with *Metro Rail Design Criteria* (Metro 2013), SCRRA *Design Criteria Manual* (SCRRA 2014), Illuminating Engineering Society standards (Illuminating Engineering Society 2011a, 2011b, 2014), maximum allowable CALGreen glare ratings (California Building Standards Code 2013 – Title 24, Part 11), and LEED® standards for new construction. Mitigation Measure AES-3 also requires permanent lighting to be directed away from residential units and for low-reflective glass and materials to be used for rail yard canopies; thereby minimizing the adverse effect.

Upon implementation of Mitigation Measure AES-1 through Mitigation Measure AES-3, no adverse effect would occur.

Table 3.4-11 provides an impact summary for the Build Alternative.

Table 3.4-11. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect	*Construction* No mitigation is required.	*Construction* No Adverse Effect
	Operations Beneficial Effect (Visual Assessment Unit #6) Adverse Effect (Visual Assessment Units #1 and #3)	*Operations* **AES-1 Aesthetic Treatments**	*Operations* Beneficial Effect (Visual Assessment Unit #6) No Adverse Effect (Visual Assessment Units #1 - #5)
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
Topic 3.4B: Light or glare	*Construction* Adverse Effect	*Construction* **AES-2 Minimize Nighttime Work and Screen Direct Lighting**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **AES-3 Screen Direct Lighting and Glare**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect

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3.5 Air Quality and Global Climate Change

3.5.1 Introduction

This section provides an evaluation of potential air quality and global climate change effects that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Air Quality and Climate Change Assessment* (Appendix G of this EIS).

3.5.2 Regulatory Framework

Table 3.5-1 identifies and summarizes laws, regulations, and plans relevant to air quality and global climate change. The Draft EIS/SEIR was issued in June 2024, prior to the issuance of recent federal EOs and regulatory directions. Therefore, this section still includes a summary of the regulatory framework at the time when the Draft EIS/SEIR was prepared. This document also includes a summary of recent federal EOs and guidance, which may not apply to this project.

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.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
Federal	
Corporate Average Fuel Economy Standards (2022)	The latest CAFE standards require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026. The new standards will increase fuel efficiency 8% annually for model years 2024–2025 and 10% annually for model year 2026. They will also increase the estimated fleetwide average by nearly 10 mpg for model year 2026, relative to model year 2021. These standards for 2024–2026 will reduce fuel use by more than 200 billion gallons through 2050 as compared to the old standards.
Executive Order 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (2021)	As signed on December 8, 2021, EO 14057 requires agencies to: • Achieve 100 percent carbon pollution-free electricity by 2030, including 50 percent on a 24/7 basis. • Reach 100 percent zero-emission vehicle acquisition by 2035, including 100 percent light-duty acquisitions by 2027. • Achieve net-zero building emissions by 2045, including a 50 percent reduction by 2032. • Reduce Scope 1 and 2 GHG emissions by 65 percent from 2008 levels by 2030. • Establish targets to reduce energy and potable water use intensity by 2030.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
	• Reduce procurement emissions to net-zero by 2050. • Have climate resilient infrastructure and operations. • Develop a climate- and sustainability-focused workforce. • Advance equity-focused operations. • Accelerate progress through domestic and international partnerships.
Final Endangerment and Cause or Contribute Findings for Greenhouse Gases (2009)	As a result of *Massachusetts v. U.S. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the FCAA. Therefore, the U.S. EPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. On April 17, 2009, the U.S. EPA Administrator signed proposed endangerment and cause or contribute findings for GHGs under Section 202(a) of the FCAA. The final Findings were published on December 7, 2009, by the U.S. EPA.
NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (2023)	The CEQ[1] issued an interim guidance on January 9, 2023, to assist agencies in analyzing GHG and climate change effects of their proposed actions under NEPA. This guidance aligns the depth of analysis proportional with the project's impacts, clarifies best practices for analysis, introduces the social cost of GHGs, and encourages agencies to mitigate GHG impacts. This guidance is consistent with EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*.
Federal Clean Air Act (42 United States Code § 7401 et seq.) (1963)	The FCAA established 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 areas) 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.

[1] Although interim guidance was issued in 2023, this environmental document was initiated prior to the effective date and is not subject to the new regulations and relies on the Mandatory Reporting of GHGs Rule (40 CFR Part 98). CEQ later withdrew that 2023 guidance.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
General Conformity Rule (40 Code of Federal Regulations 93 Subpart B) (2010)	The U.S. EPA General Conformity Rule (40 CFR 93 Subpart B) applies to federal actions, other than those related to highway and transit planning and projects, that result in emissions of criteria pollutants, or their precursors, in federally designated nonattainment or maintenance areas. The emissions levels that trigger requirements of the General Conformity Rule for federal actions emitting nonattainment or maintenance pollutants, or their precursors, are called *de minimis* levels. The general conformity *de minimis* levels are defined in 40 CFR 93.153(b).
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(1),* 64 *Federal Register* 28545-28556 (1999)[2]	The FRA's Environmental Procedures require the draft and final EIS to include an assessment of the consistency of the alternatives with federal and state plans for the attainment and maintenance of air quality standards.
Mandatory Reporting of Greenhouse Gases Rule (40 Code of Federal Regulations Part 98)	Independent of NEPA, but pursuant to 40 CFR Part 98 (the Mandatory Reporting of GHGs Rule), U.S. EPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of CO_2e emissions per year.
Executive Order 13990 – Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (2021)	EO 13990, of January 20, 2021, directs federal agencies to immediately review, and take action to address, federal regulations promulgated and other actions taken during the last 4 years that conflict with national objectives to improve public health and the environment; ensure access to clean air and water; limit exposure to dangerous chemicals and pesticides; hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; reduce GHG emissions; bolster resilience to the impacts of climate change; restore and expand our national treasures and monuments; and prioritizes employment.
Executive Order 14008 (86 *Federal Register* 7619) – Tackling the Climate Crisis at Home and Abroad (2021)	EO 14008 was signed by President Biden on January 27, 2021. EO 14008 establishes a "government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure."
United States Department of Transportation Strategic Plan Fiscal Year 2022–2026	The FY 2022–26 USDOT Strategic Plan is aligned with multiple EOs with a range of priorities including: protecting worker and traveler health and safety; providing economic relief to address effects of the COVID-19 pandemic; enhancing supply chain resilience, promoting economic competition, strengthening American leadership in clean cars and trucks, and spurring domestic manufacturing and

[2] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
	innovation; restoring scientific integrity and tackling the climate crisis; improving cybersecurity and protecting privacy and civil liberties; affirmatively advancing equity, civil rights, racial justice, and equal opportunity; and supporting diversity, equity, inclusion, and accessibility in the federal workforce. The strategic goals include safety, economic strength and global competitiveness, equity, climate and sustainability, transformation, and organizational excellence.
Executive Order 14154 Unleashing American Energy (2025)	Executive Order (EO) 14154 of January 20, 2025 establishes the goal to unleash America's affordable and reliable energy and natural resources to restore American prosperity. It revoked several other executive orders, disbanded the Interagency Working Group on the Social Cost of Greenhouse Gases, and directed updates to rules and policies.
Jeffrey Bossert Clark, Jr., Acting Administrator Office of Information and Regulatory Affairs, Mem. for Regulatory Policy Officers at Depts. and Agencies and Managing and Executive Directors of Commissions and Boards (May 5, 2025)	The Office of Information and Regulatory Affairs, inside the Office of Management and Budget, implemented Section 6 of Executive Order 14154. It provides guidance on rulemaking and also requires agencies, when approving permits to "provide the minimal greenhouse gas analysis and consideration necessary for agencies to comply with statutory requirements."
Withdrawal of [NEPA] Guidance on Consideration of [GHG] Emissions and Climate Change, 90 Fed. Reg. 22,472 (May 28, 2025)	The CEQ withdrew the interim guidance, NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (2023).
State	
California State Implementation Plan (1990)	The 1990 amendments to the FCAA set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. The promulgation of the national 8-hour O_3 standard and the fine particulate matter ($PM_{2.5}$) standards in 1997 resulted in additional statewide air quality planning efforts. In response to new federal regulations, the SIP also began to address ways to improve visibility in national parks and wilderness areas. SIPs are not single documents, but rather a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the FR. CFR, Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
Assembly Bill (AB) 617	AB 617 was signed into law by Governor Edmund G. Brown Jr. in 2017 to address air pollution impacts in communities with high cumulative exposure burdens. AB 617 requires the California Air Resources Board (CARB) to develop a Statewide Strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities most impacted by air pollution. A small portion of the Project is within the east side of the East Los Angeles, Boyle Heights, and West Commerce (ELABHWC) community. AB 617 requires the CARB Governing Board, in consultation with specified partners, to annually consider the selection of communities for the preparation of a Community Emissions Reduction Program (CERP). The CERP identifies actions set by the Community Steering Committee (CSC), the South Coast Air Quality Management District (SCAQMD), and CARB to reduce exposure to criteria air pollutants and toxic air contaminants in a priority community. The CERP acknowledges the federal, State, and local agencies already have air quality regulations in place to reduce air pollution from sources such as trucks, industrial facilities, off-road equipment, etc. The CERPs call for actions and goals to be implemented through six types of strategies including: rules and regulations, enforcement, air monitoring, collaboration, incentives, and public information and outreach. The ELABHWC community identifies reducing railroad emissions as a priority.
Local	
South Coast Air Quality Management District Rule 403	Fugitive dust is particulate matter that is suspended in the air by direct or indirect human activities. SCAQMD Rule 403 requires implementation of the best available dust control measures during active operations capable of generating fugitive dust in order to reduce the amount of particulate matter entrained in the ambient air. Control measures may include watering, sweeping, soil stabilizers, wheel washing, and/or limiting vehicle speed and access in construction areas.
South Coast Air Quality Management District Rule 1113	SCAQMD Rule 1113 limits the VOC content on manufacture, distribution, and use of architectural coatings within the SCAQMD. The purpose of this rule is to reduce area source emissions. The VOC limits vary by coating category and are described in the Table of Standards within the rule.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
City of Los Angeles General Plan Air Quality Element (1992)	The Air Quality Element sets forth the goals, objectives, and policies which will guide the City in the implementation of its air quality improvement programs and strategies. The Air Quality Element and the Clean Air Program acknowledge the interrelationships among transportation and land use planning in meeting the City's mobility and clean air goals. With adoption of the Air Quality element and the Clean Air Program, the City seeks to achieve consistency with regional air quality, growth management, mobility, and congestion management plans.

Notes:
CAFE=Corporate Average Fuel Economy; CARB=California Air Resources Board; CEQ=Council of Environmental Quality; CFR=Code of Federal Regulations; CO=carbon monoxide; CO_2e=Carbon Dioxide Equivalent; EO=Executive Order; FCAA=Federal Clean Air Act; FR=Federal Register; FRA=Federal Railroad Administration; GHG=greenhouse gas; mpg=miles per gallon; MT=metric tons; NAAQS=National Ambient Air Quality Standards; NEPA=National Environmental Policy Act; NO_2=nitrogen dioxide, O_3=ozone; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; SCAQMD= South Coast Air Quality Management District; SIP=State Implementation Plan; SO_2=sulfur dioxide; USDOT = United States Department of Transportation; U.S. EPA=United States Environmental Protection Agency; VOC=volitive organic compounds

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
O_3[c]	1 hour	0.09 ppm	—	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 NOx 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)
	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)			State: Nonattainment (1-hour and 8-hour)
CO	1 hour	20 ppm	35 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
	8 hours	9.0 ppm	9.0 ppm			State: Attainment
	8 hours (Lake Tahoe)	6 ppm	—			
Respirable Particulate Matter (PM_{10})[d]	24 hours	50 µg/m^3	150 µg/m^3	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
	Annual	20 µg/m^3	— (expected number of days above standard < or equal to 1)			State: Nonattainment
Fine Particulate	24 hours	—	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and	Federal: Serious Nonattainment

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
Matter ($PM_{2.5}$)[d]	Annual	12 µg/m^3	9.0 µg/m^3	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 $PM_{2.5}$.	agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants. including NO_X, SO_X, ammonia, and ROG.	State: Nonattainment
	Secondary Standard (annual)	—	15 µg/m^3 (98th percentile over 3 years)			
NO_2[e]	1 hour	0.18 ppm	100 ppb (98th percentile over 3 years)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NOx" group of O_3 precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment/ Maintenance
	Annual	0.030 ppm	0.053 ppm			State: Attainment
SO_2[f]	1 hour	0.25 ppm	75 ppb (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and 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
	3 hours	0.04 ppm	0.5 ppm			State: Attainment/ Unclassified
	24 hours	—	0.14 ppm			
	Annual Arithmetic Mean	—	0.03 ppm			
Pb[g,h]	Monthly	1.5 µg/m^3	—	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and	Pb-based industrial processes like battery production and smelters. Pb paint, leaded gasoline. Aerially	Federal: Nonattainment (Los Angeles County only)

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
	Calendar Quarter	—	1.5 µg/m^3	neurological dysfunction. Also a TAC and water pollutant.	deposited Pb from gasoline may exist in soils along major roads.	State: Attainment
	Rolling 3-month average	—	0.15 µg/m^3			
Sulfate	24 hours	25 µg/m^3	—	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: —
						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: —
						State: Attainment/ Unclassified
Visibility Reducing Particles[i]	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: —
						State: Attainment/ Unclassified

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
Vinyl Chloride[g]	24 hours	0.01 ppm	—	Neurological effects, liver damage, cancer. Also considered a TAC.	Industrial processes	Federal: — State: Attainment/ Unclassified

Notes:

[a] *California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, 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 CCR. Pollutants with "—" indicated there is no state standard attributed to that pollutant. [b]National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Pollutants with "—" indicated there is no federal standard attributed to that pollutant.*

[c] *On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.*

[d] *On May 2024 the national annual $PM_{2.5}$ primary standard was changed from 12.0 µg/m^3 to 9.0 µg/m^3. In accordance with the FCAA, U.S. EPA will determine which areas of the country meet the standards, i.e., make initial attainment/nonattainment designations. U.S. EPA generally makes designations within 2 years after new standards are issued, and at the time of this analysis, the designation for the basin has not been updated. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.*

[e] *To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.*

[f] *On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.*

[g] *The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

[h] *The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.*

[i] *In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.*

µg/m^3=micrograms per cubic meter; Basin= South Coast Air Basin; CARB=California Air Resources Board; CCR=California Code of Regulations; CO=carbon monoxide; DPM=diesel particulate matter; FCAA=Federal Clean Air Act; NAAQS=National Ambient Air Quality Standards; NO_2=nitrogen dioxide; NOx=nitrogen oxides; O_3=ozone; Pb=lead; $PM_{2.5}$=particles of 2.5 microns or less; PM_{10}=particles of 10 microns or less; ppb=parts per billion; ppm=parts per million; ROG=reactive organic gas; SIP=State Implementation Plan; SO_2=sulfur dioxide; TAC=toxic air contaminant; VOC=volatile organic compound

3.5.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would exceed:

- General Conformity *de minimis* levels for the South Coast Air Basin (SCAB).
- Annual GHG emissions of 25,000 MT of carbon monoxide equivalent (CO_2e).

Geographic Area Considered

For the purposes of evaluating air quality and global climate change impacts, the geographic area considered extends beyond the Project study area that was used to generally characterize the affected environment. Table 3.5-3 provides a general definition of each geographic area considered for the air quality and global climate change evaluation.

Table 3.5-3. Geographic Areas Considered for Air Quality and Global Climate Change

General Definition	Geographic Area Considered
Air Quality	
Regional	South Coast Air Basin
Local	Project Footprint plus one quarter mile buffer for identification of sensitive receptors. The Health Risk Assessment in the Final EIR, and updated in the Supplemental EIR, considered receptors within a 2-kilometer buffer of the Project Footprint.
Global Climate Change	
Global	Worldwide
Federal/National	United States
State	State of California

Methodology

The following provides a summary of the methodology and effect criteria used to determine potential effects on air quality and global climate change as a result of the No Action Alternative and the Build Alternative. Railroad improvements to the BNSF Malabar Yard in the City of Vernon are required as mitigation for the Build Alternative to offset the loss of storage track capacity at the BNSF West Bank Yard.

To account for the entirety of all Project-related emissions, the construction and operational emissions from the Malabar Yard railroad improvements as presented in Appendix Q of this EIS are included in the analysis, as discussed below.

- **No Action Alternative:** By 2040, all of the trains operating at LAUS are assumed to meet Tier 4 emission standards; therefore, a large reduction in emissions between 2016 and 2040 is anticipated to occur resulting from the No Action Alterative. The reduction in emissions between 2016 and future years 2026, 2031, and 2040 is incorporated into this analysis. In addition to meeting Tier 4 emission standards by 2040, both Metrolink and Amtrak have converted to using renewable diesel as of 2023. These emission reductions have been included in the analysis of the No Action Alternative and the Build Alternative for future years 2026, 2031, and 2040. Under the No Action Alternative, the Malabar Yard railroad improvements would not be implemented.
- **Build Alternative**
    - **Construction:** The air quality and GHG construction emissions reflect the additional haul truck trips, earth movement, and material handling required for the Build Alternative with a new expanded passageway approximately four times the width of the existing 28-foot-wide pedestrian passageway. Construction of the Malabar Yard railroad improvements would overlap the construction of the Build Alternative, so the emissions have therefore been combined in the emissions analysis.
    - **Operations:** The proposed capacity enhancements associated with the Build Alternative could facilitate a future increase in train movements through LAUS within the Project study area. Although substantial investments in non-Project related infrastructure outside of the Project study area are required to realize substantial increases in service and associated train movements through LAUS, this analysis includes a conservative evaluation of localized air quality effects and GHG emissions resulting from increased train movements through LAUS that could occur from implementation of the Build Alternative. It should be noted that other non-Project related capacity enhancements are required as part of the SCRRA's SCORE Program to realize the maximum train movements through LAUS considered in this evaluation. The operational emissions from the Build Alternative are combined with projected operational regional benefits from the Malabar Yard railroad improvements starting in 2031. Malabar Yard regional benefits were calculated for Year 1, Year 20, and Year 30. Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel, resulting in reduced fuel consumption by rail and associated rail emissions. In addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth, thereby avoiding the diversion of rail served demand to long-haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and associated truck emissions.

Within the limits of the Project study area, a localized air quality analysis was conducted based on proposed capacity enhancements and associated increases in train movements through LAUS for 2026 (interim condition), 2031 (full build-out condition), and the 2040 horizon year. Effects of the Build Alternative are presented without taking into consideration reductions in regional VMT because any reductions in VMT and associated GHG emissions are considered cumulative benefits.

The Build Alternative accommodates the planned HSR system within the limits of the Project footprint. Indirect emissions associated with the operation of the planned HSR system are not included in this analysis and are addressed separately in the environmental document(s) prepared by CHSRA for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

Cumulative Effects. Increases in service that occur regionally are considered cumulative effects, and for the purposes of this analysis, are evaluated for the 2040 horizon year. Future service scenarios would depend on ongoing negotiations among the railroad operators, available infrastructure (corridors, maintenance facilities, etc.) throughout the Metrolink system and beyond, and available operating funding from the Metrolink JPA member agencies, including, but not limited to, Amtrak, the Los Angeles-San Diego-San Luis Obispo Rail Corridor Agency, and Metro. Implementation of off-site infrastructure to implement future increases in service is the responsibility of the service operators or JPA member agencies, including the evaluation of related air quality effects that may occur from off-site rail infrastructure improvements.

Criteria Air Pollutants. Emissions of criteria air pollutants were estimated using existing conditions information, detailed construction scenarios prepared for the Build Alternative and Malabar Yard railroad improvements, estimates for future train movements through LAUS, as well as a combination of emission factors from the following sources:[3]

- CARB modeling software EMFAC2017[4] and South Coast Air Quality Management District (SCAQMD)'s Off-Road Mobile Source Emission Factors[5] for estimating exhaust emissions from off-road construction equipment and on-road motor vehicles.
- U.S. EPA re-entrained paved road dust methodology.
- U.S. EPA locomotive emission factors for locomotives and associated methodology.

[3] The following models were appropriate at the time the Notice of Intent (NOI) for the Project was issued. Since then, regulatory agencies have updated air quality models to newer versions with updated emission factors. As the baseline was established at the time of the NOI (and Notice Of Preparation for the CEQA analysis per CEQA Guidelines Section 15125), this NEPA analysis maintains the same emission calculations and methodology for consistency purposes. As the CEQA analysis was completed and the Final EIR was published in 2019, this baseline has not changed. The updates to the air quality models generally lower the emission factors in the long term, resulting in fewer emissions, so the CEQA analysis and corresponding NEPA analysis presented in this Final EIS for air quality still represent a conservative analysis in the long term.

[4] The latest version of EMFAC at the time of the analysis was EMFAC2017. Since then, EMFAC2021 has been approved by the U.S. EPA.

[5] While SCAQMD's Off-Road Mobile Source Emission Factors was used for the analysis, off-road emission factors have been updated to more recent versions from CARB including OFFROAD2017 and OFFROAD2021.

- CalEEMod (Version 2016.3.2)[6] emission calculation methodologies for calculating the long-term mobile, energy, and area source emissions.
- U.S. EPA's AERMOD version 23132 (released October 23, 2023) was used to conduct dispersion modeling[7] where exhaust PM_{10} emissions served as a proxy for diesel particulate matter (DPM). For further description of the methodology used for the localized analysis, refer to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025.

Quantification of GHGs. For the purposes of determining whether or not GHG emissions from affected projects are adverse, the construction emissions were amortized over the life of the Project (defined as 30 years), added to the operational emissions, and compared to the federal reporting threshold.

Federal General Conformity *De Minimis* Levels

The U.S. EPA General Conformity Rule establishes a process to demonstrate that federal actions would be consistent with applicable SIPs and would not cause or contribute to new violations of the NAAQS, increase the frequency or severity of existing violations of the NAAQS, or delay the timely attainment of the NAAQS. The general conformity *de minimis* levels are defined in 40 CFR 93.153(b). Based on the attainment status, the *de minimis* levels that apply to all direct and indirect emissions generated during construction and operation of a project are shown in Table 3.5-4.[8]

Table 3.5-4. General Conformity *De Minimis* Levels for the South Coast Air Basin

Pollutant	Tons/year
NOx	10
VOC	10
PM_{10}	100
$PM_{2.5}$	70
CO	100

[6] The latest version of CalEEMod at the time of the analysis was Version 2016.3.2. Since then, Version 2020.4.0 has been released and a newer, web-based Version 2022.1 has been launched. Construction emissions for Malabar Yard were re-calculated using CalEEMod Version 2020.4.0 for this EIS to reflect the revised construction years of 2028 to 2030.

[7] In addition to the AERMOD model update to version 24142, AERMOD View version 13 has since been released, but the changes do not affect results of the modeling.

[8] *De minimis* levels are lower for pollutants that have design values farther from the ambient air quality standard. For the Basin, ozone (VOC and NOx) is in an extreme nonattainment area, PM_{10} is in an attainment/maintenance area, $PM_{2.5}$ is in serious nonattainment area, and CO is in a maintenance area.

Table 3.5-4. General Conformity *De Minimis* Levels for the South Coast Air Basin

Pollutant	Tons/year
SO_2	N/A

Source: U.S. EPA 2016
Notes:
***CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; VOC=volatile organic compounds; SO_2= sulfur dioxide; U.S. EPA= United States Environmental Protection Agency SO_2 is in attainment for the South Coast Air Basin, so there is no applicable de minimis* level.**

To determine if the Build Alternative would exceed the *de minimis* levels, calculations for an average year and total construction emissions were calculated and compared to the thresholds.

General Conformity Evaluation

Although CHSRA is the lead NEPA agency for this EIS, consistent with 23 USC 327 and the July 23, 2019, NEPA Assignment MOU executed between FRA and the State of California, FRA retains its obligations to make general conformity determinations under the FCAA. CHSRA and FRA have agreed to collaborate on the approach for achieving general conformity and development of general conformity determinations, as needed. Based on the quantitative analysis of emissions, the annual construction emissions and annual net change in operational emissions for all analysis years generated by the Build Alternative, as compared to the No Action Alternative, are below the general conformity *de minimis* levels over the 6-year period of construction anticipated between the years 2026 through 2031 with implementation of mitigation. The emissions analysis is included in Appendix G of this Final EIS. As a result, FRA is expected to conclude that implementing the Build Alternative would not exceed the *de minimis* levels for applicable criteria pollutants in the Basin and a formal general conformity determination is not required. A Record of Non-Applicability (RONA) is being developed to demonstrate compliance with the General Conformity rule. The General Conformity rule ensures that actions taken by FRA do not interfere with a state's plans to attain and maintain NAAQS and plays an important role in helping those states and tribes improve air quality in their areas that do not meet the NAAQS. FRA will consider comments relevant to air quality received by CHSRA during the public comment period on the Draft EIS/SEIR.

Greenhouse Gas Emissions

Pursuant to 40 CFR Part 98 (the Mandatory Reporting of GHGs Rule), U.S. EPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of CO_2e emissions per year.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below. Mitigation measures to minimize air quality

and global climate change effects during construction and operations is discussed in Section 3.5.6.

Federal General Conformity

Project-related effects would be considered adverse if either construction or operational emissions were calculated to be above the *de minimis* levels for criteria air pollutants.

Greenhouse Gas Emissions

Project-related effects would be considered adverse if the combined total annual GHG emissions from construction and operations are greater than the federal reporting threshold of 25,000 MT of CO_2e per year.

3.5.4 Affected Environment

Regional Setting

The Build Alternative is located in Los Angeles County, an area within the Basin, which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulations in the Basin are administered by SCAQMD, a regional agency created for the Basin.

The Basin 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 Basin, 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. Most of the Basin is relatively arid, with very little rainfall and abundant sunshine during the summer months. 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 Basin 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 affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high air pollution potential.

The greatest air pollution effects in the Basin 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. The combination of poor air dispersion and abundant sunshine provides conditions especially favorable to the formation of photochemical smog and the trapping of particulates and other pollutants. Rainfall can also affect pollutant concentrations as lower rainfall can mean less washing of road surfaces and drier ground surfaces, which can lead to enhanced resuspension of fugitive dust by moving vehicles and wind. Less rain further reduces the natural

air pollution cleansing effect of precipitation due to washout when particulate matter and its precursors are captured and removed by raindrops. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone (O_3) 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 Basin and adjacent desert.

Climate

The annual average temperature varies little throughout the Basin, 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 LAUS, is 74.0 degrees Fahrenheit and the annual average minimum is 55.8 degrees Fahrenheit (Western Regional Climate Center 2018). In the Basin, there was an average of 26.2 days per year with precipitation from 2018–2020 (SCAQMD 2022).

Local Setting

SCAQMD monitors air quality conditions at 37 locations throughout the Basin. The closest monitoring station to the Project study area is the Los Angeles North Main Street Station. With respect to NAAQS, the U.S. EPA has classified the Basin as attainment/maintenance for carbon monoxide (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).

Sensitive Receptors

Sensitive populations are more susceptible to the effects 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 healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 2021). SCAQMD considers a sensitive receptor to be a receptor where it is possible that an individual could remain for 24 hours. Commercial and industrial facilities are not included in the definition of sensitive receptor because employees do not typically remain onsite for a full 24 hours, but are present for shorter periods of time, such as eight hours (SCAQMD 2008). The majority of the sensitive receptors within one quarter mile of the Project footprint are residential uses, but there are also childcare facilities, hospitals/clinics, jails/correctional facilities, parks/recreational areas, and schools.

The sensitive receptors within one quarter mile of the Project footprint that were considered for the localized air quality analysis are summarized below and depicted in Figure 3.5-1:

- William Mead Homes
- Mozaic Apartments

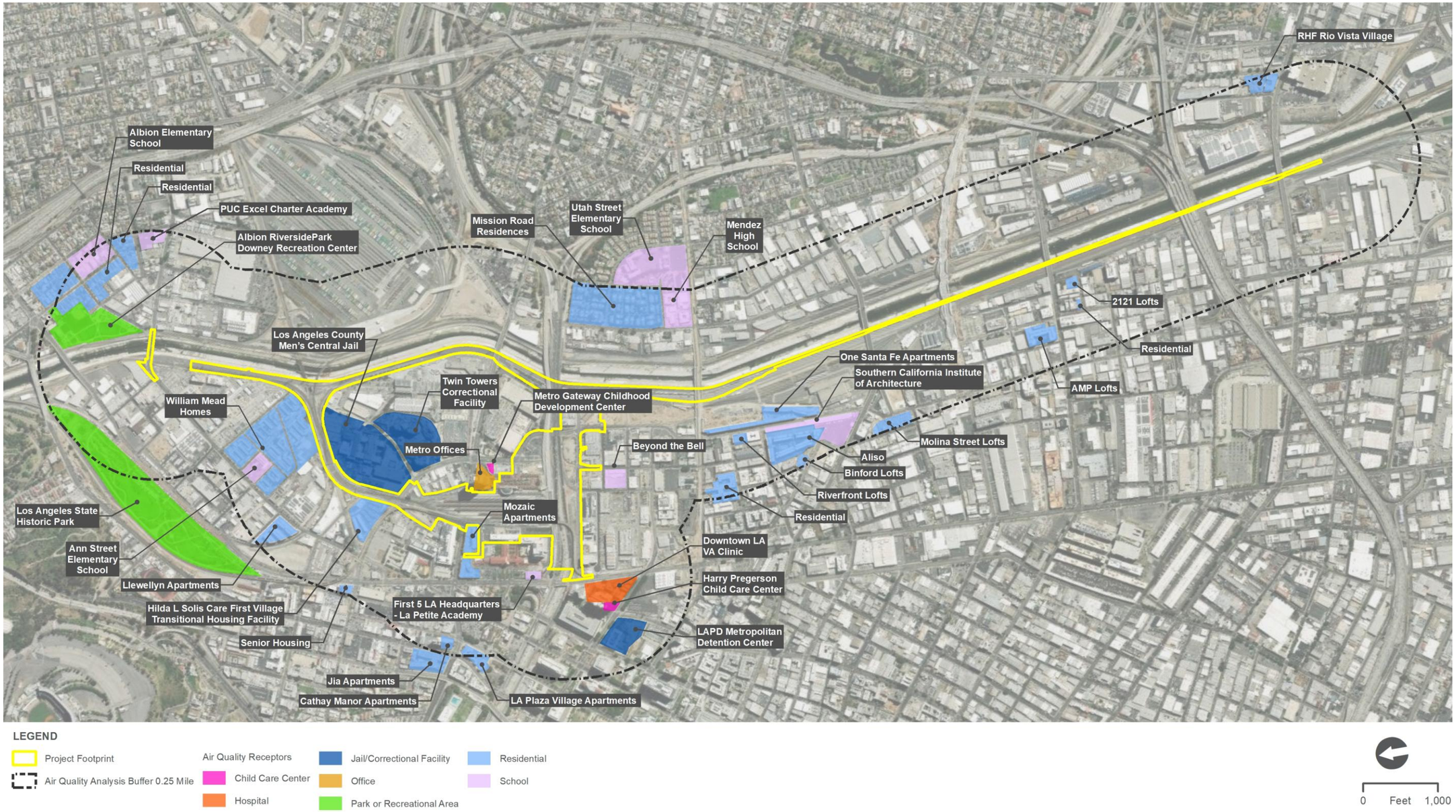
- Utah Street Elementary School
- Twin Towers Correctional Facility
- Los Angeles County Men's Central Jail
- One Santa Fe Apartments
- Metro Offices
- Ann Street Elementary School
- Mission Road Residences
- Mendez High School
- First 5 LA Headquarters (La Petite Academy)
- Hilda L. Solis Care First Village Transitional Housing Facility
- Harry Pregerson Child Care Center
- LAPD Metropolitan Detention Center
- Albion Elementary School
- PUC Excel Charter Academy
- Beyond the Bell School
- Metro Gateway Childhood Development Center
- Southern California Institute of Architecture
- Riverfront Lofts
- Binford Lofts
- Aliso residences
- Llewellyn Apartments
- Molina Street Lofts
- AMP Lofts
- 2121 Lofts
- RHF Rio Vista Village
- Senior housing (North Alameda Street and Alpine Street)
- Jia Apartments
- Cathay Manor Apartments
- LA Plaza Village Apartments
- City of LA Medical Services Division

- Downtown LA VA Clinic
- Los Angeles State Historic Park
- Albion Riverside Park/Downey Recreation Center

As stated in Table 3.5-3, the health risk assessment completed for the Project included sensitive receptors beyond one quarter mile of the Project footprint. The health risk assessment included sensitive receptors within a 2-kilometer (approximately 1.25 miles) buffer of the Project footprint.

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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

In the U.S. in 2021, the main source of GHG emissions is transportation, followed by electricity generation. Similarly in California, 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 carbon dioxide (CO_2), mostly from fossil fuel combustion.

GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP 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 GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP 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. The GWP of CO_2 is 1 by definition and the GWP of methane (CH_4) and nitrous dioxide (N_2O) is 21 and 310, respectively, as provided in the IPCC Second Assessment Report (GHG Protocol 2016). GHG emissions are typically measured in terms of pounds or tons of CO_2e.

3.5.5 Environmental Consequences

TOPIC 3.5-A	General Conformity *de minimis* levels for the South Coast Air Basin

No Action Alternative

Under the No Action Alternative, the existing stub end rail yard 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. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. The 2020 RTP/SCS contains a list of projects that would be consistent with the region's air quality and GHG goals and growth strategy.

No construction-related emissions would occur. 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. Although no increase in emissions of criteria air pollutants would occur because train movements are anticipated to remain similar to existing conditions, infill development associated with reasonably foreseeable projects could potentially increase emissions under the No Action Alternative. However, implementation of the strategies

outlined in the 2020 RTP/SCS would continue to reduce GHG emissions by 2045. The 2020 RTP/SCS focuses on increasing transit use, carpooling, and active transportation, which reduces VMT per capita. With less single occupancy vehicles on the road, there will be less tailpipe emissions, resulting in improved air quality and fewer GHG emissions. Compliance with SCAQMD rules would help achieve compliance with applicable air quality standards and thereby reduce emissions under the No Action Alternative.

Build Alternative (including Malabar Yard Railroad Improvements)

Direct Effects – Construction

Construction activities associated with implementation of the Build Alternative and the Malabar Yard railroad improvements have the potential to create air quality effects 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. In addition, earthwork activities would result in fugitive dust emissions and paving operations would also 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 effects considers each of these potential sources.

Construction activities produce combustion emissions from various sources, such as utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust emissions from these sources would vary daily as construction progresses. The use of construction equipment on site would result in localized exhaust emissions. Construction-related effects can also occur because of relocated emissions from traffic on temporarily relocated or diverted tracks. While the actual amount of emissions may not increase if traffic volumes and operating conditions do not change, the effect of emissions may increase if they are moved closer to sensitive receptors or if traffic temporarily increases in the vicinity of sensitive receptor locations.

Equipment Exhaust and Related Construction Activities

The construction equipment hours, haul truck trips, and employee commute trips required to construct the Build Alternative and Malabar Yard railroad improvements were estimated. For the Build Alternative, the construction phasing approach used for the environmental evaluation is based on a conservative estimate of typical construction activities because it assumes all major Project elements would be constructed concurrently (lead tracks, elevated rail yard, run-through tracks, and concourse-related improvements) over a 6-year timeframe. The total construction emissions were calculated using the equipment list and U.S. EPA and SCAQMD emission rates and divided evenly by year across the 6-year construction schedule. As construction activities would be occurring in all segments of the Project study area throughout the 6-year duration with no one year having substantially greater or less intensity of construction activity, the estimated construction emissions for the average year are used as the total annual emissions and then combined with the construction emissions estimated for the Malabar Yard railroad improvements

for comparison to *de minimis* levels. Consistent with 40 CFR Part 93.153(b) Applicability, "a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b)(1) or (2) of this section." As the major components of the Build Alternative would be constructed concurrently with major construction activity rotating throughout the site and overlapping in time, the total construction emissions split across the 6-year timeframe would be representative of the total annual construction emissions in any year during construction. As construction of the Malabar Yard railroad improvements would overlap this 6-year timeframe for the Build Alternative, construction emissions for both activities were combined.

The total annual construction emissions generated during the average construction year for the Build Alternative and maximum year for the Malabar Yard railroad improvements are listed in Table 3.5-5, which indicates that the total annual construction emissions associated with the Build Alternative and Malabar Yard railroad improvements combined would exceed the *de minimis* level for nitrogen oxides (NOx), thereby resulting in an adverse effect. Implementation of Mitigation Measure AQ-2 (described in Section 3.5.6) and Malabar Yard Mitigation Measure AQ-2 (described in Appendix Q of this EIS) requires all on-site construction equipment greater than 50 horsepower 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, including NOx, by up to 95 percent when compared with the average construction fleet for the Basin.

Table 3.5-5. Annual Construction Emissions – Unmitigated (tons/year)

Source[1]	CO	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
Build Alternative						
Off-Road Equipment	119.9	16.8	106.9	8.3	6.0	34,026.0
On-Road Equipment	8.6	0.7	32.1	3.5	1.4	13,876.5
Fugitive Dust	—	—	—	225.0	47.3	—
Total	128.5	17.5	139.0	236.8	54.6	47,902.5
Average Year	21.4	2.9	23.2	39.5	9.1	7,983.8
Malabar Yard Railroad Improvements						
Year - 2028	1.5	0.1	1.2	<0.1	<0.1	276
Year - 2029	5.2	0.5	4.0	0.3	0.2	946
Year - 2030	7.1	0.5	1.9	0.2	<0.1	1,385
Maximum Year	7.1	0.5	4.0	0.3	0.2	1,385

Table 3.5-5. Annual Construction Emissions – Unmitigated (tons/year)

Source[1]	CO	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
Combined Build Alternative and Malabar Yard	28.5	3.4	27.2	39.8	9.3	9,369
de minimis level	100	10	10	100	70	—
Exceedance	No	No	**Yes**	No	No	—

Source: Table 6-1 of the Air Quality and Climate Change Assessment, Appendix G of this EIS.
Notes:
[1] SO_2 is in attainment and does not have an applicable de minimis level in the South Coast Air Basin.
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved areas of the construction site.

$PM_{2.5}$ and PM_{10} emissions from construction activities were calculated using the total acreage that would be disturbed during each construction phase and are included in the emissions listed in Table 3.5-5. As shown in Table 3.5-5, the Build Alternative or Malabar Yard railroad improvements would not exceed the *de minimis* levels for $PM_{2.5}$ and PM_{10}; therefore, no direct adverse effect would occur. SCAQMD has established Rule 403 for reducing fugitive dust emissions through the use of best available control measures. Although applicable levels are not exceeded for PM, Mitigation Measure AQ-1 would still be implemented as a requirement of the Link US Final EIR and Malabar Yard Mitigation Measure AQ-1 would also be implemented pursuant to SCAQMD requirements to reduce daily fugitive dust emissions and associated air quality impacts. Mitigation Measure AQ-1 and Malabar Yard Mitigation Measure AQ-1 is presented in Section 3.5.6 for informational purposes.

Health Risk

The 2019 Final EIR included an analysis of the potential for cancer risk and chronic hazard index to nearby sensitive receptors. As discussed in the Final EIR, after implementation of Mitigation Measure AQ-1 and AQ-2, the impacts associated with exposure of Project-related toxic air contaminants (TAC) emissions on sensitive receptors during construction were reduced to a level less than significant under CEQA. As related to the NEPA impact analysis, Mitigation Measure AQ-1 and AQ-2 would reduce the magnitude of air quality impacts from both the Build Alternative and Malabar Yard Railroad Improvements to sensitive receptors during construction and contribute to a reduction of emissions below *de minimis* levels. The *de minimis* levels are used to

evaluate criteria air pollutant impacts on a regional level. On a local level, PM_{10} exhaust was used as a proxy for DPM to evaluate cancer risk at nearby receptors for the Build Alternative. Despite overlapping construction periods, Malabar Yard was considered separately for health risk as health risk considers more local impacts and the two project areas are miles apart. At Malabar Yard, on-site construction emissions were compared to local screening thresholds from SCAQMD and were found to be below the thresholds for all criteria air pollutants (NOx, CO, PM_{10}, $PM_{2.5}$). Therefore, no modeling was required to evaluate health risk for Malabar Yard. For further description of the localized analysis, refer to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025 and Appendix Q of the Final EIS.

Construction Emissions after Mitigation

Table 3.5-6 identifies the annual mitigated construction emission levels for the Build Alternative and Malabar Yard railroad improvements. As shown in Table 3.5-6, after implementation of Mitigation Measure AQ-2 and Malabar Yard Mitigation Measure AQ-2, the annual NOx emissions would be below the *de minimis* level for the Build Alternative and Malabar Yard railroad improvements combined.

Table 3.5-6. Annual Construction Emissions - After Mitigation (tons/year)

Source	CO	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
Build Alternative						
Off-Road Equipment	31.2	6.5	18.0	3.0	1.4	21,402.3
On-Road Equipment	8.6	0.7	32.1	3.5	1.4	13,876.5
Fugitive Dust	—	—	—	112.5	23.6	—
Total	39.8	7.2	50.1	118.9	26.4	35,278.8
Average Year	6.6	1.2	8.4	19.8	4.4	5,879.8
Malabar Yard Railroad Improvements						
Year - 2028	1.9	<0.1	0.2	<0.1	<0.1	276
Year - 2029	6.5	0.1	0.6	<0.1	<0.1	946
Year - 2030	8.5	0.2	0.8	0.1	<0.1	1,385
Maximum Year	8.5	0.2	0.8	0.1	<0.1	1,385
Combined Build Alternative and Malabar Yard	15.1	1.4	9.1	19.9	4.4	7,265

Table 3.5-6. Annual Construction Emissions - After Mitigation (tons/year)						
Source	**CO**	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
de minimis level	100	10	10	100	70	—
Exceedance?	No	No	No	No	No	—

Source: Table 6-2 of the Air Quality and Climate Change Assessment, Appendix G of this EIS.
Notes:
SO2 is in attainment and does not have an applicable de minimis level in the South Coast Air Basin. CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; $PM_{2.5}$= particles of 2.5 microns or less; PM_{10}=particles of 10 microns or less; ROG=reactive organic gas

Based on these results, the mitigation measures described above would allow the FRA to affirm that the Build Alternative and Malabar Yard railroad improvements does not exceed *de minimis* levels, and therefore, would result in no direct adverse effect to air quality during construction.

Direct Effects – Operations

Long-term air pollutant emission effects are those associated with stationary sources and mobile sources that may occur 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 (U.S. EPA 2009) was used to calculate the rail emissions and CalEEMod was used to calculate the mobile source and energy emissions associated with the Build Alternative. In addition to meeting Tier 4 emission standards by 2040, both Metrolink and Amtrak have converted to using renewable diesel as of 2023. As discussed above, these emission reductions have been considered in the evaluation of the Build Alternative for future years 2026, 2031, and 2040.

An indicator of the Project's regional operational impact is the net influence on emissions in the Project study area for a future year. Table 3.5-7, Table 3.5-8, and Table 3.5-9 present the annual emissions for the 2026, 2031, and 2040 conditions, respectively.

- As shown in Table 3.5-7 and Table 3.5-8, in 2026 and 2031, the annual rail emissions increase with the Build Alternative due to the increase in rail operations and increase in total idling hours. Emissions would exceed the *de minimis* level for NOx in the unmitigated scenario.[9]
- As shown in Table 3.5-9, the net increase in annual emissions associated with operation of the Build Alternative in year 2040 would be offset by the reduction in emissions from the Malabar Yard railroad improvements and would not exceed the *de minimis* level for any criteria pollutant.

[9] Operation of the Build Alternative would reduce dwell times for Metrolink and Amtrak Surfliner thru trains, but this decrease in idling time per train trip would be outweighed by the growth of rail operations.

Mitigation Measure AQ-3 (described in Section 3.5.6) is proposed to reduce the rail exhaust emissions, particularly for NOx. The mitigated annual emissions are presented below under the Operational Emissions after Mitigation header.

Rail emission increases from increased train operations noted in 2040 would also be counteracted by increases in ridership from Metrolink and Amtrak and corresponding reductions in VMT. This analysis conservatively excludes the emissions reductions from the projected decrease in regional VMT. The 2020 RTP/SCS anticipates that implementation of the Connect SoCal program will reduce ROG emissions by 5.3 percent, CO emissions by 5.7 percent, and $PM_{2.5}$ emissions by 4.1 percent compared to the baseline in 2045 (SCAG 2020).

Table 3.5-7. 2026 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail emissions no Project	9.3	22.3	0.7	0.0	0.3	0.3
Rail emissions with Project	16.6	40.0	1.3	0.1	0.6	0.6
Total Project emissions	16.6	40.0	1.3	0.1	0.6	0.6
Net Change	7.3	17.6	0.6	0.0	0.3	0.3
de minimis level	100	10	10	—	100	70
Exceedance	No	Yes	No	—	No	No

Source: Table 6-6 of the Air Quality and Climate Change Assessment, Appendix G of this EIS.
Notes:
The expanded passageway would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.
CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-8. 2031 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Build Alternative						
Rail emissions no Project	9.3	16.0	0.4	0.0	0.2	0.2
Rail emissions with Project	22.1	38.3	1.0	0.0	0.5	0.4
Operational emissions with Project	2.1	1.2	2.6	0.0	1.0	0.3
Total Project emissions	24.3	39.4	3.7	0.1	1.4	0.7
Net Change	15.0	23.4	3.2	0.1	1.2	0.5

Table 3.5-8. 2031 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Malabar Yard Railroad Improvements						
Year 1	0.00	-7.87	0.00	—	-0.12	0.00
Combined Build Alternative and Malabar Yard Railroad Improvements	15.0	15.5	3.2	—	1.1	0.5
de minimis level	100	10	10	—	100	70
Exceedance	No	Yes	No	—	No	No

Source: Table 6-7 of the Air Quality and Climate Change Assessment, Appendix G of this EIS and Table 3.5-6 of the Link US Environmental Evaluation of Malabar Yard Mitigation, Appendix Q of this EIS.
Notes:
CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-9. 2040 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Build Alternative						
Rail emissions no Project	9.3	8.0	0.2	0.0	0.1	0.1
Rail emissions with Project	24.6	21.3	0.5	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	26.3	22.5	3.1	0.1	1.2	0.5
Net Change[1]	17.1	14.4	2.9	0.1	1.1	0.4
Malabar Yard Railroad Improvements						
Year 20	-1.54	-33.31	-0.19	—	-0.57	-0.2
Combined Build Alternative and Malabar Yard Railroad Improvements	15.56	-18.91	2.71	—	0.53	0.2
de minimis level	100	10	10	—	100	70

Table 3.5-9. 2040 Annual Operational Emissions

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Exceedance	No	No	No	—	No	No

Source: Table 6-8 of the Air Quality and Climate Change Assessment, Appendix G of this EIS and Table 3.5-6 of the Link US Environmental Evaluation of Malabar Yard Mitigation, Appendix Q of this EIS.
Notes:
CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Operational Emissions after Mitigation

Mitigation Measure AQ-3 (described in Section 3.5.6) requires implementation of emerging technologies such as electric or alternative fuel technology to reduce the CO, NOx, ROG, PM_{10}, and $PM_{2.5}$ exhaust emissions. 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 the *2018 California State Rail Plan* (Caltrans 2018a). Mitigation Measure AQ-3 allows for a range of emission reduction strategies to reduce operational emissions below SCAQMD thresholds. The mitigated emissions calculated herein demonstrate a potential route to achieving these emission reductions using recent public documents from Metrolink and Amtrak including Metrolink's *2021 Climate Action Plan*, Metrolink's *2023 Zero Emission Report*, Metrolink's *Rail Fleet Management Plan Update FY2020-FY2040*, and Amtrak's *FY22 Sustainability Report*. Both the unmitigated and mitigated scenarios account for renewable diesel for Metrolink and Amtrak trains as that has already been implemented by the operators. This analysis assumes that Metrolink will operate a fully Tier 4 locomotive fleet in the mitigated scenario. Metrolink has already been transitioning their locomotive fleet to Tier 4 as of 2017 and will continue to reduce their locomotive emissions with a goal of 100 percent zero emissions by 2028 for their revenue fleet and 27.5 percent electric trains for the non-revenue light duty fleet emissions in the next 7-10 years (Metrolink 2021a; Metrolink 2021b; Metrolink 2023). Amtrak trains were assumed to incorporate 15 percent Tier 4 locomotives by 2026, 40 percent by 2031, and 80 percent by 2040 (Amtrak 2022). Based on the state of the technology and climate and sustainability goals set by Metrolink and Amtrak, pollutant concentrations are assumed to further decrease by 30 percent in 2026 and 50 percent in 2031 and 2040 with implementation of emerging rail technologies beyond Tier 4.

The mitigated annual emissions are presented in Table 3.5-10, Table 3.5-11, and Table 3.5-12 for the 2026, 2031, and 2040 conditions, respectively. As identified in Table 3.5-10, Table 3.5-11, and Table 3.5-12, the annual emissions would be below the *de minimis* levels after mitigation. While Malabar Yard operational Year 20 would be 2050 and would not directly align with 2040 annual operational emissions of the Build Alternative at LAUS, no mitigation to reduce operational emissions is required because the downward trend in emissions between Year 1 and Year 20 would still result in enough reduced emissions so that *de minimis* levels for any criteria pollutant

are not exceeded. Therefore, the Build Alternative and Malabar Yard railroad improvements would result in no direct adverse effect to air quality during operations.

Table 3.5-10. Annual Operational Emissions (2026) – Mitigated

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Rail Emissions – No Project	9.3	22.3	0.7	0.0	0.3	0.3
Rail Emissions with Project	11.6	11.4	0.1	0.1	0.1	0.1
Total Project Emissions	11.6	11.4	0.1	0.1	0.1	0.1
Net Change	2.4	-11.0	-0.6	0.0	-0.2	-0.2
de minimis level	100	10	10	—	100	70
Exceedance	No	No	No	—	No	No

Source: Table 6-9 of the Air Quality and Climate Change Assessment, Appendix G of this EIS.
Notes:
The expanded passageway would not be constructed by 2026; therefore, no operational emissions generated by on-site uses and vehicle trips are included.

CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-11. Annual Operational Emissions (2031) – Mitigated

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Build Alternative						
Rail emissions no Project	9.3	16.0	0.4	0.0	0.2	0.2
Rail emissions with Project	11.1	9.3	0.1	0.0	0.1	0.1
Operational emissions with Project	2.1	1.2	2.6	0.0	1.0	0.3
Total Project emissions	13.2	10.5	2.7	0.1	1.1	0.4
Net Change	3.9	-5.6	2.3	0.0	0.9	0.2
Malabar Yard Railroad Improvements						
Year 1	0.0	-7.9	0.0	—	-0.1	0.0
Combined Build Alternative and Malabar Yard Railroad Improvements	**3.9**	**-13.5**	**2.3**	—	**0.8**	**0.2**
de minimis level	100	10	10	—	100	70

Table 3.5-11. Annual Operational Emissions (2031) – Mitigated

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Exceedance	No	No	No	—	No	No

Source: Table 6-10 of the Air Quality and Climate Change Assessment, Appendix G of this EIS and Table 3.5-6 of the Link US Environmental Evaluation of Malabar Yard Mitigation, Appendix Q of this EIS.
Notes:
CO=carbon monoxide; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Table 3.5-12. Annual Operational Emissions (2040) – Mitigated

Source	Pollutant Emissions (tons)					
	CO	NOx	ROG	SO_X	PM_{10}	$PM_{2.5}$
Build Alternative						
Rail emissions no Project	9.3	8.0	0.2	0.0	0.1	0.1
Rail emissions with Project	12.3	9.7	0.0	0.1	0.1	0.1
Operational emissions with Project	1.7	1.1	2.6	0.0	1.0	0.3
Total Project emissions	14.0	10.8	2.6	0.1	1.1	0.4
Net Change	4.8	2.8	2.4	0.0	1.0	0.3
Malabar Yard Railroad Improvements						
Year 20	-1.5	-33.3	-0.2	—	-0.6	-0.2
Combined Build Alternative and Malabar Yard Railroad Improvements	**3.3**	**-30.5**	**2.2**	**—**	**0.4**	**0.1**
de minimis level	100	10	10	—	100	70
Exceedance	No	No	No	—	No	No

Source: Table 6-11 of the Air Quality and Climate Change Assessment, Appendix G of this EIS and Table 3.5-6 of the Link US Environmental Evaluation of Malabar Yard Mitigation, Appendix Q of this EIS.
Notes:
CO=carbon monoxide; NOx =nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas; SO_X=sulfur oxides

Health Risk

Emission reductions from use of Tier 4 locomotives, renewable diesel, and implementation of Mitigation Measure AQ-3 (described in Section 3.5.6) would achieve a reduction of pollutant concentrations to below SCAQMD's threshold of 10 in 1 million for cancer risk for the identified

sensitive receptors. Criteria air pollutant emission reductions were carried through for the health risk modeling. Similar to construction, Malabar Yard was considered separately for health risk as health risk considers more local impacts and the two project areas are miles apart. At Malabar Yard, on site operational emissions were compared to local screening thresholds from SCAQMD and were found to be below the thresholds for all criteria air pollutants (NOx, CO, PM_{10}, $PM_{2.5}$). Therefore, no modeling was required to evaluate health risk for Malabar Yard railroad improvements. For further description of the localized analysis of the Build Alternative components at and within the vicinity of LAUS, refer to the updated health risk assessment in the Final SEIR certified by the Metro Board of Directors on October 23, 2025.

Indirect Effects – Construction and Operations

Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. With a growing population, increased density in the downtown Los Angeles area would result in lower per capita emissions from both a building and transportation perspective and serve as a model for sustainable growth. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based air pollutant emissions.

TOPIC 3.5-B	Annual GHG emissions in excess of 25,000 MT of CO_2e

No Action Alternative

Under the No Action Alternative, there would be no Project-related construction activities that would generate additional GHG emissions. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Therefore, infill development associated with reasonably foreseeable projects would potentially increase GHG emissions under the No Action Alternative.

The No Action 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. However, implementation of the strategies outlined in the 2020 RTP/SCS would continue to reduce GHG emissions by 2045 and compliance with SCAQMD rules would help achieve compliance with applicable air quality standards and thereby, reduce emissions under the No Action Alternative. No adverse direct or indirect effect would occur.

Build Alternative (including Malabar Yard Railroad Improvements)

Direct Effects – Construction and 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.

The following activities associated with operations of the Build Alternative 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 Build Alternative 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.** Vehicular traffic would result in GHG emissions from the combustion of fossil fuels. According to the traffic analysis conducted (*Link US Traffic Impact Assessment,* Appendix E of this EIS), 1,428 trips per day are estimated to occur from the on-site office and retail uses.
- **Train Emissions.** As discussed above, the Build Alternative would decrease rail idling emissions at LAUS by improving system efficiency. The Build Alternative facilitates the forecast increase in regional/intercity rail train trips identified in the 2020 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 and not the systemwide change in rail emissions. It should be noted the Build Alternative is a key to facilitating regional GHG emission reductions. Operation of the Malabar Yard railroad improvements would reduce truck VMT, which would be required to make up for the loss of mainline rail network capacity and diversion of rail served demand to long haul trucking. The reduction in truck VMT means reduced fuel consumption by truck, which in turn means reduced GHG emissions.

The projected GHG emissions for the Build Alternative and Malabar Yard railroad improvements would be the summation of the individual sources identified above and the amortized construction emissions. Table 3.5-13 lists the annual GHG emissions that would be generated during construction of the Build Alternative and Malabar Yard railroad improvements. Up to 47,900 tons of CO_2e would be generated during the 6-year construction period for the Build Alternative; this is

equivalent to 43,454 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 would be 1,448.5 metric tons (MT) of CO_2e per year. Demolition, construction, and clearing activities for Malabar Yard railroad improvements would generate approximately 2,608 MT of CO_2e. Amortized over a 30-year period, the approximate life of the Malabar Yard railroad improvements, the yearly contribution to GHG from construction would be 87 MT of CO_2e for a combined total of 1,535 MT of CO_2e. As identified in Table 3.5-13, the total annual GHG emissions from construction and operation of the Build Alternative and Malabar Yard railroad improvements would be approximately 9,524 MT of CO_2e per year, which is less than the federal reporting threshold of 25,000 MT of CO_2e per year. The analysis conservatively assumes the first year of operations for Malabar Yard. The amount of avoided emissions from Malabar Yard would increase substantially by Year 20 and Year 30.

Table 3.5-13. Greenhouse Gas Emissions – Build Alternative and Malabar Yard Railroad Improvements (2040)

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction Emissions for Build Alternative Amortized over 30 Years	0.0	1,447.3	1,447.3	0.1	0.0	1,448.5
Construction Emissions for Malabar Yard Amortized over 30 Years	0.0	86.4	86.4	0.0	0.0	86.9
Combined Construction Emissions Amortized over 30 Years	0.0	1533.7	1533.7	0.1	0.0	1535.4
Operational Emissions for Build Alternative						
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	5,600.7	5,743.0	9.21	0.06	5,992.0

Table 3.5-13. Greenhouse Gas Emissions – Build Alternative and Malabar Yard Railroad Improvements (2040)

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Operational Emissions for Malabar Yard						
Year 1	—	—	-2,857	—	—	-2,857
Rail Emissions						
No Project	0.0	2,979.1	2,979.1	0.0	0.0	2,979.1
Project	0.0	7,832.7	7,832.7	0.0	0.0	7,832.7
Net Change	0.0	4,853.6	4,853.6	0.0	0.0	4,853.6
Total Operational Emissions	—	—	7,739.5	—	—	7,988.6
Total Emissions with Construction	—	—	9,274.9	—	—	9,524.0

Notes:
Bio-CO2=biogenic carbon dioxide; CH_4=methane; CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; N_2O=nitrous oxide; NBio-CO2=nonbiogenic carbon dioxide

Similar to the analysis methodology applied for pollutant emissions, the GHG emission reductions are based on calculations using information from recent public documents from Metrolink and Amtrak including Metrolink's 2021 Climate Action Plan, Metrolink's 2023 Zero Emission Report, Metrolink's Rail Fleet Management Plan Update FY2020-FY2040, and Amtrak's FY22 Sustainability Report.

Although not required to avoid adverse effects related to GHG emissions, Mitigation Measure AQ-3 (described in Section 3.5.6) would reduce the operational GHG emissions from the Build Alternative. Mitigation Measure AQ-3 is estimated to reduce the locomotive emissions by 30 percent in 2026 and by 50 percent in 2031 and 2040. Mitigation Measure AQ-3 allows for a range of potential technologies that are still under development, so these percentages are assumed based on the projected integration of electric trains. Based on the Amtrak FY22 Sustainability Report, Amtrak has set a path to net zero by 2045. Metrolink's 2021 Climate Action Plan sets a moon-shot goal for 100 percent zero emissions by 2028 for the revenue fleet emissions and 27.5 percent electric trains for the non-revenue light duty fleet emissions in the next 7-10 years. As the majority of the trains assumed to operate through LAUS are in the Metrolink revenue fleet, integration of zero emission trains is conservatively assumed as 30 percent by 2026 and 50 percent by 2031 and 2040. This assumption is also consistent with Amtrak's net zero goal by 2045. Table 3.5-14 identifies the mitigated GHG emissions for the Build Alternative and Malabar Yard railroad improvements.

In comparison to the 2016 train movements (baseline year), the Build Alternative would result in 245 additional train movements as early as 2026, 537 additional train movements as early as 2031, and 597 additional train movements as early as 2040. Despite this increase in trips from a localized perspective, GHG emissions would still decrease overall with the implementation of Mitigation Measure AQ-3, which requires implementation of rail fleet emerging technologies.

Table 3.5-14. Greenhouse Gas Emissions – Build Alternative (2040) and Malabar Yard Railroad Improvements – Mitigated

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Construction Emissions for Build Alternative Amortized over 30 Years	0.0	1,065.6	1,065.6	0.1	0.0	1,066.8
Construction Emissions for Malabar Yard Amortized over 30 Years	0.0	86.4	86.4	0.0	0.0	86.9
Combined Construction Emissions Amortized over 30 Years	0.0	1,152.0	1,152.0	0.1	0.0	1,153.7
Operational Emissions for Build Alternative						
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	5,600.7	5,743.0	9.21	0.06	5,992.0
Operational Emissions for Malabar Yard						
Year 1	—	—	-2,857	—	—	-2,857
Rail Emissions						
No Project	0.0	2,979.1	2,979.1	0.0	0.0	2,979.1
Project	0.0	3,916.4	3,916.4	0.0	0.0	3,916.4
Net Change	0.0	937.3	937.3	0.0	0.0	937.3
Total Operational Emissions	—	—	4,072.2	—	—	4,072.2

Table 3.5-14. Greenhouse Gas Emissions – Build Alternative (2040) and Malabar Yard Railroad Improvements – Mitigated

Source	Pollutant Emissions (MT/year)					
	Bio-CO_2	NBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Total Emissions with Construction	—	—	5,225.9	—	—	5,225.9

Notes:
Bio-CO2=biogenic carbon dioxide; CH_4=methane; CO_2=carbon dioxide; CO_2e=carbon dioxide equivalents; MT=metric tons; N_2O=nitrous oxide; NBio-CO2=nonbiogenic carbon dioxide

Indirect Effects – Construction and Operations

Similar to the indirect effects for Topic 3.5-A, operation of the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. With a growing population, increased density in the downtown Los Angeles area would result in lower per capita emissions from both a building and transportation perspective and serve as a model for sustainable growth. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation based GHG emissions.

Furthermore, the direct effects analysis shown in Table 3.5-13 and Table 3.5-14 does not consider the systemwide change in rail emissions. If indirect rail emissions were considered, then regional GHG emissions would be further reduced because of greater rail system efficiency in the network.

3.5.6 Mitigation Measures

The following mitigation measures would minimize adverse effects related to air quality and global climate change. As discussed above, Mitigation Measure AQ-1 is a requirement of the Link US Final EIR and Malabar Yard Mitigation Measure AQ-1 is a requirement of SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts. Although not required as mitigation to reduce adverse effects under NEPA, Mitigation Measure AQ-1 and Malabar Yard Mitigation Measure AQ-1 are presented here to provide a transparent and comprehensive disclosure of the measures that would be implemented during 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 earthmoving, 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 earthmoving 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:

- The construction contractor shall prepare and update on a monthly basis 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 Final 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.

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 forecast 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, who has authority as the owner of Union Station, and CalSTA, 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), 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.

MY AQ-1 (same as Mitigation Measure AQ-1)

MY AQ-2 (same as Mitigation Measure AQ-2)

3.5.7 NEPA Impact Summary

This section summarizes the effects related to air quality and global climate change of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

Under the No Action Alternative, 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. No construction or construction-related criteria air pollutant or GHG emissions would occur and there would be no increase in operational emissions

as train movements would remain similar to existing conditions. Compared to the Build Alternative, the No Action Alternative would avoid adverse effects related to air quality but would not realize the beneficial impacts of reducing GHG emissions by indirectly reducing the number of vehicles on the road and VMT.

Build Alternative

As discussed under Topic 3.5-A, construction of the Build Alternative and Malabar Yard railroad improvements would result in adverse effects on air quality with respect to NOx emissions generated on site. Implementation of Mitigation Measure AQ-2 and Malabar Yard Mitigation Measure AQ-2 would reduce the potential adverse effects to be below the *de minimis* level. During operation, NOx emissions would exceed the *de minimis* level in years 2026 and 2031, thereby requiring mitigation. Mitigation Measure AQ-3 (described in Section 3.5.6) is proposed to further reduce the rail exhaust emissions, particularly for NOx, to below the *de minimis* levels. The Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads.

As discussed under Topic 3.5-B, the total annual GHG emissions from construction and operation would be approximately 9,524 MT of CO_2e per year, which is less than the federal reporting threshold of 25,000 MT of CO_2e per year. Mitigation would not be required to reduce GHG emissions, but implementation of Mitigation Measures AQ-2 and AQ-3 would reduce the construction and operational GHG emissions, respectively.

Consistent with 23 USC 327 and the July 23, 2019, NEPA Assignment MOU, FRA retains its obligations to make general conformity determinations under the CAA. CHSRA and FRA have agreed to collaborate on the development of general conformity determinations. A RONA is being developed to demonstrate compliance with the General Conformity rule.

Table 3.5-15 provides an impact summary for the Build Alternative.

Table 3.5-15. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.5-A: General conformity *de minimis* levels for the South Coast Air Basin	*Construction* Adverse Effect	*Construction* **AQ-1 Fugitive Dust Control** **AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment** **MY AQ-1 Fugitive Dust Control** **MY AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **AQ-3 Adaptive Air Quality Mitigation Plan**	*Operations* No Adverse Effect
	Indirect Beneficial Effect	*Indirect* No mitigation is required	*Indirect* Beneficial Effect
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO_2e	*Construction and Operations* No Adverse Effect	*Construction and Operations* No mitigation is required	*Construction and Operations* No Adverse Effect
	Indirect Beneficial Effect	*Indirect* No mitigation is required	*Indirect* Beneficial Effect

Notes:
CO_2e=carbon dioxide equivalent; EPA=Environmental Protection Agency; NEPA=National Environmental Policy Act; MT=metric tons; U.S.=United States

3.6 Noise and Vibration

3.6.1 Introduction

This section provides an evaluation of potential noise and vibration effects from the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Noise and Vibration Study* (Appendix H of this EIS) and other published sources.

3.6.2 Regulatory Framework

Table 3.6-1 identifies and summarizes federal, state, and local laws, regulations, and plans relevant to noise and vibration.

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
Federal	
The Noise Control Act of 1972 (42 United States Code §4901 et seq.)	The Noise Control Act of 1972 (42 USC Section 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."
Federal Transit Administration *Transit Noise and Vibration Impact Assessment Manual* of 2018	The *Assessment Manual* provides the methodology and impact criteria applicable to conventional passenger rail and transit components associated with the Project.
Federal Railroad Administration *High-Speed Ground Transportation Noise and Vibration Impact Assessment* of 2012	The *Assessment* provides the methodology and impact criteria applicable to the planned HSR system.
40 Code of Federal Regulations Part 201 - Noise Emission Standards for Transportation Equipment; Interstate Rail Carriers	This regulation addresses noise emission standards for transportation equipment/rail carriers.
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(3),* 64 Federal Register 28545-28556 (May 26, 1999)	The FRA's Environmental Procedures require the draft and final EIS to identify any significant changes likely to occur in noise standards established by federal, state, and local standards; especially those enforced by the FRA for railroad equipment, yards and facilities including 49 CFR Part 210 "Railroad Noise Emission Compliance Regulations."
State	
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

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
	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.
Local	
City of Los Angeles Municipal Code	Chapter XI, Noise Regulation, of the LAMC establishes sound measurement procedures 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 a variety of provisions that directly or indirectly mitigate noise effects 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 proposed action; however, construction noise is restricted via Section 41.40 of the LAMC, 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 willfully 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. 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. 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. The city may provide permission to work outside of these hours if it is in the public interest, or where a hardship or

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
	injustice, or unreasonable delay would result from its interruption during the hours provided in Section 41.40 of the LAMC.
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 potential adverse noise effect. 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.

Notes:
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 Effects

Topic Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Noise levels in excess of established general plan, noise ordinance, or agency standards.
- Groundborne vibration and groundborne noise levels.
- Ambient noise levels.

Geographic Area Considered

The FTA screening distances for noise and vibration are the geographic areas used to characterize the affected environment and to determine potential effects related to noise and vibration.

Methodology

FTA*'s Transit Noise and Vibration Impact Assessment* (FTA 2018), as well as FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (FRA 2012) manuals, were followed to evaluate the potential noise and vibration effects, as applicable. Additionally, the operational noise assessment implements the methods provided in Section 3.4 of CHSRA's *Environmental Methodology Guidelines* (CHSRA 2014), as applicable. Noise and vibration effects 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 Build Alternative accommodates the planned HSR system, the FRA and CHSRA procedures are also considered. Potential increases in noise and vibration from HSR operations are not factored into the Project's impact analysis or the overall impact assessment determination for the Project because operation of the planned HSR system is or will be considered in CHSRA's environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

The FTA and FRA methodology identifies a noise screening level assessment, a general noise assessment, and a detailed noise assessment, and includes screening distances for noise assessments based on project systems. For the Project study area, the project system is considered a commuter rail mainline. According to Section 4.3, Step 3, of the FTA manual if noise-sensitive land uses are located within 750 feet of an unobstructed commuter rail mainline centerline or 375 feet of an obstructed (i.e., intervening buildings) commuter rail mainline, then a more detailed analysis should be conducted. Due to the presence of noise-sensitive land uses within the 750 and 375-foot screening distances, the noise effects associated with the Build Alternative were quantified through an in-depth detailed noise assessment. 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 (L_{dn}) noise levels due to existing and future train operations on the current and proposed rail alignment. 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.

For the Project study area, noise metrics used include the following:

- ***Decibel (dB).*** Noise levels are presented on a logarithmic scale to account for the large pressure response range of the human ear and are expressed in units of decibels (dB). A decibel is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing defined as 20 micropascals (µPa). The A-weighted filter is applied to compensate for the frequency response of the human auditory system, known as dBA.
- ***Equivalent sound level (L_{eq}).*** 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.
- ***Maximum sound level (L_{max}).*** 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.

- ***L_{dn}.*** The L_{dn} is the energy 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.
- **Community Noise Equivalent Level (CNEL).** 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).

The operational analysis for the Project study area was conducted for the existing condition (2016), and three scenario years (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 Build Alternative, other regional improvements not a part of the Link US Project, and population growth in the area. The 2026 and 2031 years correspond to the two major phases of when the Build Alternative would be implemented (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 new lead tracks and reconstructed throat, elevated rail yard and concourse-related improvements, and 10 run-through tracks (full build-out condition).
- 2040 – Full operation of HSR service at LAUS.

The operational noise assessment is based on the Build Alternative and the Rail Yard Canopy Design Option 1 – Individual Canopies over Rail Yard. This analysis is conservative and assumes the worst-case scenario because Rail Yard Canopy Design Option 2 – Grand Canopy over Rail Yard includes shielding. Therefore, using the Build Alternative and the individual canopies consider the worst-case scenario for the sensitive receptors closest to the Project study area.

Application of FTA/FRA Methodology for Detailed Noise Assessment – Project Study Area

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 dB level is A-weighted to approximate the human ear's sensitivity to sounds of different frequencies on a

logarithmic scale. 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 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. In general, the strength of groundborne vibration diminishes (or attenuates) fairly rapidly over distance. However, some soil types such as clay or silt can transmit vibration quite efficiently; whereas 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 vibration decibels (VdB).

Land Use Categories

The detailed noise assessment considers three land use categories:

- ***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.

Impact Criteria

The goal of the impact criteria is to maintain an environment considered acceptable for land uses where noise and vibration may have an adverse effect. The noise exposure is quantified 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.

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 effects. Outdoor hourly L_{eq} applies to Categories 1 and 3, whereas outdoor L_{dn} applies to Category 2.

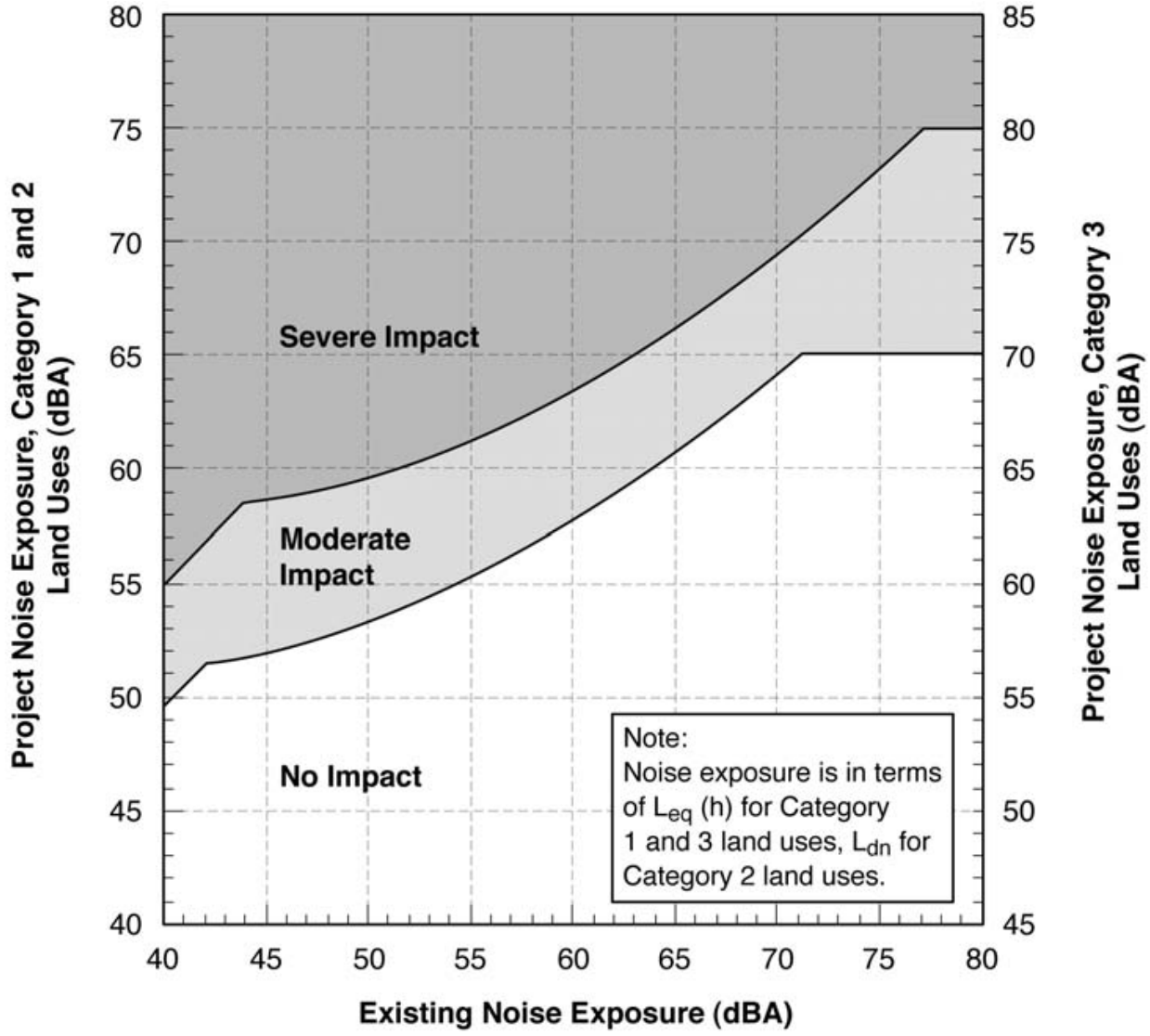
Project noise impacts on these three categories are assessed by comparing existing outdoor noise levels against future outdoor noise levels that may result from the Build Alternative. As shown in Figure 3.6-1, Figure 3.6-2, and Figure 3.6-3, the criterion for each degree of impact is based on a sliding scale where impacts are dependent on the existing noise exposure and the increase in noise exposure due to a 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. The FTA states in its *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) that in cases where changes are proposed to an existing transit system, criteria shown in Figure 3.6-2 and Figure 3.6-3 can be used. For this evaluation, the cumulative noise criteria are appropriate in most areas since the existing facilities are being modified, with an exception being the area immediately south of the LAUS where the new railroad tracks would be constructed.

Application of the criteria would result in one of three outcomes, which are described below:

- ***No impact (effect).*** A project, on average, will result in an insignificant increase in the number of instances when people are "highly annoyed" by new noise. No effect would occur. This impact level would not require mitigation.
- ***Moderate impact (effect).*** The change in cumulative noise is noticeable to most people but may not be sufficient to cause strong, adverse community reactions. No adverse effect would occur. The FRA and FTA manuals indicate mitigation for this impact level should be considered but is not required.
- ***Severe impact (effect).*** A high level of people would be highly annoyed by the noise, perhaps resulting in vigorous community reaction. This would be considered an adverse effect. The FRA and FTA manuals indicate mitigation for this impact level is required.

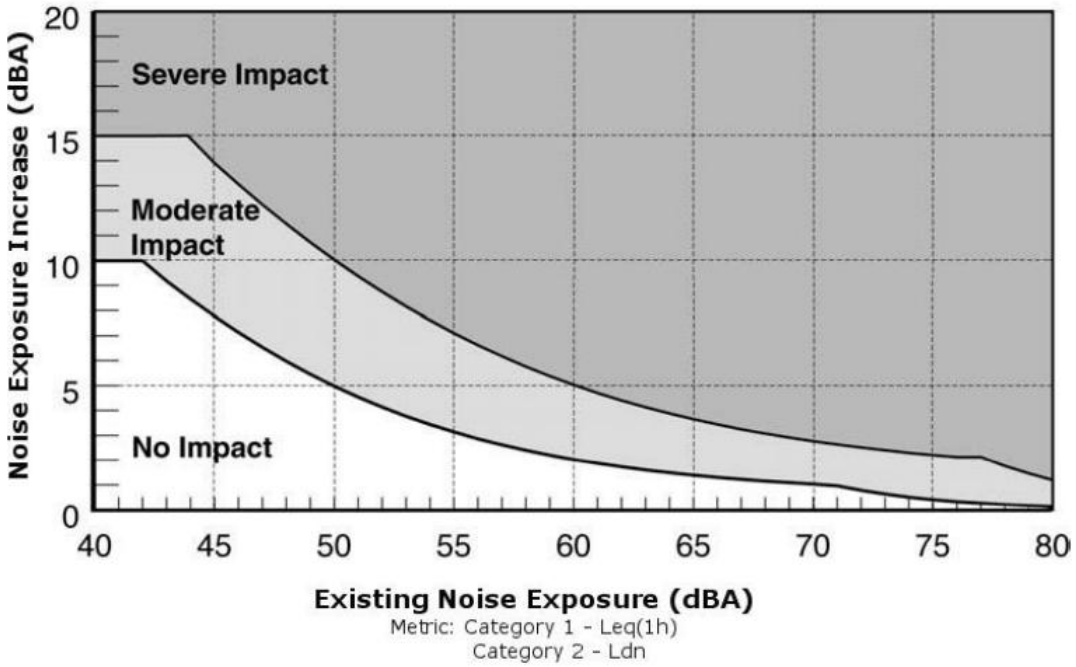
An example of an impact evaluation is FTA's sliding impact criterion for Category 2 receivers. An existing environment of 50 dBA L_{dn} would experience a moderate impact if the Project creates a noise exposure of approximately 53 dBA to 59 dBA L_{dn}, or if there is an increase of 5 to 10 dB. An existing environment of 65 dBA L_{dn} would be classified as having no impact if the 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 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.

Figure 3.6-1. Federal Transit Administration Noise Impact Criteria



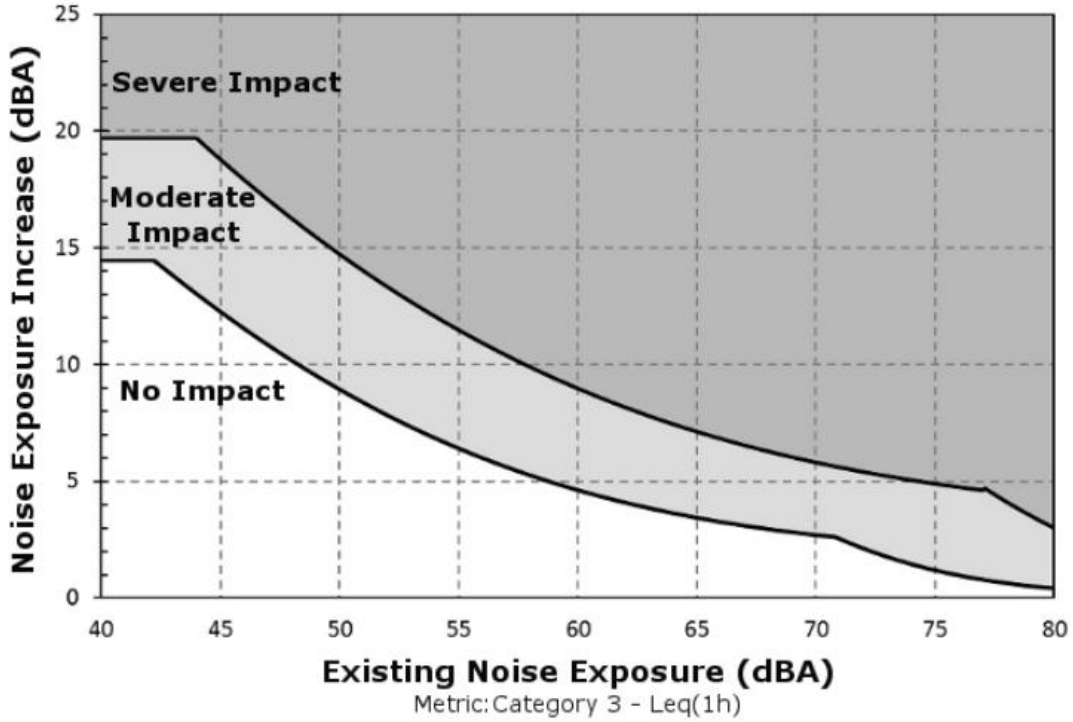
Source: FTA 2018 (Fig. 4-2).

Figure 3.6-2. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 2 Land Use Categories



Source: FTA 2018 (Fig. 4-4)

Figure 3.6-3. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 3 Land Use Categories



Source: FTA 2018 (Fig. 4-4)

Construction Noise

FTA's guidelines for assessment of construction noise, as per the methodology in Section 7 of the FTA manual and Chapter 10 of the FRA manual, which are identical to one another and shown in Table 3.6-2, were used to evaluate noise impacts 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. Federal Transit Administration Detailed Construction Noise Criteria

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: FTA 2018, FRA 2012
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=A-weighted decibels; L_{eq}=equivalent noise level; L_{dn}=day-night average sound level

City of Los Angeles Municipal Code Section 112.05 indicates that sound levels from construction may not exceed 75 dBA unless it is technically infeasible to keep construction noise within this limit.

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 handheld 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 (FTA 2018; FRA 2012).

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 effects was negligible. Where applicable, shielding effects from intervening structures were accounted for using the same shielding calculations used in the rail noise analysis.

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 or flatbed trucks) to 101 dBA L_{eq} (e.g., impact pile driver) at a distance of 50 feet (FHWA 2018). The noise modeling

effort associated with the detailed noise assessment used a conservative construction scenario assuming all major Project components would be constructed together (lead tracks, elevated throat and rail yard, concourse, and run-through tracks) over a 6-year duration, while accounting for the construction fleet and location of proposed construction activities.

Construction Vibration

To assess potential vibration effects 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. The potential for damage to structures from construction vibration was analyzed for noise- and vibration-sensitive land uses where sensitive receptors are located within the screening distances 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 VdB at 25 feet. 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) were utilized.

Table 3.6-3. Typical Construction Equipment Vibration Levels

Equipment/Source		PPV at 25 Feet (inches/second)	Approximate Vibration Velocity Level[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

Table 3.6-3. Typical Construction Equipment Vibration Levels

Equipment/Source		PPV at 25 Feet (inches/second)	Approximate Vibration Velocity Level[a*] at 25 Feet
Jackhammer	—	0.035	79
Small Bulldozer	—	0.003	58

Source: FTA 2018 (Table 7-4)
Notes:
[a*] Root mean square VdB reference 1 microinch per second.
PPV=peak particle velocity; VdB=vibration velocity level 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 (no plaster) have a damage criterion of 0.3 PPV (inches per second). To assess the potential for construction vibration annoyance, the same vibration thresholds as those for operational vibration are applied.

Operational Noise

Rail Noise

The proposed improvements at LAUS require a detailed noise assessment. The noise modeling effort associated with the detailed noise assessment has accounted for the number of train movements anticipated to pass through LAUS during daytime and nighttime hours throughout 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 C of this EIS).
- 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 because it is considered a quiet zone 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 EIS). The general approach of this report included one 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 report 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 evaluation, 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 North 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 Metro obtained, the noise modeling assumes that 100 percent of trains use horns at the North Main Street crossing. Upon implementation of a quiet zone (which restricts horn use) by the City of Los Angeles, the improvements may help to reduce noise at William Mead Homes and Care First Village 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 effect evaluation.
- Future noise exposure would be the combination of the existing noise exposure and the additional noise exposure caused by the Build Alternative. Train movement volumes are projected to increase in the future, as identified in the *Link US Rail Planning Technical Memorandum* (Appendix C of this EIS), and these increases are defined as operational noise sources that may result from the Build Alternative 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 Build Alternative, 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 Build Alternative, 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 Build Alternative, 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 would then utilize 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" effects on noise-sensitive land uses.

Three-Dimensional Predictive Model

For the detailed noise assessment performed for the Project study area, a three-dimensional off-the-shelf predictive model, SoundPLAN software version 8.2, was 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, including paved areas and vegetated areas. The following steps were taken to implement the FTA/FRA standard for rail noise sources in SoundPLAN:

- Step A: FTA/FRA spreadsheets were used to identify source terms (i.e., noise levels) for each train set that would operate on a given rail line at 50 feet.
- Step 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.

- Step 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 C of this EIS), 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 the full build-out condition). The year 2040 corresponds to horizon years and corresponding service goals and objectives of multiple statewide plans and mandates.
- Step D: The scenario years were modeled utilizing the proposed track alignment and configuration, and estimated train movements for each independent rail operator (Metrolink, Amtrak, and CHSRA).
- Step E: Idling train noise was calculated via point sources in the SoundPLAN model, and the source terms were generated using FTA's methods (FTA 2018). Attenuation effects of the point sources were calculated by implementing the International Organization for Standardization's International Standard 9613-2 *Acoustics – Attenuation of Sound during Propagation Outdoors* (International Organization for Standardization 1996).
- Step F: Modeling included terrain contours to capture terrain changes, including those associated with the elevated rail yard.
- Step G: Buildings were modeled as three-dimensional shapes to capture attenuation effects.
- Step 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.

Operational noise levels that may result from the proposed infrastructure in the Project study area were calculated for the 2026, 2031, and 2040 conditions. The noise levels were compared with the relevant noise impact criteria. Noise levels associated with special trackwork, such as crossovers, were also included in this assessment for sensitive receptors located within 200 feet of the alignment. Although CHSRA's *Environmental Methodology Guidelines, Section 3.4,* require excluding these potential sound and vibration sources because regional/intercity rail trains are evaluated, these sources were considered in this assessment.

Wheel Squeal 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 (FTA 2018; FRA 2012).

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 for the alignment 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. Measurements indicated that on some tracks and with some trains squeal occurs intermittently indicating that friction modifiers in the area may be malfunctioning. 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

Due to low trip generation associated directly with the Project compared to the high existing traffic noise levels not associated with the Project, traffic noise was considered part of the existing noise exposure and was not modeled as part of the Project (*Traffic Impact Assessment,* Appendix E of this EIS).

Operational Vibration

FTA and FRA procedures for a general operational vibration assessment (as outlined in Section 6.4 of the FTA manual and Chapter 8 of the FRA manual) were used for the analysis of operational vibration. 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 (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 and Table 6-10 of the FTA manual using the curve for “locomotive-powered passenger or freight” and Table 8-1 of the FRA manual (FRA 2012).
- **Distance from Source to Receiver (Building) Footprints:** The distance between the source (i.e., rail centerline) and the receiver was measured using a 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 well maintained and in good condition (i.e., no flat spots).
- **Number of Floors Above Grade to the Receiver:** The upper floors of William Mead Homes, Mozaic Apartments, and Care First Village were considered relative to the source of potential noise and vibration that may result from the Build Alternative.
- **Soil Characteristics of Ground Between the Vibration Source and Receiver:** Soil propagation characteristics were assumed to be normal (rather than efficient as assumed

in FTA Figure 6-4 and Table 6-10) based on the State Soil Geographic database for California (USDA 2023). FTA guidelines indicate that efficient ground, such as stiff clay soils, can result in propagation of vibration to greater distances. 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 root mean square 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 (FTA 2018). Structure types and associated adjustments were also obtained from the FTA manual (FTA 2018).

The FTA manual provides guidelines to assess human response to different levels of groundborne noise and vibration (Table 3.6-4). The term “frequent events” is defined as more than 70 vibration events per day, “occasional events” is defined as 30 to 70 vibration events per day, and the term “infrequent events” is defined as fewer than 30 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 or where there is otherwise no airborne sound path.

FTA and FRA construction-related vibration guidelines call for investigation of the potential for vibration-induced damage to fragile or extremely fragile buildings (FTA 2018; FRA 2012). Damage to a building is possible (but not necessarily probable) if ground vibration levels exceed the following criteria:

- Exceeds 0.5 inch-per-second PPV (approximately 102 VdB) for reinforced-concrete, steel, or timber.
- Exceeds 0.3 inch-per-second PPV (approximately 98 VdB) for engineered concrete and masonry buildings.
- Exceeds 0.20 inch-per-second PPV (approximately 94 VdB) for fragile buildings.
- Exceeds 0.12 inch-per-second PPV (approximately 90 VdB) for extremely fragile buildings.

Table 3.6-4 presents the groundborne vibration and noise impact criteria. The Project study area does not have any Category 1 land uses (fragile or extremely fragile buildings) within the screening distance. The majority of vibration-sensitive land uses in the Project study area are Category 2 land uses (residential).

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]	—[d]	—[d]	—[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: FTA 2018 (Table 6-3)
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 30 vibration events per day.
[d] 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; VdB=vibration velocity level in decibels

The potential for damage to adjacent architectural resources from operational vibration that may result from the proposed infrastructure in the Project study area 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 uses within the screening distance.

3.6.4 Affected Environment

Noise- and Vibration-Sensitive Land Uses

The following discussion provides a description of the noise- and vibration-sensitive land uses where sensitive receptors are located in the Project study area (Category 2 and 3 land uses). 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, which includes approximately 750 feet from

the alignment where no buildings are present, and 375 feet for areas where intervening buildings are present. Because vibration attenuates more quickly with distance, the vibration analysis is substantially smaller; it includes only those vibration-sensitive land uses and structures within 200 feet of the alignment.

Figure 3.6-4 identifies the noise- and vibration-sensitive land uses where sensitive receptors (Category 2 and 3 land uses) are located within the 750- and 375-foot screening distances, and community noise and vibration measurement locations for modeled receivers. Based on the applicability of the screening distances, noise- and vibration-sensitive land uses included in the detailed assessment include:

- William Mead Homes;
- Care First Village;
- Metro Senior Housing;
- Mozaic Apartments;
- One Santa Fe Apartments
- Ann Street Elementary;
- La Petite Academy (First 5 LA Headquarters);
- Metro Gateway Childhood Development Center;
- Care First Village playground/park and a park (i.e., athletic fields) at the William Mead Homes;
- Los Angeles County Men's Central Jail and Twin Towers Correctional Facility (although these 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 [i.e., sleep disturbance]).

Other Category 2 and 3 land uses that are not included in the detailed assessment are also depicted in Table 3.6-4 for informational purposes.

Existing Noise Environment

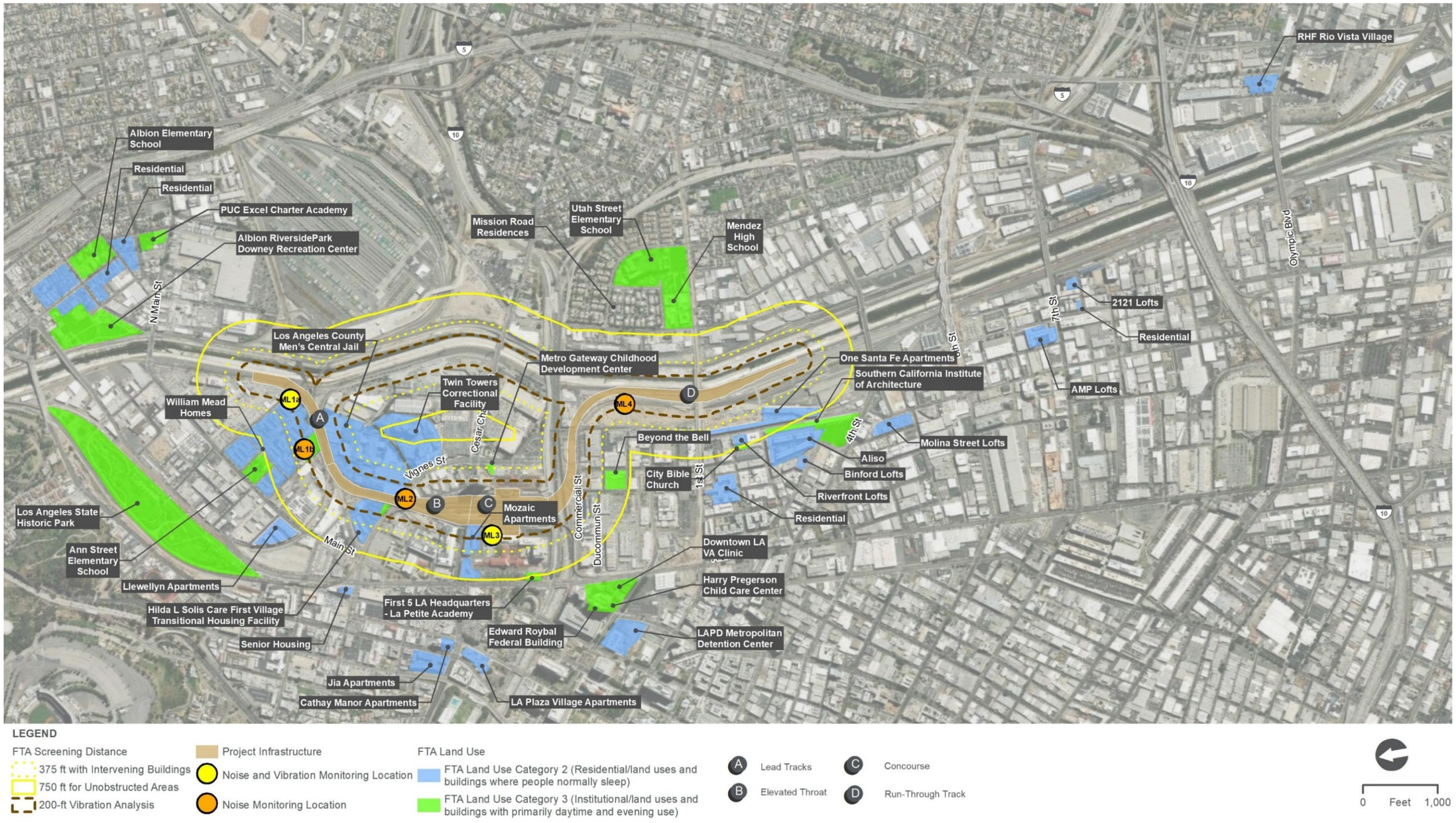
Metro completed a community baseline sound survey at representative locations to identify existing noise exposure at noise-sensitive land uses where sensitive receptors occur within the screening distances. Table 3.6-5 provides the noise levels at noise-sensitive land uses in the Project study area for the existing condition. Noise levels are not substantially different than when data were collected primarily because the train equipment and location of noise generators during the day and night are the same. Additionally, the configuration of sensitive receptors remains the same and no new construction of buildings that would obscure noise-sensitive land uses has occurred.

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) and Care First Village	73	71	66
ML3	Mozaic Apartments (Amtrak Baggage Handling Building) and Metro Gateway Childhood Development Center	67	64	60
ML4	One Santa Fe Apartments and Studios (ESOC)	71	64	64

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes:
dBA=A-weighted decibell; ESOC=Emergency Security Operations Center; ID=identification; L_{dn}=day-night average noise level; L_{eq}=equivalent noise level; ML=monitoring location

Figure 3.6-4. Noise- and Vibration-Sensitive Land Uses, Community Noise and Vibration Measurement Locations, and Sensitive Receptor Clusters



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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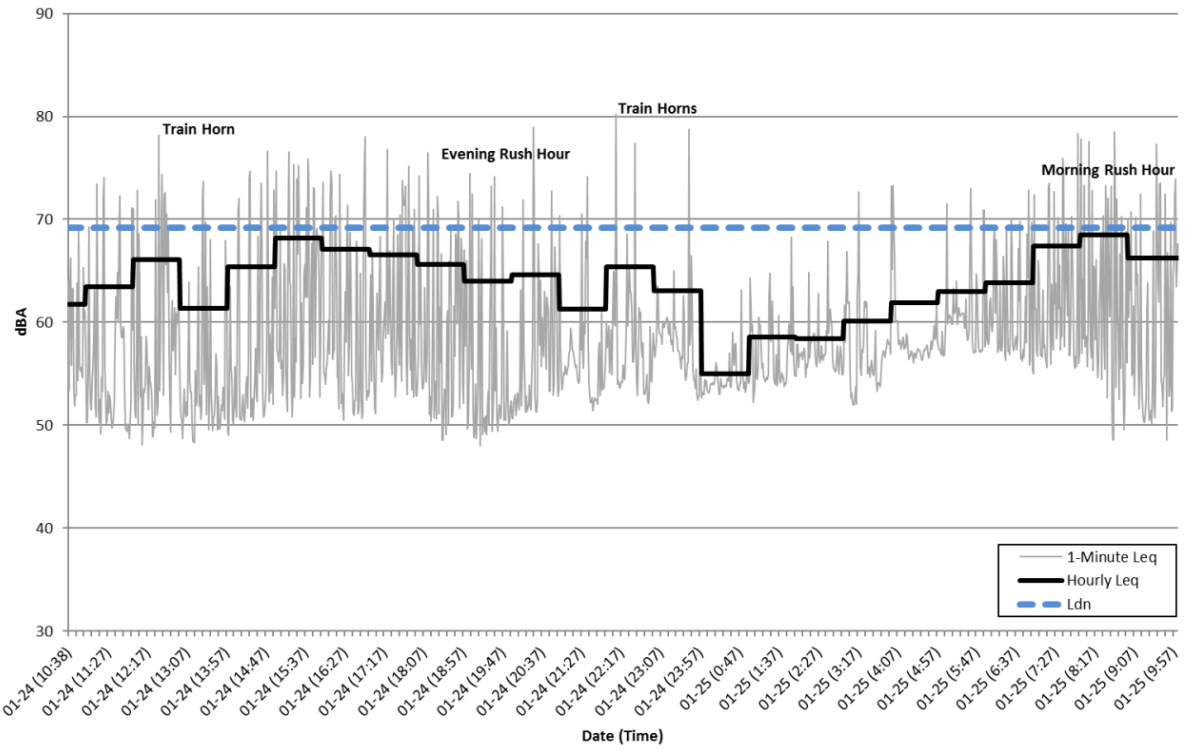
In 2021, the Care First Village was constructed. For the purposes of this evaluation, the existing noise levels at Twin Towers Correctional Facility were used to characterize the noise levels for the Care First Village, mainly since the proximity of these two receptors to the measurement location is similar and ML2 is therefore representative of this area as well.

The narrative below provides a description of the noise measurements performed.

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). 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 during the work week on 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 the *Link US Noise and Vibration Study (*Appendix H of this EIS).

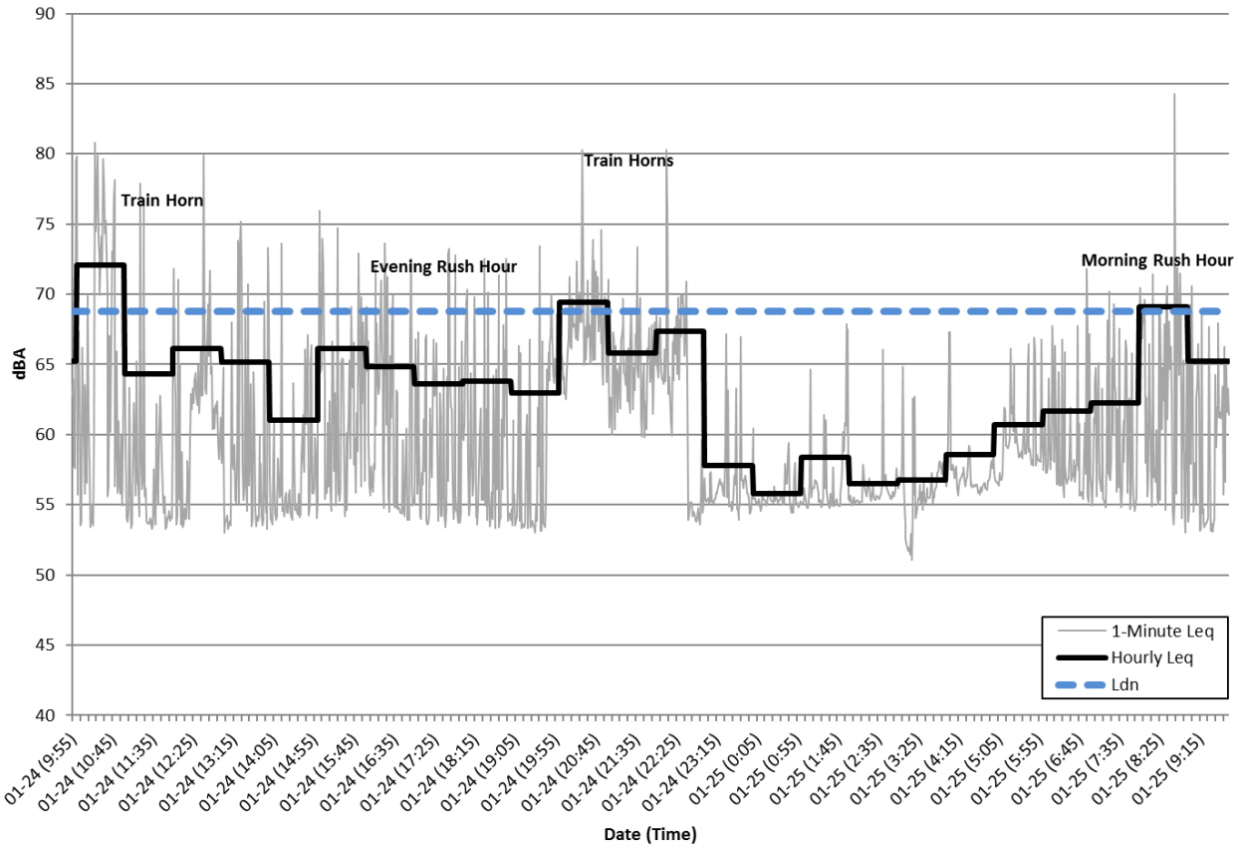
Figure 3.6-5 and Figure 3.6-6 are time history charts of the monitored 1-hour L_{eq} levels.

Figure 3.6-5. Monitoring Location 1a – Hourly Equivalent Noise Level Time History



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

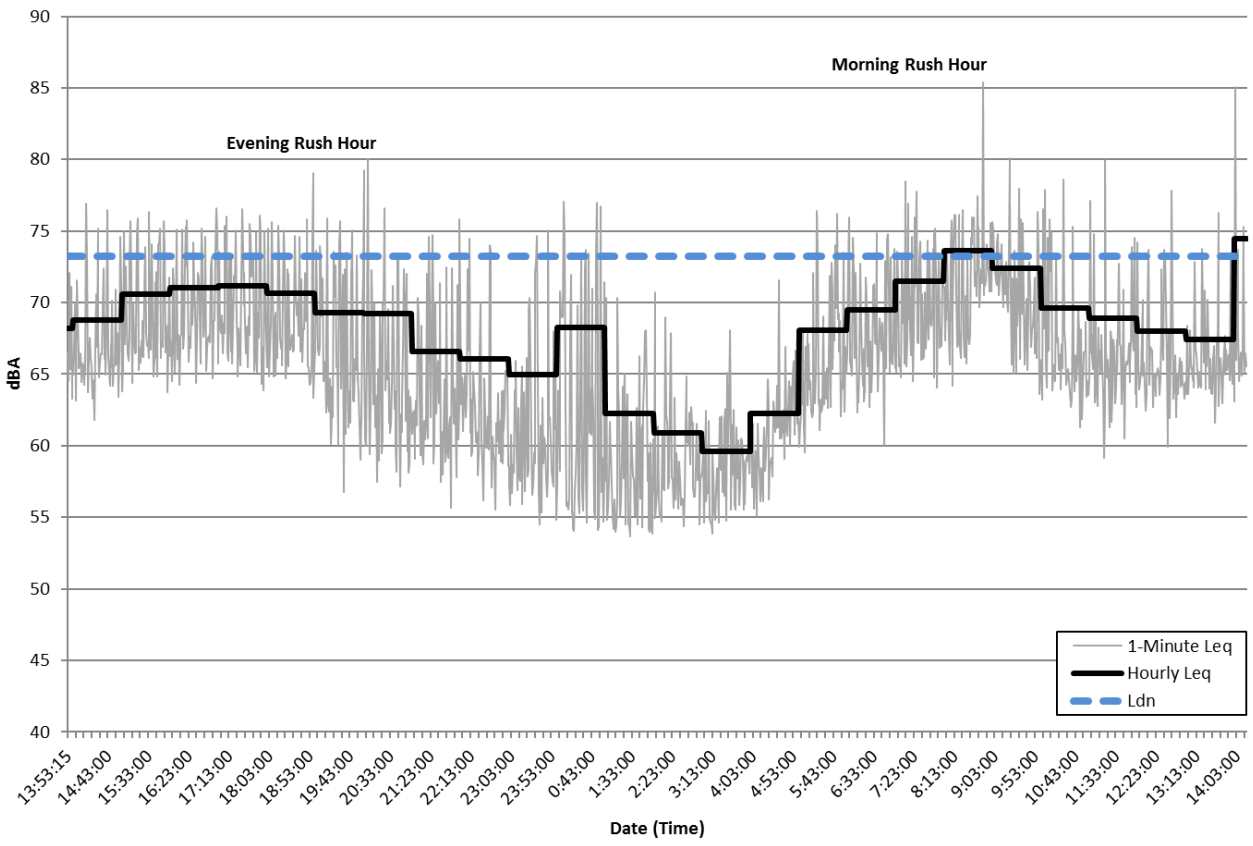
Figure 3.6-6. Monitoring Location 1b – Hourly Equivalent Noise Level Time History



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

ML2 – Twin Towers Correctional Facility. A suitable location to characterize the noise levels for this receptor was determined to be the Terminal Tower, approximately 366 feet from the location of the receptor (Figure 3.6-4). The Terminal Tower location was closer in proximity to the railroad tracks by approximately 43 feet. A noise meter was set up during the work week on January 25, 2017, with the measurements lasting 24 hours. Figure 3.6-7 provides the time-history chart of the measured hourly L_{eq}.

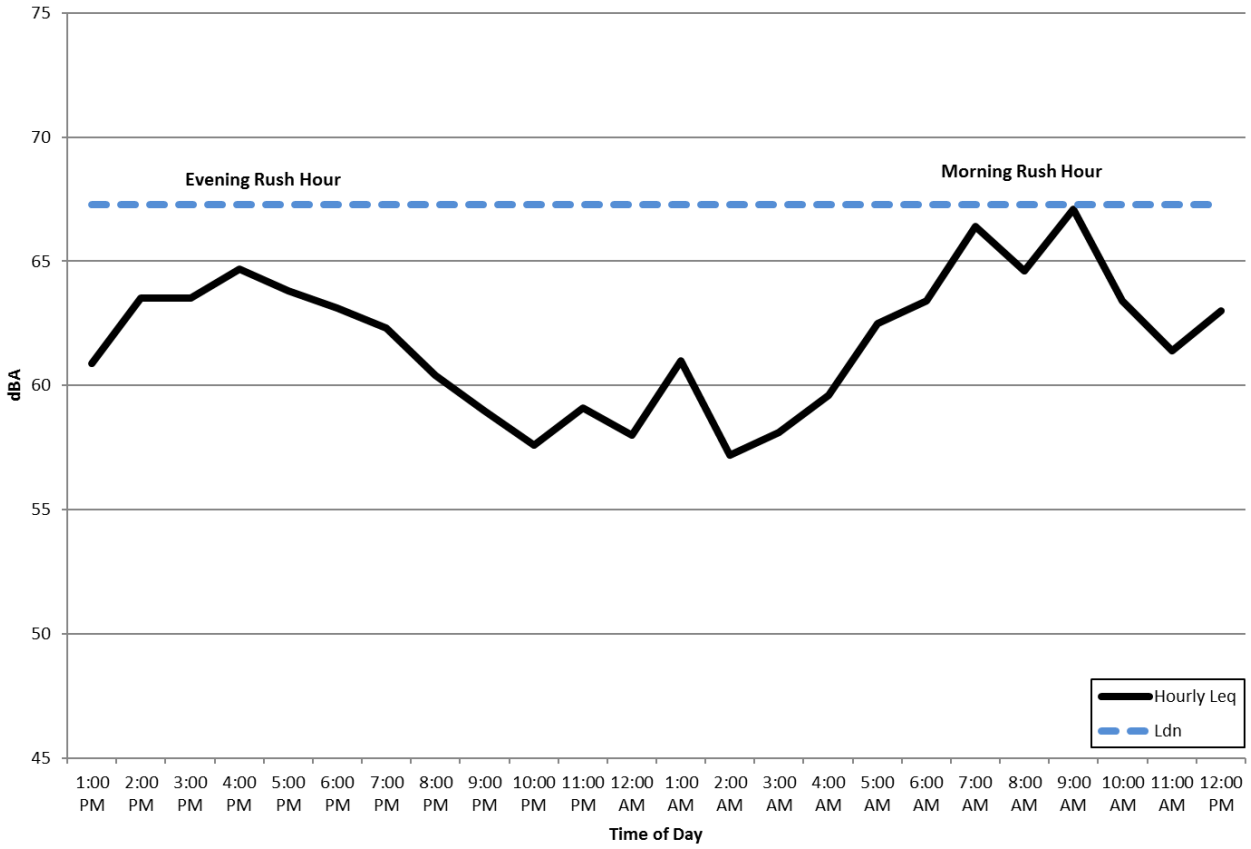
Figure 3.6-7. Monitoring Location 2 – Hourly Equivalent Noise Level Time History



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

ML3 – Mozaic Apartments. Noise monitoring to capture existing ambient conditions, including sounds from the railyard, was conducted adjacent to the Mozaic Apartments on the rooftop of the Amtrak Baggage Handling building (Figure 3.6-4). While not representative of the closest façade of apartment units, ML3 is more representative of spatial average of the potentially impacted units. For the purposes of this evaluation, the existing noise levels collected at this location were used to characterize the noise levels for Metro Gateway Childhood Development Center, mainly since the proximity of these two receptors to the measurement location is similar and ML3 is therefore representative of this area as well. The noise monitor was set up during the work week 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 L_{eq}. Because of equipment limitations at this location, 1-minute L_{eq} intervals could not be collected and are not included in Figure 3.6-8.

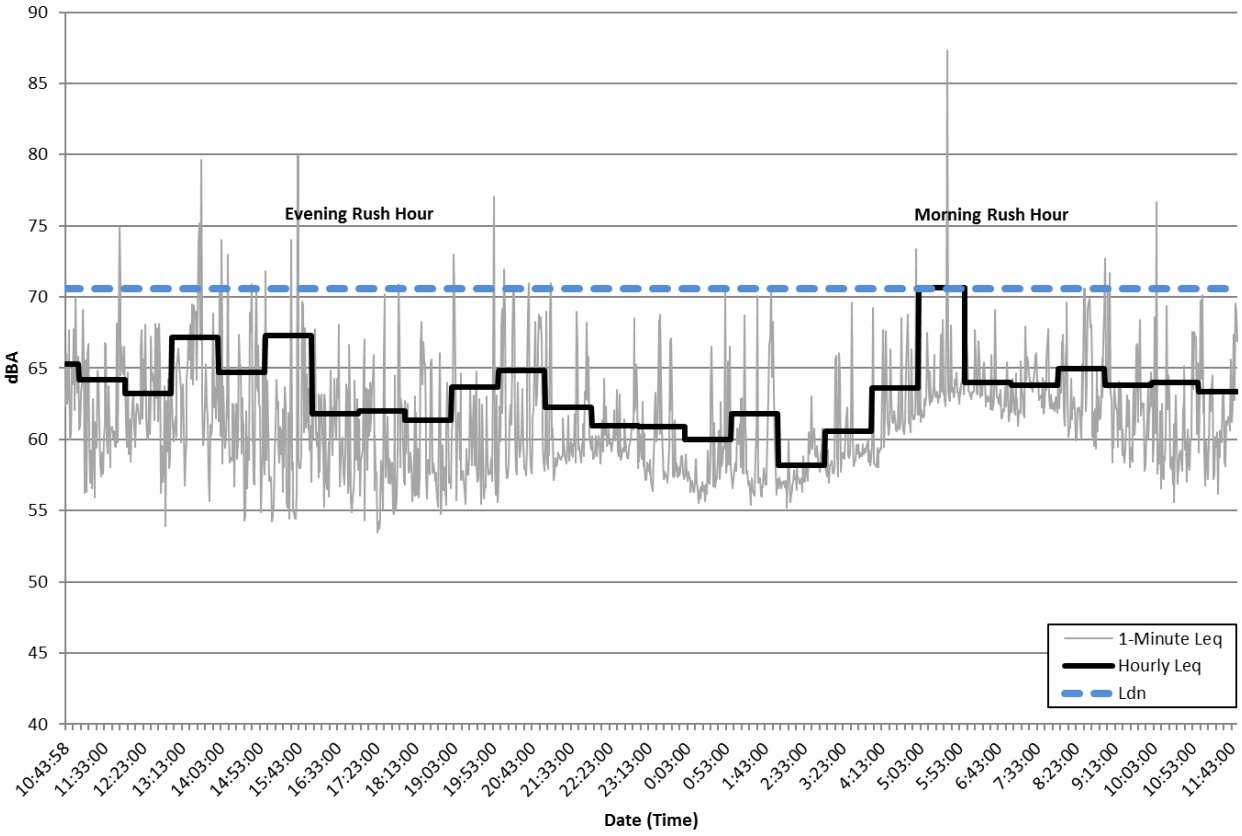
Figure 3.6-8. Monitoring Location 3 – Hourly Equivalent Noise Level Time History



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

ML4 – One Santa Fe Apartments and Studios. The Metro ESOC was determined to be a suitable location for monitoring existing noise levels for One Santa Fe Apartment complex (Figure 3.6-4) because this location is roughly the same distance from the existing railroad tracks as the One Santa Fe Apartment complex. 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: Link US Noise and Vibration Study (Appendix H of this EIS)

Existing Vibration Levels

Existing vibration levels were monitored at ML1a (for 30-minute starting at 10:58 AM) and ML3 (for an hour starting at 2:19 PM) on a weekday (January 24, 2017) to identify community existing vibration levels associated with rail operations as well as background, non-rail vibration levels. For the purposes of this evaluation, the existing vibration conditions collected at William Mead Homes were used to characterize the vibration conditions for the Care First Village, mainly since the proximity of these two receptors to the measurement location is similar and ML1a is therefore representative of this area as well.

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 the Mozaic Apartments are above grade.

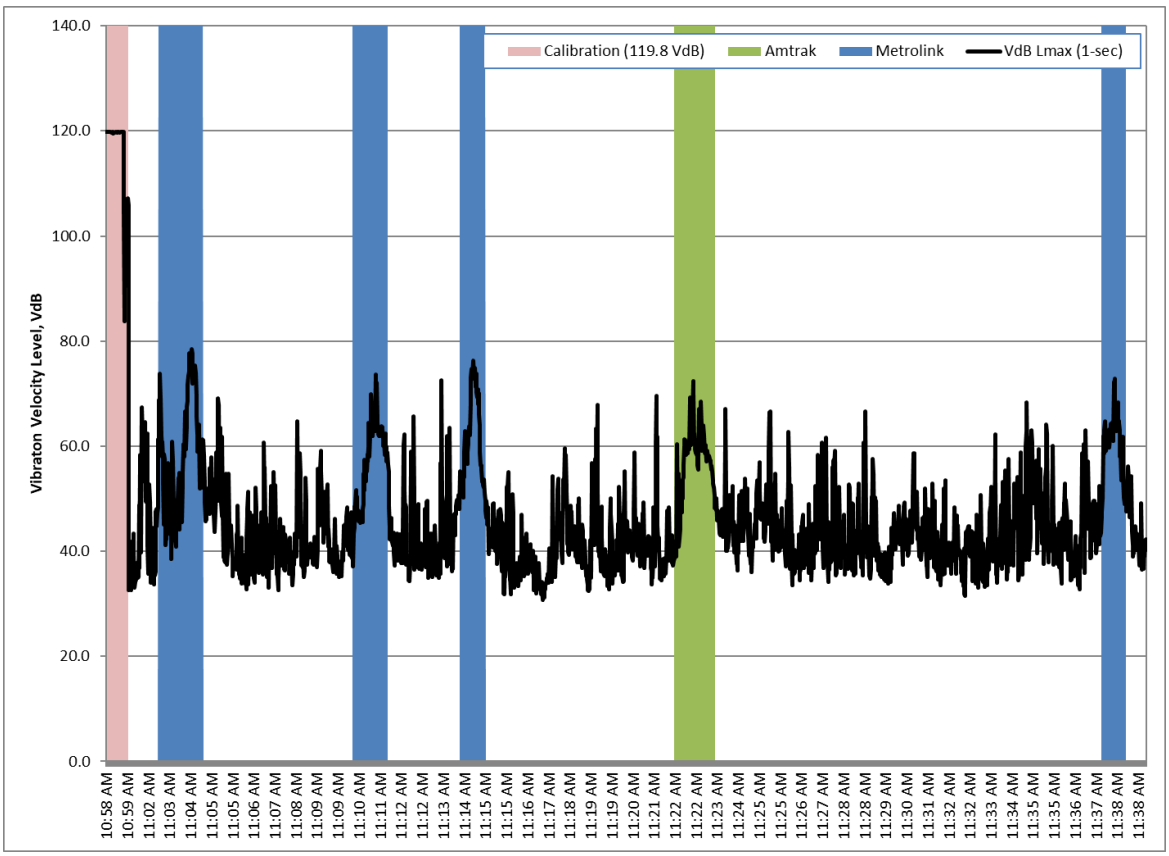
Table 3.6-6. Existing Rail Operation Vibration Levels		
Site ID	**Location**	**Vibration Levels (L_{max} VdB)**
ML1a	William Mead Homes and Care First Village	69
ML3	Mozaic Apartments (Amtrak Baggage Handling Building)	84

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes: ML=monitoring location; L_{max}=maximum sound level; VdB=velocity in decibels; ML1a adjusted to be representative of the building location.

The narrative below provides a description of the vibration measurements performed.

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 L_{max} 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.

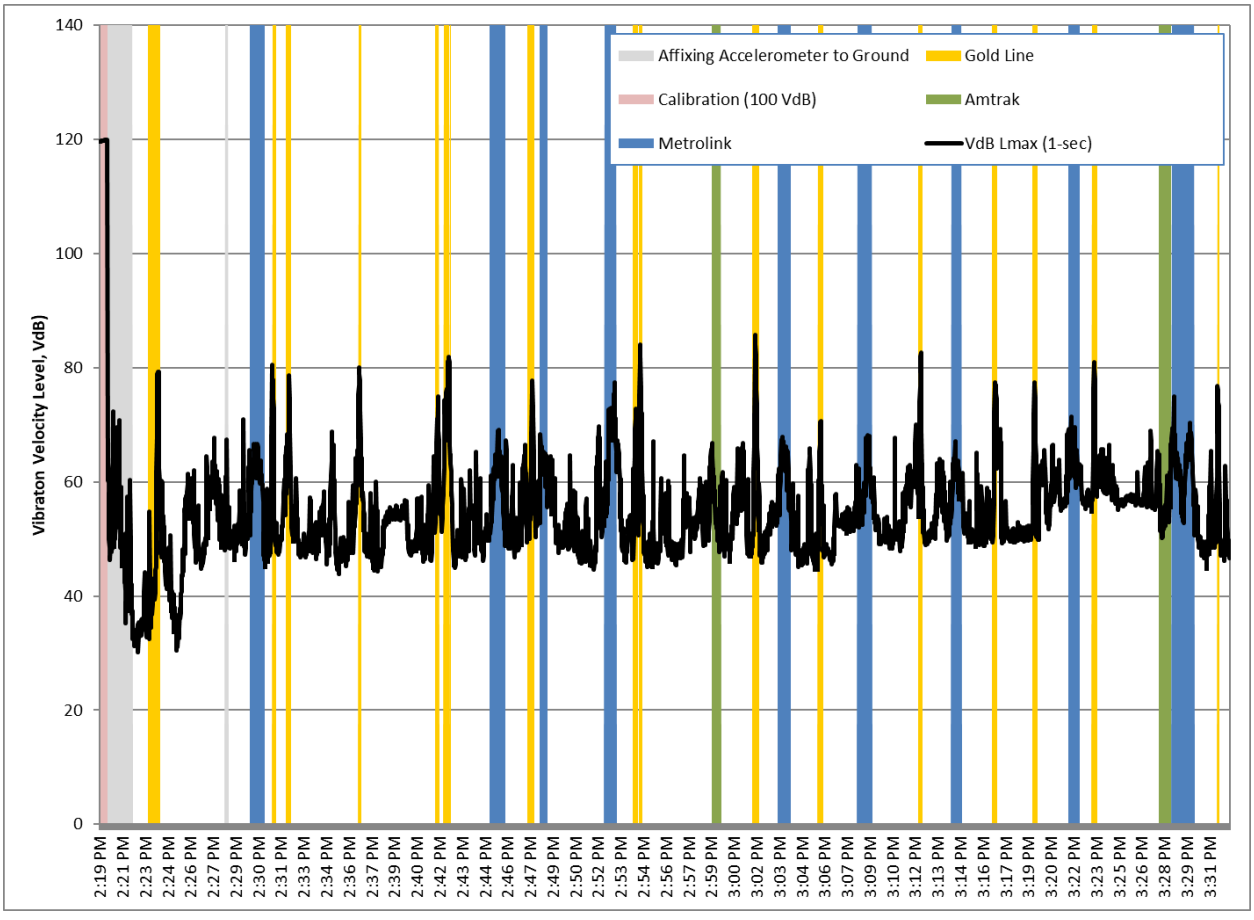
Figure 3.6-10. Monitoring Location 1a – 1-Second Velocity in Decibels Time History with Rail Events



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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. For the purposes of this evaluation, the existing vibration conditions collected at this location were used to characterize the vibration levels for Metro Gateway Childhood Development Center, mainly since the proximity of these two receptors to the measurement location is similar and ML3 is therefore representative of this area as well. Rail vibration events were measured, which included the Gold Line, Metrolink and Amtrak trains that 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 3.6-11. Monitoring Location 3 – 1-second Maximum Sound Level Velocity in Decibels with Time History



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

3.6.5 Environmental Consequences

TOPICS 3.6-A AND 3.6-C	A. Noise levels in excess of established general plan, noise ordinance, or agency standards C. Ambient noise levels

No Action Alternative

Under the No Action Alternative, no Project-related construction noise impacts on sensitive receptors would occur. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020–2045 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Construction of other projects in the vicinity of sensitive receptors would likely result in some form of construction noise, and the magnitude of construction noise impacts would vary depending on the location of each project and the associated construction activities. The impacts of other projects would be addressed during the environmental review and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects.

Due to the physical capacity constraints at LAUS, noise levels would remain high for sensitive receptors located near the existing track alignment, and train movements in the Project study area are assumed to remain similar to existing conditions. Operational noise levels are anticipated to correspond to existing frequency for train movements and would, therefore, remain unchanged. No new severe or moderate impacts would occur at William Mead Homes, Care First Village or Mozaic Apartments through 2040. No direct adverse effect would occur.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would take place in phases over the course of approximately 6 years. Construction activities would result in temporary periods of relatively high noise levels, as summarized in Table 3.6-7, which 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}). Similar to other recently completed transportation infrastructure projects in the surrounding area, 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 to meet Metro's desired construction completion timeframe.

As shown on Figure 3.6-12, the following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit:

- William Mead Homes - 41 dwelling units and one recreational use;
- Care First Village - approximately 36 dwelling units and a playground/park;
- Mozaic Apartments - 82 dwelling units; and,
- Metro Gateway Childhood Development Center.

This is considered a direct adverse effect. Land uses not subject to severe noise impacts during construction are not depicted on Figure 3.6-12.

In addition to the construction-related impacts of the Build Alternative described above, at William Mead Homes and the Care First Village specifically, construction of the sound walls required as part of Mitigation Measure NV-1 would also result in construction noise effects from use of heavy machinery as presented in Table 3.6-8.

For sound wall construction, Category 2 land uses (i.e., residential) within the respective daytime (80 dBA L_{eq}) and nighttime (70 dBA L_{eq}) impact distances (250 feet and 300 feet) include William Mead Homes and Care First Village; therefore, the construction noise impact from sound wall construction is also considered a temporary adverse effect. Additionally, the City's limit would be exceeded at some receivers.

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Table 3.6-7. Construction Noise Levels – Build Alternative

Phase	Sub-Phase	Type	Equipment[a]			Composite Sound Level (L_{eq}) at Distance[c]					
						Variable Distances (feet)					
			Quantity	Usage Factor (%)	L_{max} at 50'[b]	50	100	200	400	800	1,000
Segment 1: Throat Segment	—	Drill rig	1	20	79	86	80	74	68	62	60
		Wheel loader	4	40	79						
		Excavator	3	40	81						
		Concrete mixer truck	1	40	79						
		Crane	1	16	81						
		Forklift	2	20	75						
		Water truck	2	40	74						
Segment 2: Concourse Segment	—	Drill rig	1	20	79	86	80	74	68	62	60
		Wheel loader	4	40	79						
		Excavator	3	40	81						
		Concrete mixer truck	1	40	79						
		Crane	1	16	81						
		Forklift	2	20	75						
		Water truck	2	40	74						

Table 3.6-7. Construction Noise Levels – Build Alternative

Phase	Sub-Phase	Type	Equipment[a]			Composite Sound Level (L_{eq}) at Distance[c]					
						Variable Distances (feet)					
			Quantity	Usage Factor (%)	L_{max} at 50'[b]	50	100	200	400	800	1,000
Segment 3: Run-Through Segment	Cast-in-drilled-hole piles	Drill rig	2	20	79	85	79	73	67	61	59
		Wheel loader	2	40	79						
		Concrete pump	2	20	81						
		Concrete mixer truck	4	40	79						
		Crane	1	16	81						
		Haul truck	2	40	76						
	Superstructure Placement	Concrete pump	2	20	81	83	77	71	65	59	57
		Concrete mixer truck	3	40	79						
		Forklift	2	20	75						
		Crane	2	16	81						
	Pile Driving for Abutments	Pile driving machine	1	20	101	94	88	82	76	70	68
		Wheel loader	1	40	79						
		Crane	1	16	81						
	Bridge Earthwork	Excavator	1	40	81	81	75	69	63	57	55

Table 3.6-7. Construction Noise Levels – Build Alternative

Phase	Sub-Phase	Type	Equipment[a]			Composite Sound Level (L_{eq}) at Distance[c] Variable Distances (feet)					
			Quantity	Usage Factor (%)	L_{max} at 50'[b]	50	100	200	400	800	1,000
		Wheel loader	1	40	79						
		Hauling truck	2	40	76						
		Water truck	1	40	74						
	BNSF West Bank Yard Earthwork	Dozer	2	40	82	84	78	72	66	60	58
		Wheel loader	2	40	79						
		Haul truck	2	40	76						
		Water truck	1	40	74						
	BNSF West Bank Yard Rail Placement	Compactor	1	20	83	85	79	73	67	61	59
		Ballast regulator	4	50	82						

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes:
[a] ***Equipment mix obtained from the proposed action's engineers 7/8/2016***
[b] ***Measured Lmax at given reference distance obtained from the FHWA Roadway Construction Noise Model, FHWA 2006 and/or FTA Noise and Vibration Guidance 2006.***
[c] ***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 the 2006 FHWA Roadway Construction Noise Model.
L_{eq}=equivalent noise level; L_{max}=maximum sound level

Table 3.6-8. Sound Wall Construction Noise Levels

Equipment	Quantity	Usage Factor (%)	L_{max} at 50 feet	Composite dBA L_{eq} (hourly) at Distance				
				50 feet	100 feet	200 feet	400 feet	500 feet
Backhoe	1	40	78	79	73	67	61	59
185 cubic foot per minute compressor	1	40	78					
Concrete pump truck	1	20	81					
400-amp welder	1	40	74					

Notes:
Usage factors obtained from the 2006 FHWA Roadway Construction Noise Model
dBA=A-weighted decibel; L_{eq}=equivalent noise level; L_{max}=maximum sound level

Figure 3.6-12. Land Uses Subject to Construction Noise Exceeding City 75 dBA Limit



Notes:
Land uses not subject to severe noise impacts during construction are not depicted on Figure 3.6-12.

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Mitigation Measure NV-2 (described in Section 3.6.6) requires implementation of noise- and vibration-reducing measures, including, but not limited to, constructing walled enclosures around loud activities, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets, and Mitigation Measure NV-3 (described in Section 3.6.6) requires implementation of a proactive Community Notification Plan to address community concerns related to potential noise and vibration impacts. Implementation of Mitigation Measures NV-2 and NV-3 would reduce adverse construction-related noise effects and the annoyances caused by construction-related noise effects (in addition to vibration effects). Direct noise effects would be reduced through implementation of Mitigation Measures NV-2 and NV-3. These mitigation measures are intended to minimize adverse effects by identifying noise exceedances and requiring that the construction contractor address noise exceedances that occur by applying additional mitigation; however, some receptors would still be subject to construction-related noise impacts that would exceed applicable thresholds. Therefore, temporary construction impacts would remain adverse.

Direct Effects – Operations

2026 Condition

In the 2026 condition, regional/intercity rail service would operate at increased levels of service compared to existing conditions, as described in the *Link US Rail Planning Technical Memorandum* (Appendix C of this EIS). In the throat segment (Segment 1), new lead tracks would not be constructed near William Mead Homes or Care First Village. In the concourse segment (Segment 2), Metro's Gold Line would utilize Tracks 1 and 2 and regional/intercity trains would use the remaining tracks (Tracks 3 through 14). In the run-through segment (Segment 3), construction of two new run-through tracks as part of the Build Alternative would result in a new source of operational noise for land uses nearby.

As shown in Table 3.6-9, noise levels in the 2026 condition would range from 40 to 67 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 46 to 62 dBA L_{eq} at Category 3 land uses (i.e., La Petite Academy [First 5 LA Headquarters], Ann Street Elementary School, the park/playground at the Care First Village, the park/athletic field near William Mead Homes, and the Metro Gateway Childhood Development Center). In 2026, moderate impacts would occur at 24 multifamily dwelling units (all at William Mead Homes). No moderate or severe impacts would occur at the Care First Village, Mozaic Apartments, Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, Metro Senior Housing, One Santa Fe Apartments, La Petite Academy (First 5 LA Headquarters), Ann Street Elementary School, the park/playground at the Care First Village, the park/athletic field near William Mead Homes, or the Metro Gateway Childhood Development Center. Although part of the athletic field at William Mead Homes may be within the limits of where moderate impacts are predicted to occur, this is an "active" sports area (running, playing baseball, etc.) and is not considered to be noise sensitive according to FTA guidelines.

Based on the results in Table 3.6-9, no adverse effect would occur because impacts are considered moderate. The FRA and FTA manuals include provisions for consideration of mitigation for moderate impacts, although mitigation is not required for moderate impacts.

Although implementation of Mitigation Measure NV-1 (described in Section 3.6.6) is not required in the 2026 condition because impacts are not severe, Metro would construct the sound walls in accordance with Mitigation Measure NV-1 earlier than 2031 to reduce construction-related noise effects and/or moderate operational noise effects from increased train movements that may occur as early as 2026. The exact dimensions of the wall would be identified during final design. Table 3.6-13 depicts the noise contours associated with the moderate impact areas at William Mead Homes for in the 2026 condition.

Table 3.6-9. Operational Noise Levels – Build Alternative (2026 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	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	45–67	0	24
	3	2	66	50–62	0	0
Metro Senior Housing	2	123	60	45	0	0
Los Angeles County Men's Central Jail	2	4,000[b]	73	49	0	0
Twin Towers Correctional Facility	2	9,500[b]	73	50	0	0
Mozaic Apartments East Building	2	176	67	43–58	0	0
Mozaic Apartments West Building	2	96	67	41–47	0	0
La Petite Academy (First 5 LA Headquarters)	3	1	64	47	0	0
One Santa Fe Apartments/Studios	2	438	71	40–57	0	0
Care First Village	2	232	73	42–59	0	0
	3	1	71	54	0	0
Metro Gateway Childhood Development Center	3	1	64	46	0	0

Table 3.6-9. Operational Noise Levels – Build Alternative (2026 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
Total	2	14,980[b]	60–73	40–67	0	24
	3	4	64–71	46–62	0	0

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes:

[a] ***Category 2 land uses are assessed using Ldn and Category 3 land uses are assessed using Leq.***

[b] ***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 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 3.6-13. Noise Impact Areas at William Mead Homes – Build Alternative without Mitigation (2026 Condition)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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2031 Condition

In the 2031 condition, regional/intercity rail service would operate at increased levels compared to existing and 2026 conditions, as described in the *Link US Rail Planning Technical Memorandum* (Appendix C of this EIS). In the throat segment (Segment 1), one new lead track would be constructed within the railroad ROW in closer proximity to William Mead Homes (Building 16) and Care First Village. In the concourse segment (Segment 2), Metro's Gold Line would utilize Tracks 1 and 2 and regional/intercity trains would use the remaining tracks (Tracks 3 through 14). In the run-through segment (Segment 3), construction of additional run-through tracks would result in increased operation-related noise levels for people present nearby.

As shown in Table 3.6-10, noise levels in the 2031 condition would range from 44 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 50 to 71 dBA L_{eq} at Category 3 land uses (i.e., Ann Street Elementary School, La Petite Academy, a park/playground at the Care First Village, the park/athletic field near William Mead Homes, and the Metro Gateway Childhood Development Center).

Table 3.6-10. Operational Noise Levels – Build Alternative (2031 Condition)

Noise-sensitive Area Description	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	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	55–75	24	16
	3	2	66	62–71	1	0
Metro Senior Housing	2	123	60	55	0	0
Los Angeles County Men's Central Jail	2	4,000[b]	73	59	0	0
Twin Towers Correctional Facility	2	9,500[b]	73	55	0	0
Mozaic Apartments East Building	2	176	67	49–63	0	3
Mozaic Apartments West Building	2	96	67	47–52	0	0

Table 3.6-10. Operational Noise Levels – Build Alternative (2031 Condition)

Noise-sensitive Area Description	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
La Petite Academy (First 5 LA Headquarters)	3	1	64	50	0	0
One Santa Fe Apartments/ Studios	2	438	71	44–59	0	0
Care First Village	2	232	73	52–72	10	15
	3	1	71	65	0	0
Metro Gateway Childhood Development Center	3	1	64	51	0	0
Total	2	14,980[b]	60–73	44–75	34	34
	3	4	64–71	50–71	1	0

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes:

[a] ***Category 2 land uses are assessed using Ldn and Category 3 land uses are assessed using Leq.***

[b] ***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 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; Metro=Los Angeles County Metropolitan Transportation Authority

As shown in Table 3.6-10, in the 2031 condition, the Build Alternative would result in moderate impacts on 34 multifamily dwelling units (16 William Mead Homes dwelling units, 15 Care First Village dwelling units and 3 Mozaic Apartment dwelling units) and severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. Category 2 and 3 land uses that would be subject to severe impacts are shown on Figure 3.6-14. Land uses not subject to severe noise impacts in the 2031 condition are not depicted on Figure 3.6-14.

The following discussion provides additional information on the impacts to noise-sensitive receptors and the mitigation for each receptor, as applicable:

- For William Mead Homes, severe impacts in the 2031 condition are considered an adverse effect. Mitigation Measure NV-1 (described in Section 3.6.6) requires Metro to implement a sound wall within the railroad ROW along the perimeter of the William Mead Homes property. Implementation of Mitigation Measure NV-1 would reduce adverse operational noise effects by reducing noise levels lower than the FTA severe impact criteria.
- For the Care First Village, severe impacts in the 2031 condition are considered an adverse effect. Mitigation Measure NV-1 (described in Section 3.6.6) requires Metro to implement a sound wall within the railroad ROW along the perimeter of the Care First Village property. Implementation of Mitigation Measure NV-1 would reduce adverse operational noise effects by reducing noise levels lower than the FTA severe impact criteria.
- For the Mozaic Apartments, exterior noise levels at the Mozaic Apartments would result in moderate noise impacts at three dwelling units, specifically at the balconies of the units located closest to LAUS. Mitigation measures are not proposed because severe impacts would not occur and the exterior areas (balconies) of the Mozaic Apartments are already exposed to relatively high existing noise levels from transit and railroad operations located at LAUS (see Section 3.6.4). Right of entry to both interior and exterior areas was not granted by the owner of the Mozaic Apartments 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 development in accordance with City of Los Angeles Municipal Code, Section 91.1207.14.2 since it is 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 Build Alternative, 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.
- The Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility do not have outdoor uses and the buildings' interiors are not predicted to be subjected to noise levels that exceed severe or moderate noise limits. Additionally, these two facilities comprise of buildings made with concrete with thick windows. Interior noise levels are estimated to be at least 20 dB lower than those experienced at the exterior of these structures consistent with FHWA guidance for interior sound level attenuation which would be similar for railroad noise sources (FHWA 2011). 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 (U.S. EPA 1978). No direct adverse effect would occur.
- For the Metro Senior Housing, Ann Street Elementary School, La Petite Academy, and One Santa Fe Apartments, no moderate or severe impacts were identified. No direct adverse effect would occur.

Figure 3.6-16 depicts the noise contours associated with moderate and severe impact areas at William Mead Homes in the 2031 condition without mitigation. Figure 3.6-16 depicts the moderate and severe impact areas at Care First Village in the 2031 condition without mitigation. Figure 3.6-17 and Figure 3.6-18 depict the noise impact areas at William Mead Homes and Care First Village in the 2031 condition with implementation of Mitigation Measure NV-1.

Figure 3.6-14. Land Uses Subject to Severe Operational Noise Impacts (2031 and 2040 Condition)



Notes:
Land uses not subject to severe noise impacts in the 2031 Condition are not depicted on Figure 3.6-14.

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Figure 3.6-15. Noise Impact Areas at William Mead Homes – Build Alternative without Mitigation (2031 Condition)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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Figure 3.6-16. Noise Impact Areas at the Care First Village – Build Alternative without Mitigation (2031 Condition)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

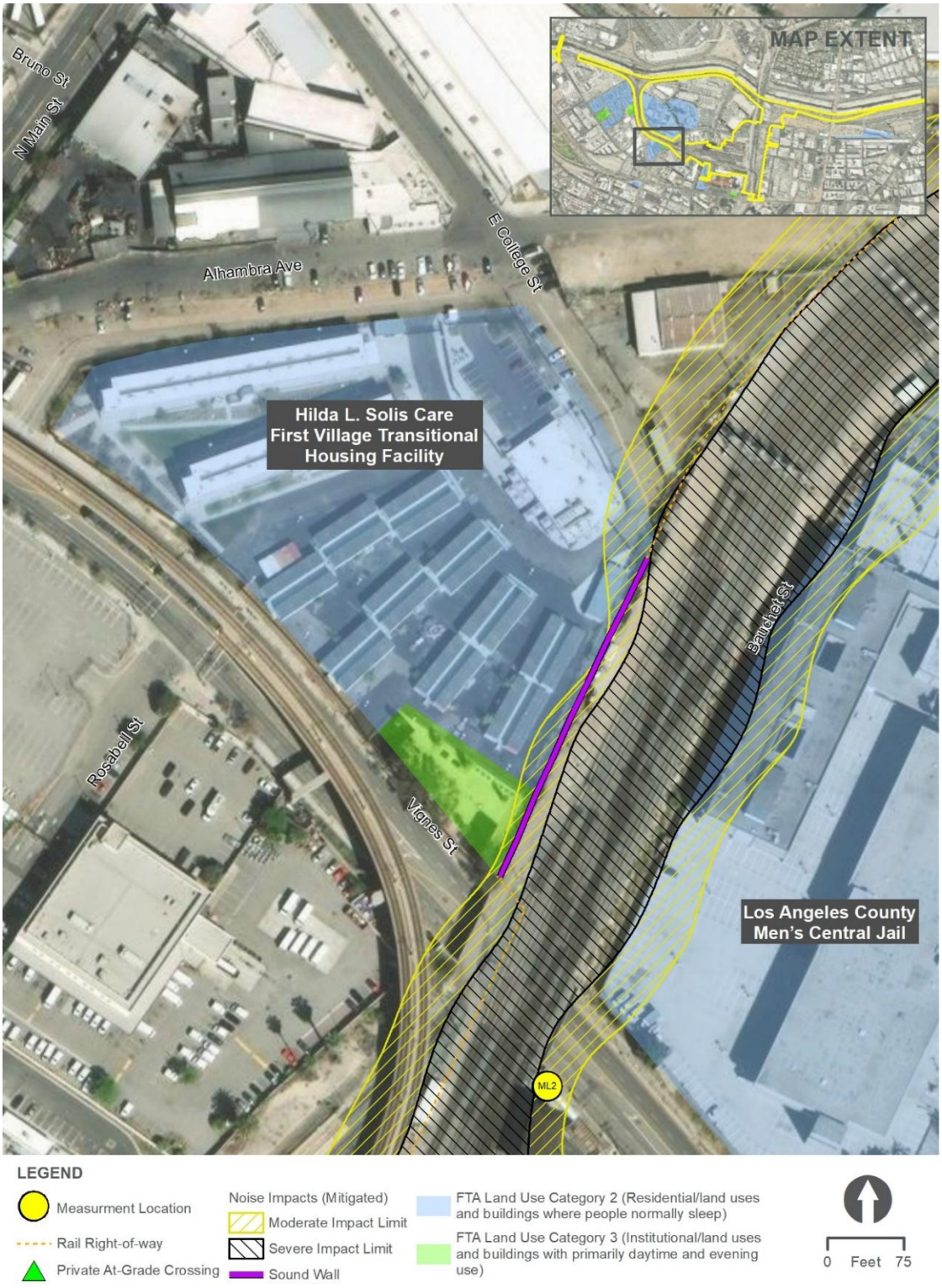
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Figure 3.6-17. Noise Impact Areas at William Mead Homes – Build Alternative (2031 Condition with Mitigation)



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Figure 3.6-18. Noise Impact Areas at Care First Village – Build Alternative (2031 Condition with Mitigation)



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2040 Condition

As shown in Table 3.6-11, noise levels in the 2040 condition would range from 43 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep), and 50 to 71 dBA L_{eq} at Category 3 land uses (i.e., Ann Street Elementary, La Petite Academy, the park/playground at the Care First Village, the park/athletic facility near William Mead Homes, and the Metro Gateway Childhood Development Center).

As shown in Table 3.6-11, in the 2040 condition, the Build Alternative would result in moderate impacts on 25 multifamily dwelling units (16 dwelling units at William Mead Homes and 9 dwelling units at the Mozaic Apartments) and severe impacts on 34 multifamily dwelling units (24 dwelling units at the William Mead Homes complex and 10 dwelling units at Care First Village) and 1 park/athletic field near William Mead Homes. Category 2 and 3 land uses that would be subject to severe impacts are shown on Figure 3.6-14. Land uses not subject to severe noise impacts in the 2040 condition are not depicted on Figure 3.6-14. The following discussion provides additional information on the impacts to noise-sensitive receptors and the mitigation for each receptor, as applicable:

- For William Mead Homes, severe impacts in the 2040 condition are considered an adverse effect. Implementation of Mitigation Measure NV-1 (discussed above and described in Section 3.6.6) would reduce adverse operational noise effects by reducing noise levels lower than the FTA severe impact criteria.
- For the Care First Village, severe impacts in the 2040 condition are considered an adverse effect. Implementation of Mitigation Measure NV-1 (discussed above and described in Section 3.6.6) would reduce adverse operational noise effects by reducing noise levels lower than the FTA severe impact criteria.
- For the Mozaic Apartments, although noise attenuating measures are already in place, moderate impacts would occur at 9 dwelling units. For the same reasons as described previously, interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower. Additionally, over 80 percent of 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. Therefore, no mitigation measures are proposed.
- 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. No direct adverse effect would occur.
- For the Metro Senior Housing, Ann Street Elementary, La Petite Academy, and One Santa Fe Apartments, no moderate or severe impacts were identified. No direct adverse effect would occur.

Figure 3.6-19 depicts the noise contours associated with moderate and severe noise impact areas at William Mead Homes in the 2040 condition without mitigation. Figure 3.6-20 depicts the moderate and severe impact areas at Care First Village in the 2040 condition without mitigation.

Figure 3.6-21 and Figure 3.6-22 depict the noise impact areas at William Mead Homes and Care First Village in the 2040 condition with implementation of Mitigation Measure NV-1.

Table 3.6-11. Operational Noise Levels – Build Alternative (2040 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	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	51–75	24	16
	3	2	66	55–71	1	0
Metro Senior Housing	2	123	60	51	0	0
Los Angeles County Men's Central Jail	2	4,000[b]	73	59	0	0
Twin Towers Correctional Facility	2	9,500[b]	73	55	0	0
Mozaic Apartments East Building	2	176	67	49–64	0	9
Mozaic Apartments West Building	2	96	67	46–53	0	0
La Petite Academy (First 5 LA Headquarters)	3	1	64	50	0	0
One Santa Fe Apartments/Studios	2	438	71	43–59	0	0
Care First Village	2	232	73	51–72	10	0
	3	1	71	65	0	0
Metro Gateway Childhood Development Center	3	1	64	52	0	0

Table 3.6-11. Operational Noise Levels – Build Alternative (2040 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
Total	2	14,980[b]	60–73	43–74	34	25
	3	4	64–71	50–71	1	0

Source: Link US Noise and Vibration Study (Appendix H of this EIS)
Notes:

[a] ***Category 2 land uses are assessed using Ldn and Category 3 land uses are assessed using Leq.***

[b] ***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 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; Metro=Los Angeles County Metropolitan Transportation Authority***

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Figure 3.6-19. Noise Impact Areas at William Mead Homes – Build Alternative without Mitigation (2040 Condition)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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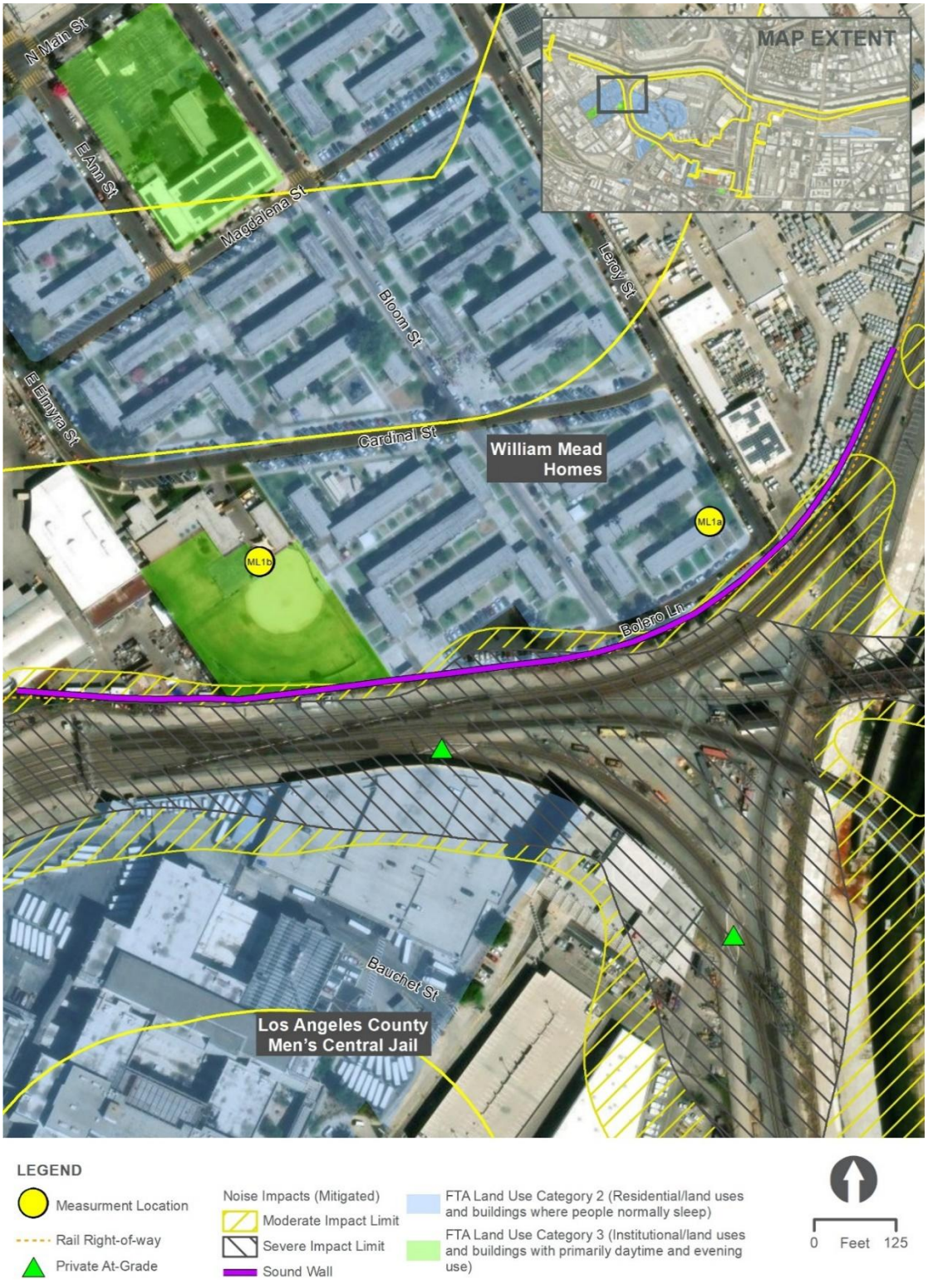
Figure 3.6-20. Noise Impact Areas at the Care First Village – Build Alternative without Mitigation (2040 Condition)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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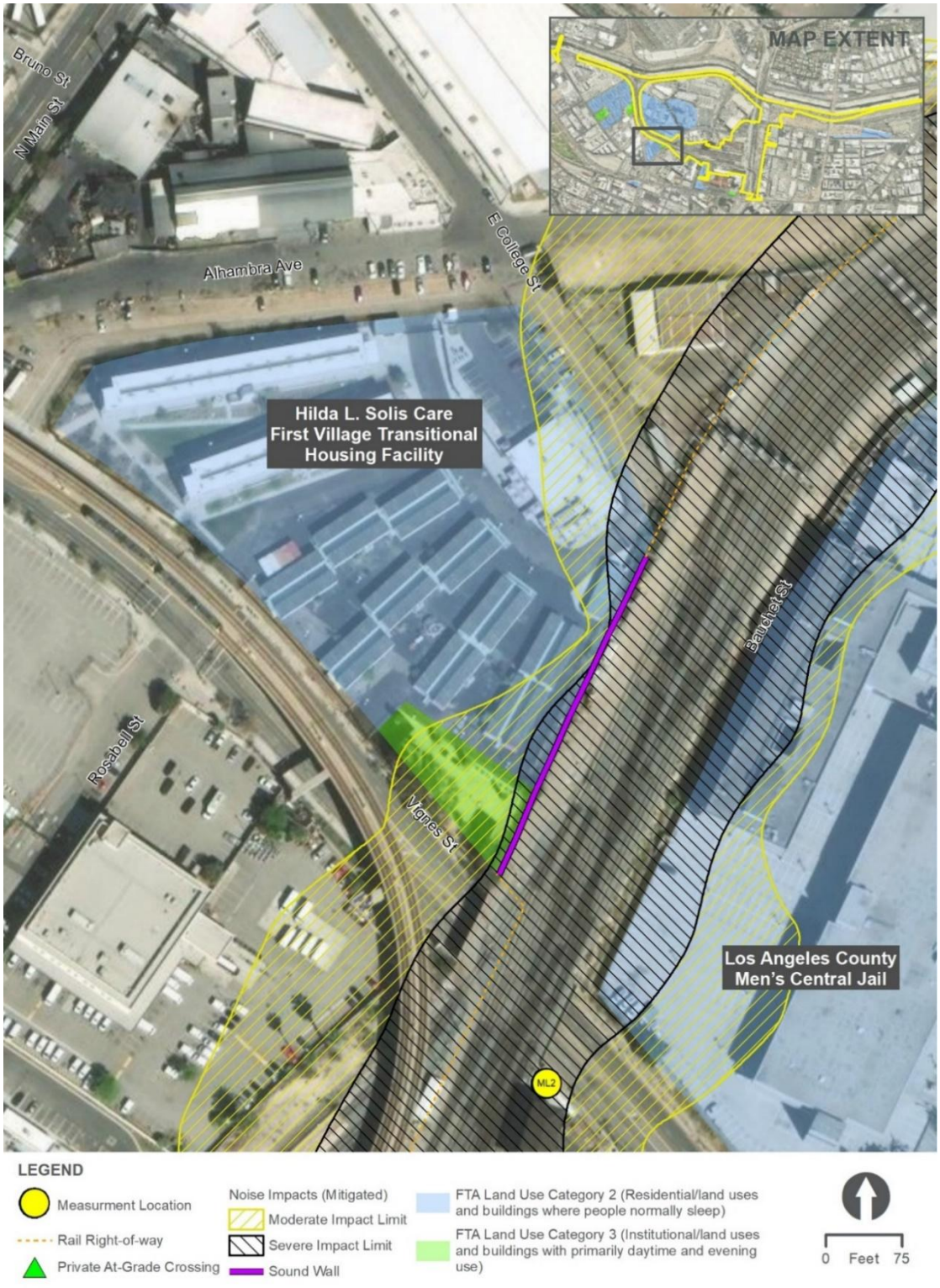
Figure 3.6-21. Noise Impact Areas at William Mead Homes – Build Alternative (2040 Condition with Mitigation)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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Figure 3.6-22. Noise Impact Areas at the Care First Village – Build Alternative (2040 Condition with Mitigation)



Source: Link US Noise and Vibration Study (Appendix H of this EIS)

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Indirect Effects – Construction and Operations

Once constructed, the Build Alternative could encourage infill development around the LAUS area that could indirectly result in the placement of new noise-sensitive land uses near major components of the Build Alternative; however, it is unknown if and when such land use development would occur. If new sensitive receptors are present within the specified screening distances at the time of construction of the Build Alternative, temporary noise impacts may occur. New development would be required to comply with City of Los Angeles Municipal Code, Section 91.1207.14.2 to reduce potential exposure of people to noise impacts throughout operations. In this context, no indirect adverse effect would occur.

TOPIC 3.6-B	Groundborne vibration and groundborne noise levels

No Action Alternative

Under the No Action Alternative, no vibration from construction equipment, specifically impact pile drivers and vibratory rollers, would cause annoyance to vibration-sensitive land uses near the construction zone. Therefore, no construction-related direct adverse effects from vibration would occur. Under the No Action Alternative, operational vibration levels would remain unchanged from the existing condition. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020–2045 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Construction of other projects in the vicinity of sensitive receptors would likely result in some groundborne vibration if specific construction equipment is used, and the magnitude of groundborne noise impacts would vary depending on the location of each project and the associated construction activities and equipment. The impacts of other projects would be addressed during the environmental review and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects. No new operational direct adverse effects would occur.

Build Alternative

Direct Effects – Construction

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 south of US-101. The vibration levels from construction activities are summarized in Table 3.6-12.

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. Unlike prediction of construction noise where multiple pieces of equipment are additive to predict the overall sound level, typical vibration levels are predicted using the equipment with the highest vibration level and other vibration sources are not additive. Vibration from pile driving has the highest vibratory level. Pile driving would only occur for limited durations and at only a few select locations due to the nature of proposed infrastructure.

The vibratory roller is more likely to be used, especially in areas near noise-sensitive receivers. Table 3.6-12 indicates that beyond approximately 50 feet of pile driving activity, there would be no 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 may have a different source level.

Table 3.6-12. Groundborne Vibration 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: Link US Noise and Vibration Study (Appendix H of this EIS)
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. The Mozaic Apartments are the nearest sensitive land use and are located within 300 feet of where pile-driving activities would occur if this construction technique is utilized. Additionally, use of the vibratory roller may occur continuously over the course of several days near sensitive land uses 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 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 within 50 feet of a sensitive land use and, therefore, impacts from a damage perspective would not occur. Nevertheless, because construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller, a severe impact may occur at William Mead Homes, Care First Village, and the Mozaic Apartments from an annoyance perspective. This is considered an adverse effect. Mitigation Measure NV-2 (described in Section 3.6.6) requires implementation of noise- and vibration-reducing measures including but not limited to constructing walled enclosures around loud activities, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets to reduce construction-related vibration effects. Mitigation Measure NV-3 (described in Section 3.6.6) requires implementation of a proactive Community Notification Plan to address community concerns related to potential noise and vibration impacts. Mitigation Measures NV-2 and NV-3 would reduce the annoyances caused by construction-related vibration impacts and would reduce direct adverse construction-related groundborne vibration effects.

Direct Effects – Operations

Vibration-sensitive land uses and structures near the Build Alternative would be limited to those Category 2 uses within 200 feet of the track alignment (i.e., the screening distance per FTA guidance). Category 2 uses within 200 feet include the first row of buildings at William Mead Homes, about half of each of the two multi-story buildings and most of the single-story buildings at Care First Village, 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 in Segment 1 of the Project study area near William Mead Homes or Care First Village and, consequently, there would be no changes to vibration levels. While the frequency of vibration events would increase with additional rail traffic, the corridor is already characterized as a frequent vibration source and assessed accordingly. No adverse effect would occur. 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. No appreciable change would occur 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.

Table 3.6-13 identifies that in the 2026 condition, operational groundborne vibration and noise levels would be below the FTA impact criteria for Category 2 and Category 3 land uses (FTA 2018). Additionally, there are no predicted increases of 3 VdB or greater from operation in the 2026 condition; therefore, no operational groundborne vibration or groundborne noise impacts are predicted. No direct adverse effects would occur during operation of the Build Alternative in the 2026 condition.

2031 Condition

Near William Mead Homes, 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, whereas currently tracks are about 12 feet farther away, all with trains at speeds of up to 35 miles per hour. Trains would operate within 75 feet of the Care First Village at 25 miles per hour.

Table 3.6-13 identifies that in the 2031 condition, operational groundborne vibration and noise levels would be below the FTA impact criteria for Category 2 and Category 3 land uses (FTA 2018). Additionally, there are no predicted increases of 3 VdB or greater from operation in the 2031 condition; therefore, no operational groundborne vibration or groundborne noise impacts are predicted. No direct adverse effects would occur during operation of the Build Alternative in the 2031 condition.

Horizon Year (2040) Condition

For the Build Alternative in the 2040 condition, regional/intercity trains and HSR trains would operate on shared tracks as close as 100 feet from the William Mead Homes buildings. HSR trains would operate as close as 75 feet from the Care First Village. The Build Alternative in the 2040 condition would result in increased train movements in close proximity to the 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, meaning that the rail vehicle with the highest potential for operational vibration on a given track is assumed for the analysis.

Table 3.6-13 identifies that in the 2040 condition, operational groundborne vibration and noise levels would be below the FTA impact criteria for Category 2 and Category 3 land uses (FTA 2018). Additionally, there are no predicted increases of 3 VdB or greater from operation in the 2040 condition; therefore, no operational, groundborne vibration or groundborne noise impacts are predicted. No direct adverse effect would occur during operation of the Build Alternative in the 2040 condition.

Table 3.6-13. Groundborne Vibration and Groundborne Noise Levels (Operations)

Location	Rail Line	Existing Condition	2026		2031		2040	
			Build Alternative		Build Alternative		Build Alternative	
		VdB	VdB	dBA[a]	VdB	dBA[a]	VdB	dBA[a]
William Mead Homes[b]	HSR	—	No Change		—[c]	—	55	5
	Regional/ Intercity Rail	69			68	18	68	18
Care First Village	HSR	—	No Change		—[c]	—	68	18
	Regional/ Intercity Rail	—			71	21	71	21
Terminal Annex	Gold Line	Not Measured	57	7	57	7	57	7
	HSR	—	—[c]	—	—[c]	—	54	4
	Regional/ Intercity Rail		53	3	53	3	53	3
Mozaic Apartments	Gold Line	84	55	5	55	5	55	5
	HSR	—	—[c]	—	—[c]	—	43	<1
	Regional/ Intercity Rail	77	56	6	56	6	56	6

Notes:

[a] FTA indicates that typical groundborne noise in dBA is calculated by subtracting 50 dB from the calculated VdB value. See Table 3.6-3 for vibration thresholds.

[b] The westernmost William Mead Home building closest to the Build Alternative is within 200 feet but beyond 100 feet from crossovers.

[c] HSR infrastructure in the interim phase of the Project would operate conventional passenger rail.

dBA=A-weighted decibel; HSR=high-speed rail; VdB= vibration velocity level in decibels

Indirect Effects – Construction and Operations

Construction and operation of the Build Alternative is unlikely to result in indirect effects related to groundborne vibration that would cause annoyance or physical damage to adjacent structures. Although land use changes (and intensification) from infill development are expected with or without the Build Alternative, these changes would be subject to local government review and applicable CEQA/NEPA requirements. No indirect adverse effect would occur.

3.6.6 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects relative to noise and vibration. Metro adopted an MMRP as part of the Final EIR for the Link US Project, which included Mitigation Measures NV-1 through NV-3. The mitigation measures below generally follow the mitigation measures adopted in the MMRP for the Link US Project but include minor technical changes where necessary to address site-specific instances and/or clarify where the measure shall be implemented (City of Los Angeles).

NV-1 **Construct Sound Walls:** As early as possible in the Project construction phase, including prior to any demolition, and in any event prior to substantial construction-related activities, Metro shall construct two permanent sound walls. The first sound wall shall be located between the William Mead Homes and the train tracks near the railroad ROW and shall extend up to 22 feet in height and 1,144 feet long to reduce operational noise impacts at William Mead Homes. The second sound wall shall be located between the Care First Village and the train tracks near the railroad ROW and shall extend up to 13 feet in height and 347 feet long to reduce operational noise impacts at Care First Village. The sound walls shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have a surface density of at least 4 pounds per square foot.

NV-2 **Employ Noise- and Vibration-Reducing Measures during Construction:** The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Through weekly and monthly meetings with Metro and the contractor, the means and methods to comply with the overall contract specifications and applicable mitigation measures shall be discussed with Metro and applicable parties prior to implementation. Noise and vibration reduction measures to 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 construction activities and noise-sensitive receivers.
    - Acoustic blankets or soundproof window inserts along facades of sensitive buildings as deemed necessary by the construction contractor.
    - Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available.
    - When in use, locate equipment on the construction site as far away from noise-sensitive sites as possible.
    - Construct walled enclosures around especially loud activities or clusters of loud equipment (e.g., 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 loud operations to occur in the same time period.
    - The total noise level produced would not be substantially 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).
  - Use vibratory rollers in static mode (vibrating motor turned down or off) when operating in close proximity to sensitive buildings.

In an effort to keep construction noise levels below FTA's construction noise and 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, Care First Village, the Metro Gateway Childhood Development Center, and Mozaic Apartments, within approximately 300 feet of construction activities. Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance farther 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 and complaints from the community or other interested groups.

3.6.7 NEPA Impact Summary

This section summarizes the effects related to noise and vibration of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.6-A and Topic 3.6-C, no Project-related construction noise impacts on sensitive receptors would occur. Construction of other projects in the vicinity of sensitive receptors would likely result in some form of construction noise, and the magnitude of construction noise impacts would vary depending on the location of each project and the associated construction activities. The impacts of other projects would be addressed during the environmental review and entitlement processes and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects. Operational noise levels would remain high for sensitive receptors located near the existing track alignment because train movements in the Project study area would remain similar to existing conditions. No new severe or moderate impacts would occur at William Mead Homes, Care First Village or Mozaic Apartments through 2040. No construction-related or operational adverse direct effect would occur.

As discussed under Topic 3.6-B, no vibration from construction equipment, specifically impact pile drivers and vibratory rollers, would cause annoyance to vibration-sensitive land uses near the construction zone. Therefore, no direct effects from vibration would occur during construction under the No Action Alternative. Operational vibration levels would remain unchanged. No construction-related or operational adverse direct adverse effects would occur.

Build Alternative

As discussed under Topic 3.6-A and Topic 3.6-C, construction activities would result in temporary periods of relatively high noise levels. Adverse construction-related noise effects would occur at Category 2 and 3 land uses (i.e., residential and institutional) because applicable FTA thresholds would be exceeded during the daytime (80 dBA L_{eq}) and nighttime (70 dBA L_{eq}) within 250 feet and 300 feet, respectively. At William Mead Homes, 41 dwelling units and one recreational use would be subject to construction noise that exceeds the City's 75 dBA limit. For Care First Village, approximately 36 dwelling units and a playground/park would be subject to construction noise levels that exceed the City's 75 dBA limit. At the Mozaic Apartments, 82 dwelling units would be subject to construction noise levels that exceed the City's 75 dBA limit. At the Metro Gateway Childhood Development Center, construction noise levels are expected to reach the City's 75 dBA limit. No other impacts on hospitals, parks, schools, or daycare facilities included in the detailed assessment would occur. Implementation of Mitigation Measures NV-2 and NV-3 would reduce construction-related adverse effects; however, some receptors would still be subject to

construction noise that would exceed applicable thresholds. After implementation of mitigation, temporary impacts would remain adverse.

As discussed under Topic 3.6-A and Topic 3.6-C, the following operational noise impacts would occur:

- In the 2026 condition, 24 moderate noise impacts would occur (all William Mead Homes dwelling units) and no severe impacts would occur.
- In the 2031 condition, 34 moderate impacts would occur (16 dwelling units at William Mead Homes, 3 dwelling units at Mozaic Apartments, and 15 dwelling units at Care First Village) and 35 severe noise impacts would occur (24 dwelling units at William Mead Homes, 10 dwelling units at Care First Village, and one park at William Mead Homes).
- In the 2040 condition, 25 moderate impacts would occur (16 dwelling units at William Mead Homes and 9 dwelling units at Mozaic Apartments) and 35 severe impacts would occur (24 dwelling units at William Mead Homes, 10 dwelling units at Care First Village, and one park at William Mead Homes).

Table 3.6-14 and Table 3.6-15 provide comparisons of operational noise impacts for each of the years considered.

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Table 3.6-14. Operational Noise Levels – Build Alternative (2031 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Impacts without Mitigation			Impacts with Mitigation		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	55–75	24	16	55-67	0	24
	3	2	66	62–71	1	0	62-64	0	0
Metro Senior Housing	2	123	60	55	0	0	55	0	0
Los Angeles County Men's Central Jail	2	4,000[b]	73	59	0	0	59	0	0
Twin Towers Correctional Facility	2	9,500[b]	73	55	0	0	55	0	0
Mozaic Apartments East Building	2	176	67	49–63	0	3	49-63	0	3
Mozaic Apartments West Building	2	96	67	47–52	0	0	47-52	0	0
La Petite Academy (First 5 LA Headquarters)	3	1	64	50	0	0	50	0	0
One Santa Fe Apartments/Studios	2	438	71	44–59	0	0	44-59	0	0
Care First Village	2	232	73	52–72	10	15	52-65	0	5
	3	1	71	65	0	0	61	0	0

Table 3.6-14. Operational Noise Levels – Build Alternative (2031 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Impacts without Mitigation			Impacts with Mitigation		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
Metro Gateway Childhood Development Center	3	1	64	51	0	0	51	0	0
Total	2	14,980[b]	60–73	44–75	34	34	44-67	0	32
	3	4	64–71	50–71	1	0	50-64	0	0

Source: Link US Noise and Vibration Study (Appendix H of this EIS)

Notes:

[a] Category 2 land uses are assessed using Ldn and Category 3 land uses are assessed using Leq.

[b] 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 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

Table 3.6-15. Operational Noise Levels – Build Alternative (2040 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Impacts without Mitigation			Impacts with Mitigation		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	51–75	24	16	50-67	0	24
	3	2	66	55–71	1	0	55-63	0	0
Metro Senior Housing	2	123	60	51	0	0	51	0	0
Los Angeles County Men's Central Jail	2	4,000[b]	73	59	0	0	59	0	0
Twin Towers Correctional Facility	2	9,500[b]	73	55	0	0	55	0	0
Mozaic Apartments East Building	2	176	67	49–64	0	9	49-64	0	9
Mozaic Apartments West Building	2	96	67	46–53	0	0	46-53	0	0
La Petite Academy (First 5 LA Headquarters)	3	1	64	50	0	0	50	0	0
One Santa Fe Apartments/Studios	2	438	71	43–59	0	0	43-59	0	0
Care First Village	2	232	73	51–72	10	0	51-64	0	0
	3	1	71	65	0	0	61	0	0

Table 3.6-15. Operational Noise Levels – Build Alternative (2040 Condition)

Noise-sensitive Area Description[a]	Land Use Category[a]	Number of Dwelling Units (Category 2) or Sensitive Uses (Category 3)	Existing Noise Exposure (dBA)	Impacts without Mitigation			Impacts with Mitigation		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
Metro Gateway Childhood Development Center	3	1	64	52	0	0	52	0	0
Total	2	14,980[b]	60–73	43–74	34	25	43-67	0	33
	3	4	64–71	50–71	1	0	50-63	0	0

Source: Link US Noise and Vibration Study (Appendix H of this EIS)

Notes:

[a] Category 2 land uses are assessed using Ldn and Category 3 land uses are assessed using Leq.

[b] 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 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

Implementation of Mitigation Measure NV-1 would reduce adverse operational noise to levels lower than the FTA severe impact criteria through the construction of two sounds walls adjacent to William Mead Homes and Care First Village. As discussed above in the impact evaluation for 2031 and 2040 at Mozaic Apartments, no adverse effect would occur because noise impacts are considered moderate, exterior areas (balconies) are already exposed to relatively high existing noise levels from transit and railroad operations located at LAUS and 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 are already in place, as required by the City of Los Angeles.

Table 3.6-16 provides an impact summary for the Build Alternative.

Table 3.6-16. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* Adverse Effect	*Construction* **NV-1 Construct Sound Walls** **NV-2 Employ Noise- and Vibration-Reducing Measures during Construction** **NV-3 Prepare a Community Notification Plan for Project Construction**	*Construction* Adverse Effect
	Operations Adverse Effect	*Operations* **NV-1 Construct Sound Walls**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.6-B: Groundborne vibration and groundborne noise levels	*Construction* Adverse Effect	*Construction* **NV-2 Employ Noise- and Vibration-Reducing Measures during Construction** **NV-3 Prepare a Community Notification Plan for Project Construction**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect

Table 3.6-16. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect

3.7 Biological and Wetland Resources

3.7.1 Introduction

This section provides an evaluation of potential effects related to biological and wetland resources that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Natural Environment Study (Minimal Impacts)* (Appendix I of this EIS) and published sources.

3.7.2 Regulatory Framework

Table 3.7-1 identifies and summarizes applicable laws and regulations relevant to biological and wetland resources.

Table 3.7-1. Applicable Federal Laws and Regulations for Biological and Wetland Resources

Law or Regulation	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(5-7)*, 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's *Procedures for Considering Environmental Impacts* require the Draft and Final EIS to consider in the analysis an evaluation of natural ecological systems, wetlands, and endangered species.
Endangered Species Act (16 United States Code Section 1531 et Seq.) (1973)	The ESA provides a program for the conservation of threatened and endangered plants, animals, and their habitats. USFWS and NMFS are the regulatory agencies responsible for implementing the ESA, including listing species as endangered or threatened and designating critical habitat for listed species. Section 7 of the ESA requires that federal agencies consult with USFWS and/or NMFS when any action the agency carries out, funds, or authorizes may affect a federally listed species or designated critical habitat.
Migratory Bird Treaty Act (16 United States Code Section 703–712) (1918)	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 Part 21).
Bald and Golden Eagle Protection Act (16 United States Code	The Bald and Golden Eagle Protection Act, enacted in 1940, and amended several times since, prohibits anyone, without a permit issued by the

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.7-1. Applicable Federal Laws and Regulations for Biological and Wetland Resources

Law or Regulation	Description
668-668(d); 50 Code of Federal Regulations 22) (1940)	Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs.
Protection of Migratory Bird Populations (United States Presidential Executive Order 13186 (2001)	EO 13186 mandates responsibilities of Federal Agencies to Protect Migratory Birds, signed on January 10, 2001, directs federal agencies to take certain actions to further implement the MBTA and promote the conservation of migratory bird populations.
Floodplain Management and Protection of Wetlands (United States Presidential Executive Order 11988 and 11990) (1977)	EO 11988 and 11990 requires that agencies must, to the extent permitted by law, avoid undertaking or providing assistance for new construction located in wetlands unless the lead agency finds: that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.
Clean Water Act (33 United States Code Section 1344) - Section 404 (1972)	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 subject to temporary and permanent effects.
Clean Water Act (33 United States Code Section 1341) - Section 401 (1972)	Section 401 of the CWA protects water quality by regulating the dumping or flow of pollutants into streams, lakes, rivers, and other jurisdictional water bodies.
Executive Order 13112 (3 CFR 13112) (1999); Executive Order 13751 (81 Code of Federal Regulations 88609) – Invasive Species (2016)	EO 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. EO 13751 continues coordinated federal prevention and control efforts related to invasive species.
State	
California Endangered Species Act (1970)	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).
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

Table 3.7-1. Applicable Federal Laws and Regulations for Biological and Wetland Resources

Law or Regulation	Description
	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).
California Environmental Quality Act Guidelines Section 15380 – Rare or Endangered Species	CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered "rare" or "endangered" if the species can be shown to meet certain specified criteria. The criteria is modeled after the California Endangered Species Act and provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies designate the species as protected, if warranted.
Local	
LA Metro Tree Policy	LA Metro is responsible for trees within LA Metro property lines and should tree removal be required, trees would be replaced at a ratio of 2:1 or replaced in-kind with trees that are a minimum size of 36-inch standard box. In addition, removal of trees designated as heritage or protected by local ordinance would be avoided to the greatest extent feasible. Should heritage tree removal be necessary, tree replacement would occur at a 4:1 ratio by trees of the same variety. Local designated protected trees would be protected or removed in compliance with the local ordinance identifying a protected tree.
City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) (2021)	Pursuant to the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873), no person shall relocate or remove any protected tree or shrub without first having applied for an obtained a permit from the Board of Public Works or its designated officer or employee. A protected tree means any Southern California indigenous 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. A protected shrub means any Southern California indigenous shrub species which measures 4 inches or more in cumulative diameter, 4.5 feet above the ground level at the base of the shrub. Protected shrub species include Mexican elderberry and toyon. The term "removed" or "removal" shall include any act that will cause a protected tree or shrub to die, including, but not limited to, acts that inflict damage upon the root system or other part of the tree or shrub 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.

Table 3.7-1. Applicable Federal Laws and Regulations for Biological and Wetland Resources

Law or Regulation	Description
City of Los Angeles General Plan Framework Open Space (1973) and Conservation Elements (2001)	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; EIS=Environmental Impact Statement; EO=Executive Order; ESA=Endangered Species Act; FR=Federal Register; FRA=Federal Railroad Administration; MBTA=Migratory Bird Treaty Act; NMFS=National Marine Fisheries Service; USACE=United States Army Corps of Engineers; USC=United States Code; USFWS=United States Fish and Wildlife Service; U.S.=United States

3.7.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Federally and State listed or candidate plant or animal species.
- Nesting birds protected by the Migratory Bird Treaty Act.
- Wildlife movement.
- Conflict with a tree preservation ordinance.

Geographic Area Considered

The geographic boundary used to evaluate biological and wetland resources is referred to as the BSA. The BSA corresponds to the Project footprint for the Build Alternative.

Methodology

Research

As part of the *Link US Natural Environment Study (Minimal Impacts)* (Appendix I of this EIS), existing background information, including known occurrences of federally listed or candidate plant and wildlife species in the vicinity of the BSA was reviewed to determine the potential for biological and wetland resources to occur. Relevant databases were reviewed including the California Natural Diversity Database (CNDDB); USFWS Online Critical Habitat Portal; USFWS Information, Planning, and Consultation System (IPaC); and United States Department of Agriculture (USDA) Web Soil Survey.

Survey

A general vegetation and habitat survey for biological resources including nesting, foraging, flyover, and stopping habitat within the BSA was conducted in 2015. An additional survey was also conducted in 2023 to verify mapped vegetation communities have not changed since 2015. In 2015, the BSA did not include suitable habitat for federally listed or candidate plant or wildlife species. Based on the survey conducted in 2023, the disturbed habitat present within the Project study area has not changed notably since 2015 to become suitable habitat for federally listed plant or wildlife species. Therefore, no updated surveys are recommended.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Federally and State Listed or Candidate Plant or Animal Species

Potential effects were evaluated based on observed site conditions and the potential presence of sensitive biological resources. In conducting the effects analysis for biological resources, three principal factors were taken into consideration:

- Intensity (i.e., magnitude of the effect).
- Uniqueness (rarity) of the affected resource.
- Resource sensitivity.

The evaluation considered the interrelationship of these three components. For example, a relatively small magnitude of effect would be required to result in an adverse effect on a listed or candidate species or associated habitat 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 effect would be required to result in an adverse effect.

Nesting Birds Protected by the MBTA

Project-related effects would be considered adverse if the Build Alternative results in a take of nesting birds or eggs due to removal of suitable habitat that supports breeding, roosting, and foraging birds protected by the MBTA or increases the risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.

Wildlife Movement

Project-related effects would be considered adverse if the Build Alternative physically obstructs wildlife movement through the addition of new infrastructure or increases noise and light causing an interference with an animal's ability to communicate, navigate, and avoid predators or other dangers.

Conflict with a Tree Preservation Ordinance

Project-related effects would be considered adverse if the Build Alternative removes a tree or shrub protected under the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) (2021) without a permit approved by the Board of Public Works. The removal or relocation of any tree or shrub protected under Ordinance No. 186873 without proper approvals would constitute a conflict with the ordinance.

3.7.4 Affected Environment

This section describes vegetation communities and land cover types, botanical species, wildlife species, migratory birds, wetlands and other waters of the United States, wildlife dispersal corridors and linkage, and habitat conservation plans for the existing condition to characterize the affected environment.

Vegetation Communities and Land Cover Types

The BSA occupies 100.9 acres, including 99.1 acres of urban/developed and 1.8 acres of disturbed habitat. 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 locations of the vegetation communities and land cover types within the BSA. The *Link US Natural Environment Study* includes a detailed discussion of these vegetation communities and land cover types (Appendix I of this EIS).

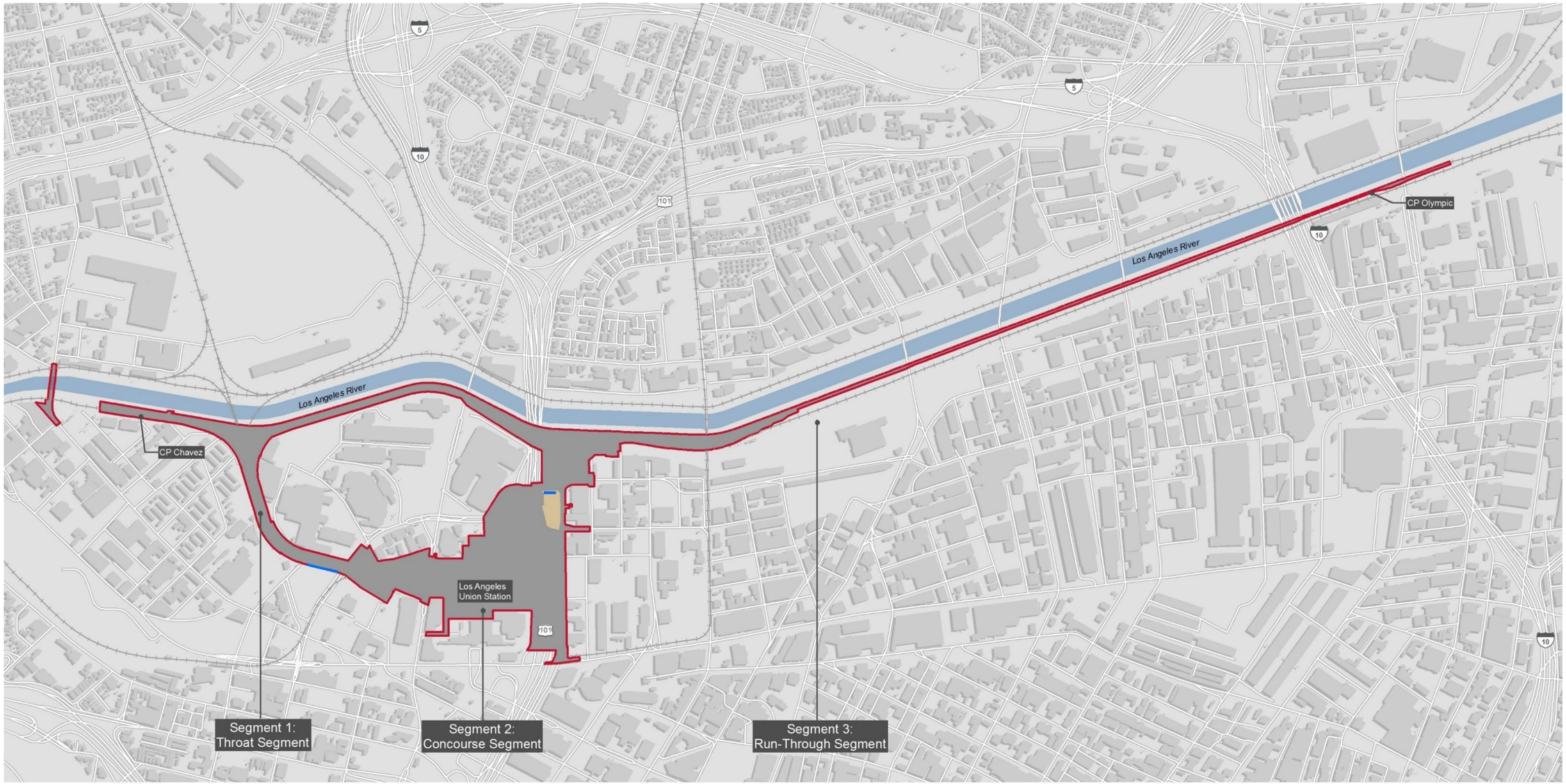
Botanical Species

No special-status plant species were observed within the BSA during the field visit, and none are expected to occur due to a lack of suitable soils and/or habitat or due to the BSA being outside of the known elevation ranges of any special-status plant species. Further information on these species, including their statuses, habitat requirements, and explanations as to why they are not expected to occur within the BSA, is provided in the *Link US Natural Environment Study* (Appendix I of this EIS).

Wildlife Species

No federally listed or candidate wildlife species were observed in the BSA during the field visit, and none are expected to occur due to lack of suitable habitat including foraging, nesting, or stopover. Further information on these species, including their statuses, habitat requirements, and explanations as to why they are not expected to occur within the BSA, is provided in the *Link US Natural Environment Study* (Appendix I of this EIS). No federally designated or proposed critical habitat occurs within the BSA.

Figure 3.7-1. Vegetation Communities and Land Cover Types within the Biological Study Area



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Migratory Birds

Suitable habitat that would support breeding, roosting, and foraging birds protected by the MBTA, including limited mature trees (greater than 24 inches in diameter), utility poles, building rafters and eaves, and bridges, occurs throughout the BSA. 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*).

Wetlands and Other Waters of the United States

Waters of the United States include all waters used or susceptible to use in interstate or foreign commerce, all interstate waters and wetlands, and all other waters that could affect interstate or foreign commerce. The eastern edge of the BSA is adjacent to Los Angeles River; however, the only waters subject to federal jurisdiction within the BSA is the reach of the Los Angeles River located below the North Main Street Bridge because this is the only geographic area where Project components traverse over the Los Angeles River. The Los Angeles River is a concrete-lined flood control channel surrounded by urban, commercial, residential, and industrial development. As discussed in Section 3.1.5, Environmental Topics Requiring No Further Evaluation of this EIS, the Build Alternative would not result in direct effects on waters of the U.S. Therefore, direct effects related to waters of the U.S. are not further evaluated in this section. Analysis of indirect water quality and stormwater effects and applicable mitigation measures (Mitigation Measures HWQ-1 and HAZ-1) that would minimize effects to the Los Angeles River are contained in Section 3.8 Floodplains, Hydrology, and Water Quality of this EIS.

According to a United States Army Corps of Engineers (USACE) guidance document (USACE 2008), USACE generally would not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands that generally do not carry a relatively permanent flow of water. As stated in the Supreme Court case of Rapanos v. United States, “the Clean Water Act extends to only those wetlands with a continuous surface connection to bodies that are waters of the United States in their own right, so that they are indistinguishable from those waters.”

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 nonnative vegetation. The second ditch is located along a fence line 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 areas and are, therefore, proposed to be non-jurisdictional resources[2].

There are no wetlands within the BSA.

[2] Final determination of jurisdiction rests with the USACE Los Angeles District.

Wildlife Dispersal Corridors or Linkages

Wildlife movement corridors, also called dispersal corridors or landscape linkages, are linear features primarily connecting at least two habitat areas. The viability and quality of these corridors are dependent upon site-specific factors, including topography and vegetative cover for both predator and prey species. Wildlife corridors should direct animals to areas of contiguous open space or resources and away from humans and development and should be buffered from human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas that have caused habitat fragmentation (Schweiger et al. 2000).

The BSA occurs within a heavily developed urban area more than 5 miles from any substantial open space patches. While there are larger open space patches to the north and east of the BSA, these areas are separated from the proposed infrastructure by I-5 and State Route (SR) 110. The reach of the Los Angeles River, located below the North Main Street Bridge, may support some north-to-south movement for urban-adapted wildlife, but this function would be limited due to the lack of vegetated cover. Arroyo Seco, located approximately 0.8 mile north of the BSA, may support some east-to-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 Areas as defined by Los Angeles County; 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.

Tree and Shrub Preservation Ordinance

The BSA is located in the City of Los Angeles and would be subject to the city's Protected Tree and Shrub Regulations (Ordinance No. 186873). In addition, the BSA is located within LA Metro ROW and would be subject to LA Metro's Tree Policy. Protected trees and shrubs include native oak trees (*Quercus* sp.), southern California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*), Mexican elderberry (*Sambucus mexicana*), and toyon (*Heteromeles arbutifolia*). Western sycamore trees occur within the BSA and are a protected tree species under this ordinance. There are no protected shrub species that occur within the BSA.

3.7.5 Environmental Consequences

TOPIC 3.7-A	Federally and State listed or candidate plant or animal species

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would affect federal and/or state listed plant and animal species. The No Action Alternative would not include any Project-related changes to existing environmental conditions. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action

Alternative along with other maintenance activities in the railroad ROW. Changes to roosting habitat related to other proposed projects could incrementally affect special-status bat species, depending on the proposed project type and level of human encroachment. The context and intensity of effects would vary based on the locations of other proposed developments and the extent to which roosting habitat is removed or disturbed but bats in the BSA are presumably urban-adapted and well adapted to maintenance activities in the railroad ROW. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable. Therefore, no direct or indirect effects during construction or operation would occur.

Build Alternative

Direct Effects – Construction

The BSA does not include suitable habitat or designated critical habitat for plant or animal species that are federally listed or candidates for listing by USFWS. Therefore, there are no direct or indirect effects on federally listed or candidate plant or animal species during construction and, hence, no need for Section 7 consultation under the Endangered Species Act (ESA).

As previously discussed in Section 3.7.4, the CNDDB record searches indicated 34 special-status wildlife species with known occurrences within the nine 7.5-minute quadrangles including and surrounding the BSA. With the potential exception of western mastiff bats or western yellow bats, both listed by California Department of Fish and Wildlife (CDFW) as species of special concern, the Build Alternative would have no direct or indirect effects on special-status species during construction because no suitable habitat is present in the BSA.

Removal of naturally occurring or ornamental (planted) trees, including palms, may result in direct effects on western mastiff bat and western yellow bat 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 effects 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 effects, including abandonment of roost sites. Safety improvements at the North Main Street Bridge crossing of the Los Angeles River would not be conducted on the underside of the bridge where bats could be roosting.

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 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 maternity site abandonment 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 an adverse effect. However, with the implementation of Mitigation Measure BIO-1 (described in Section 3.7.6) which requires preconstruction surveys for roosting special-status bats (including western mastiff bats and western yellow bats) and other native bat species to be conducted by a Metro-approved qualified bat biologist within two weeks prior to construction, effects on bridge-roosting bats through the provision of passive exclusion and use of alternative roosting structures would be minimized. In addition, Mitigation Measure BIO-1 would minimize effects on tree-nesting bats by requiring tree removal to occur outside of the bat maternity season. Upon implementation of Mitigation Measure BIO-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

Once operational, 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 BSA, the corresponding effects 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. Therefore, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Once operational, 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 BSA, the corresponding effects 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. Therefore, no indirect adverse effect would occur.

TOPIC 3.7-B	Nesting birds protected by the MBTA

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would affect nesting birds or suitable habitat that would support birds protected by the MBTA. The No Action Alternative would not include any Project-related changes to existing environmental conditions which includes suitable habitat that could support breeding, roosting, and foraging for birds protected by the MBTA. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other proposed projects could incrementally affect nesting birds protected by the MBTA, depending on the proposed project type and level of human encroachment. The context and intensity of effects would vary based on the location of other proposed developments but nesting birds in the BSA are presumably urban-adapted and well adapted to maintenance activities in the railroad ROW. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. Therefore, no direct or indirect effect would occur.

Build Alternative

Direct Effects – Construction

As described in Section 3.7.4, suitable habitat that would support breeding, roosting, and foraging birds protected by the MBTA, including mature trees (greater than 24 inches in diameter), utility poles, building rafters and eaves, and bridges, occurs throughout the BSA. Construction of the track, bridge improvements at Vignes Street and Cesar Chavez Avenue, safety improvements at the North Main Street Bridge, and other construction activities associated with the Build Alternative such as the platform canopy construction, have the potential to directly affect nesting birds protected by the MBTA that are present in the BSA during construction. Direct effects on an active nest, including removal of mature trees and bridge improvements, would be considered adverse because they could result in moderate reductions in population sizes of these species. Implementation of Mitigation Measure BIO-2 (described in Section 3.7.6) requires vegetation removal (mature trees greater than 24 inches in diameter) to occur outside of the breeding season or conducting preconstruction surveys prior to vegetation removal in areas with suitable nesting habitat if vegetation removal cannot be conducted outside of the nesting season. If nesting birds are found during preconstruction surveys, Mitigation Measure BIO-2 requires the biologist to establish an exclusionary buffer suitable to prevent nest disturbance. Exclusionary devices will be installed over suitable nest sites to prevent nesting at the bridges, buildings, or other structures by bridge- and crevice-nesting birds (i.e., swifts and swallows). In addition, prior to the start of construction, all Project personnel and contractors who will be on site during construction will complete a mandatory Worker Environmental Awareness Program (WEAP) training conducted by the Project Biologist or a designated qualified biologist. Implementation of Mitigation Measure BIO-2 would minimize potential for adverse construction effects on nesting birds protected by the MBTA. Therefore, with the implementation of Mitigation Measure BIO-2, no direct adverse effect would occur during construction.

Direct Effects – Operations

Any birds utilizing the BSA for breeding during operations are expected to be urban-adapted. Therefore, direct effects of operations on these species (i.e., increased risk of being struck by a train) are not anticipated to substantially reduce regional population sizes as effects are considered minor and short term. Therefore, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Construction and operation of the Build Alternative could result in indirect effects on birds protected by the MBTA that are present in the BSA. Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success. Implementation of Mitigation Measure BIO-2 (described in Section 3.7.6) requires vegetation removal to occur outside of the breeding season or conducting preconstruction surveys prior to vegetation removal in areas with suitable nesting habitat if vegetation removal cannot be conducted outside of the nesting season. If nesting birds are found

during preconstruction surveys, Mitigation Measure BIO-2 (described in Section 3.7.6) requires the Project Biologist or a designated qualified biologist to establish an exclusionary buffer suitable to prevent nest disturbance. With implementation of Mitigation Measure BIO-2, indirect effects would be minimized on birds protected under the MBTA during construction because the nest buffer would be of sufficient size to avoid indirect effects on nesting birds.

Indirect operational effects may include increased noise, vibration, night lighting, and human encroachment, which may reduce the likelihood of birds protected by the MBTA from nesting in proximity to the proposed infrastructure but are not anticipated to result in a take of nesting birds or eggs or other unlawful actions pursuant to 16 USC 703. However, the indirect operational effects of the Build Alternative may cause birds protected by the MBTA to shift their population distribution or migration route as an avoidance measure.

Based on the analysis above, no indirect adverse effect would occur during construction and operation.

TOPIC 3.7-C	Wildlife movement

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would potentially impact wildlife movement corridors within the Project study area. The No Action Alternative would not include any Project-related changes to existing environmental conditions. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could incrementally affect wildlife movement, depending on the proposed project type and level of human encroachment. However, no sensitive wildlife species were observed in the BSA, and none are expected to occur due to the lack of habitat. The BSA occurs within a heavily developed urban area more than 5 miles from any significant open space. The context and intensity of effects would vary based on the location of other proposed developments but any wildlife in the BSA is presumably well adapted to living in the urban context. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. Therefore, no direct or indirect adverse effects would occur during construction or operation.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would include safety improvements at the North Main Street Bridge. These safety improvements will be designed to avoid impacts to the Los Angeles River and would, therefore, not temporarily obstruct local north-to-south wildlife movement that may be occurring via the Los Angeles River. In addition, there were no sensitive species observed during the survey within in the BSA and the nearest large open spaces are 5 miles from the BSA. The

BSA is within a heavily developed urban area, and I-5 and SR-110 act as barriers to possible wildlife movement. Furthermore, construction of the Build Alternative would occur 0.8 mile from Arroyo Seco and would not have any direct effects on local east-to-west movements that may be occurring there. Therefore, no direct adverse effect on wildlife movement would occur during construction.

Direct Effects – Operations

Once operational, the Build Alternative would involve increased train traffic and periodic maintenance of Metro's ROW. However, operations would not obstruct local north-to-south wildlife movement that may be occurring via the Los Angeles River or local east-to-west movements that may be occurring via the Arroyo Seco. Therefore, no direct adverse effect on wildlife movement would occur during operation of the Build Alternative.

Indirect Effects – Construction and Operations

The Build Alternative is not anticipated to result in indirect effects on potential wildlife movement occurring in Arroyo Seco because it is located over 0.8 mile from the BSA. Noise and lighting produced during construction or operations could affect what limited wildlife movement occurs in the Los Angeles River by interfering with an animal's ability to communicate, navigate, and avoid predators or other dangers if such noise is substantially above what is typical under existing conditions and if nighttime lighting is directed toward the river. However, given the unvegetated, concrete-lined nature of the river and the urban nature of the surroundings, including the presence of transportation infrastructure that contributes to background noise under existing conditions, any wildlife utilizing the river is expected to be urban-adapted. In addition, lighting would not be directed toward the river, so is not expected to affect wildlife movement. Therefore, indirect effects on these species from construction of the Build Alternative are not anticipated to substantially reduce their regional population sizes or interfere substantially with their movement as these effects are considered minor and short term. Based on these factors, no indirect adverse effects would occur as a result of the Build Alternative.

TOPIC 3.7-D	Conflict with a tree preservation ordinance

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would require the removal or disturbance of native tree species that are protected under the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) and LA Metro's Tree Policy. The No Action Alternative would not include any Project-related changes to existing environmental conditions. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could incrementally result in the removal of protected trees. The context and intensity of effects would vary based on the location of other proposed developments and the number of protected trees. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill

development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. Therefore, no direct or indirect adverse effects associated with tree removal would occur.

Build Alternative

Direct Effects – Construction

The Build Alternative 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 (Ordinance No. 186873) and LA Metro's Tree Policy. The removal of protected trees without a permit would conflict with Ordinance No. 186873 and could be considered an adverse effect if not avoided. Mitigation Measure BIO-3 (described in Section 3.7.6) requires a registered consulting arborist to conduct a preconstruction survey for protected trees pursuant to Ordinance No. 186873 at least 120 days prior to construction. The locations and sizes of all protected trees will be identified prior to construction and overlaid on Project footprint maps to determine which trees may be removed or replaced in accordance with Ordinance No. 186873. Native trees protected by Ordinance No. 186873 will not be removed without approval by the City of Los Angeles. Therefore, with the implementation of Mitigation Measure BIO-3, no direct adverse effect would occur during construction.

Direct Effects – Operations

Once constructed, the Build Alternative would not require the removal of additional trees. 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 sensitive habitats. Therefore, no direct adverse effect related to tree removal would occur during operations.

Indirect Effects – Construction and Operations

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 could be considered an adverse effect if not avoided because the Build Alternative could result in the death of a protected tree. Mitigation Measure BIO-3 (described in Section 3.7.6) requires a registered consulting arborist to conduct a preconstruction survey for protected trees pursuant to Ordinance No. 186873 at least 120 days prior to construction. The locations and sizes of all protected trees will be identified prior to construction and overlaid on Project footprint maps to determine which trees may be removed or relocated prior to construction in accordance with Ordinance No. 186873. With the implementation of Mitigation Measure BIO-3, no indirect adverse effect related to tree removal would occur.

3.7.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects on biological and wetland resources.

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 and/or CDFW-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 and/or CDFW-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, generally when temperatures drop below 40 degrees Fahrenheit, (approximately November 1) or as determined by a qualified bat biologist). Should removal of mature trees that provide suitable bat roosting habitat be necessary after the cold weather, a qualified bat biologist shall conduct pre-construction surveys when temperatures are greater than 40 degrees Fahrenheit to ensure that bats are not present during removal.
- 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 and/or CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat throughout the BSA. 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, buildings, or other structures 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, buildings, or other structures 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, buildings, or other structures 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. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests on bridges that are under construction shall be repeated as frequently as necessary to

prevent nest completion. Removal of nest materials 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.

All Project personnel and contractors who will be on site during construction shall complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory WEAP training before they commence with work. The training shall advise workers of potential impacts on biological and potentially jurisdictional resources. At a minimum, the training shall include the following topics: (1) locations where special-status species may occur; (2) the purpose for resource protection; (3) protective measures to be implemented in the field; (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.

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 the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) and LA Metro's Tree Policy, including oaks (Valley Oak [*Quercus lobata*], California Live Oak [*Quercus agrifolia*], or any other tree of the oak genus indigenous to California but excluding the Scrub Oak [*Quercus berberidifolia*]), southern California black walnut (*Juglans californica*), western sycamore (*Platanus racemora*), and California bay (*Umbellularia californica*) 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. 186873. 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 NEPA Impact Summary

This section summarizes the effects related to biological and wetland resources of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

Under the No Action Alternative, no Project-related changes to the existing environmental conditions in the BSA would occur. Continued maintenance would occur in the railroad ROW; however, wildlife and migratory birds are presumably urban adapted and well adapted to maintenance activities. Future projects could incrementally affect special-status bat species, nesting birds, wildlife movement, and protected trees through habitat disturbance or removal. The extent of these effects is uncertain and would vary based on the location and scope of the future project. Because over 98 percent of the BSA is categorized as urban/developed, it is unlikely that future infill development would result in significant alterations of any naturally occurring habitat in the BSA. Therefore, no direct or indirect adverse effects would occur under the No Action Alternative.

Build Alternative

As discussed under Topic 3.7-A, removal of naturally occurring or ornamental trees, track work, and bridge modifications at Vignes Street and Cesar Chavez Avenue could disturb western mastiff bat and western yellow bat that may use these areas to roost. Disturbance could lead to maternity site abandonment if roosting bats are present, which is considered an adverse effect. While no western mastiff bats or western yellow bats were observed within the BSA during the general biological survey, there is still potential for occurrence. Mitigation Measure BIO-1 would minimize effects on bat species by requiring pre-construction surveys and tree removal to occur outside of the bat maternity season. With the implementation of Mitigation Measure BIO-1, no direct or indirect adverse effects on roosting bats would occur during construction. No direct or indirect adverse effects on roosting bats would occur during operation.

As discussed under Topic 3.7-B, construction activities (including track, bridge, and safety improvements, platform canopy construction) could affect nesting birds protected by the MBTA. These impacts would occur in areas where suitable habitat is present, including mature trees, utility poles, building rafters and eaves, and bridges, which is considered an adverse effect. With implementation of Mitigation Measure BIO-2, any vegetation removal would occur outside of the bird nesting season and exclusionary devices to be installed around nests to minimize the potential for adverse effects during construction. Therefore, with the implementation of Mitigation Measure BIO-2, no direct or indirect adverse effects would occur during construction. No direct or indirect effects on nesting birds would occur during operation of the Build Alternative.

As discussed under Topic 3.7-C, construction and operation of the Build Alternative would not obstruct or adversely affect wildlife movement. While noise and lighting produced during construction and operations could affect wildlife movement in the Los Angeles River, any wildlife utilizing the river would be adapted to the unvegetated surrounding and existing background noise. Therefore, no direct or indirect effects on wildlife crossings would occur during construction or operation.

As discussed under Topic 3.7-D, the Build Alternative could result in the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. While

98 percent of the BSA is categorized as urban/developed, Western sycamore trees occur within the BSA and are a protected tree species under this ordinance. The removal of protected trees without a permit would conflict with Ordinance No. 186873 and could be considered an adverse effect if not avoided. However, with implementation of Mitigation Measure BIO-3, preconstruction surveys for protected trees would be conducted at least 120 days prior to construction and native protected trees will not be removed without approval by the City of Los Angeles. With the implementation of Mitigation Measure BIO-3, no direct or indirect adverse effects related to tree removal would occur during construction. No direct or indirect adverse effects related to tree removal would occur during operation.

Table 3.7-2 provides an impact summary for the Build Alternative.

Table 3.7-2. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.7-A: Federally and State listed or candidate plant or animal species	*Construction* Adverse Effect	*Construction* **BIO-1: Bats**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.7-B: Nesting birds protected by the MTBA	*Construction* Adverse Effect	*Construction* **BIO-2: MBTA Species**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **BIO-2: MBTA Species**	*Indirect* No Adverse Effect
Topic 3.7-C: Wildlife movement	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect

Table 3.7-2. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.7-D: Conflict with a tree preservation ordinance	*Construction* Adverse Effect	*Construction* **BIO-3: Protected Trees**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **BIO-3: Protected Trees**	*Indirect* No Adverse Effect

3.8 Floodplains, Hydrology, and Water Quality

3.8.1 Introduction

This section provides an evaluation of potential effects related to floodplains, hydrology, and water quality that may result from the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Water Quality Assessment Report* and the *Link US Preliminary Low Impact Development (LID) Report* (Appendix J of this EIS), *Link US Preliminary Geotechnical Report* (Appendix K of this EIS), and published sources.

3.8.2 Regulatory Framework

Table 3.8-1 identifies and summarizes applicable laws, regulations, and plans relevant to floodplains, hydrology, and water quality.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(2 and 8)*, 64 *Federal Register* 28545–28556 (1999)[1]	*FRA's Procedures for Considering Environmental Impacts* indicate that an EIS shall consider the consistency of the alternatives with federal and state standards concerning drinking water, storm sewer drainage, sedimentation control, and non-point source discharges and the need for Section 402 or 404 permits. Additionally, an analysis of the projects' location within the base of any floodplains should be conducted with a discussion of risk associated with the alternative, effects on the floodplain, the degree to which the alternative supports incompatible development in the base floodplain, and methods proposed to reduce harm.
Federal Emergency Management Agency National Flood Insurance Act (42 United States Code 4001 et seq.) (1968)	The National Flood Insurance Act of 1968 is legislation that created the National Flood Insurance Program. FEMA administers the National Flood Insurance Program 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. FEMA establishes the design standard for flood protection covered by the FIRMs, 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).

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
Flood Disaster Protection Act (42 United States Code 4001 to 4128) (1973)	The FDPA is a law that expanded the NFIP and required flood-prone communities and property owners to participate in it. The law aimed to reduce flood-related losses and provide financial assistance to flood victims through insurance rather than loans. The law also mandated financial institutions to require flood insurance on loans secured by improved real estate in special flood hazard areas designated by FEMA. The law also encouraged local officials to adopt and enforce minimum floodplain management standards to minimize future flood damage.
Clean Water Act (33 United States Code §1341) (1972)	The CWA of 1972 is the primary federal law that governs and authorizes U.S. EPA and the states to implement activities to control water quality. The following are important CWA sections: • Section 102 states that parties involved prepare or develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters. • Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines. • 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. The State Water Resource Control Board and R RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards.
Federal Antidegradation Policy (40 Code of Federal Regulations §131.12)	The FAP is designed to protect existing uses, water quality, and national water resources.
Executive Order 11988 (42 Code of Federal Regulations 26971) - Floodplain Management (1977)	EO 11988 requires that federal agencies avoid or minimize adverse effects of occupancy and modifications of floodplains and to avoid direct and indirect support of development in floodplains if there is a practicable alternative.
Department of Transportation Order 5650.2 – Floodplain Management and Protection (1979)	On April 23, 1979, the DOT issued Order 5650.2 regarding floodplain management and protection with the purpose of avoiding and mitigating adverse floodplain effects in agency actions, planning programs, and budget requests.
State	
Porter-Cologne Water Quality Control Act (California Water Code, § 13000 et seq.) (1969)	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

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	regulates only surface water, the Porter-Cologne Water Quality Control Act regulates surface water, groundwater, and discharges to land.
Cobey-Alquist Flood Plain Management Act (California Water Code, Section 8400 et seq.) (1965)	The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce floodplain management regulations (California Water Code Section 8400, et seq.). Where a federal flood control project report has been issued designating floodway boundaries, the Department of Water Resources or the State Reclamation Board will not appropriate money in support of the project unless the applicable agency has enacted floodplain regulations. Those regulations must provide that: Construction of structures in the floodway that may endanger life or significantly reduce its carrying capacity shall be prohibited. Development will be allowed within the "restrictive zone" between the floodway and the limits of the floodplain as long as human life and the carrying capacity of the floodplain are protected (California Water Code Section 8410).
Water Quality Control Plan, Los Angeles Region (2014)	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 for surface waters and groundwater established for the Los Angeles Region that includes both Project study areas are municipal; agricultural supply; industrial service supply; industrial process supply; GWR; water contact recreation; non-water contact recreation; warm freshwater habitat; and wildlife habitat.
California Toxics Rule (1994)	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 Municipal Separate Storm Sewer System Permit (2022)	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." The 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. The 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. 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ) was adopted June 22, 2022, and became effective January 1, 2023.
California Department of Transportation Encroachment Permit (2020)	An encroachment permit is required from Caltrans for a permittee to enter state highway ROW to construct, alter, repair, improve facilities, or conduct specified activities. An encroachment permit must be obtained prior to commencement of proposed activities for placement of encroachments within, under, or over the state highway ROW. Based on the cost (over $3 million),

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	project funding (funding source other than the State Highway Fund), project type (public transit), and complexity, Metro would follow the oversight project process to obtain the encroachment permit from Caltrans.
National Pollutant Discharge Elimination System Industrial General Permit (2014)	The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (IGP), as amended by Order No. 2015-0122-DWQ 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.
National Pollutant Discharge Elimination System Construction General Permit (2022)	The CGP (Order No. 2009-0009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Orders No. 2010-0014-DWQ and 2012-0006-DWQ, which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. 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 (2014)	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. 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.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	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. 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 timeline 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 proposed infrastructure will be under the jurisdiction of the Phase II permit. For purposes of compliance with stormwater quality requirements, 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.
Local	
Southern California Regional Rail Authority Design Criteria Manual (2014)	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.
Water Quality Compliance Master Plan for Urban Runoff (2009)	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 National Pollutant Discharge Elimination System Permit (2021)	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. R4-2021-0105 (NPDES No. CAS004004). The NPDES permit prohibits storm water and non-storm water 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.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	On July 23, 2021, the Los Angeles RWQCB adopted Order No. R4-2021-0105, the NPDES Stormwater Permit for the County of Los Angeles and Ventura and cities within (NPDES No. CAS004004). The permit was issued to Los Angeles County (Principal Permittee) and 95 cities (Permittees) to reduce pollutants discharged from their MS4 to the MEP statutory standard. The permit became effective September 11, 2021.
Enhanced Watershed Management Program for the Upper Los Angeles Watershed	The MS4 Permit Order Number R4-2021-0105 (Permit) for Los Angeles County provides an innovative approach to permit compliance through development of EWMPs. Through a collaborative approach, an EWMP for the Upper Los Angeles River (ULAR) Watershed Management Area (EWMP area) was developed by the ULAR EWMP group. The ULAR EWMP group comprises the Cities of Los Angeles (lead coordinating agency), Alhambra, Burbank, Calabasas, Glendale, Hidden Hills, La Cañada-Flintridge, Montebello, Monterey Park, Pasadena, Rosemead, San Fernando, San Marino, South El Monte, South Pasadena, and Temple City, the County of Los Angeles (Unincorporated County), and the Los Angeles County Flood Control District. By electing to comply with the optional compliance pathway in the MS4 Permit, the ULAR EWMP Group has leveraged this program to facilitate a robust, comprehensive approach to stormwater management for the Los Angeles River watershed to address the priority water quality conditions in the EWMP area.
City of Los Angeles Stormwater Low Impact Development Ordinance (Ordinance #183833) (2015)	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 in October 2016. The updated LID Manual removed the requirement for a Standard Urban Storm Water Plan (SUSMP) and a Site Mitigation Plan, and now the required LID document is only the LID Plan.
City of Los Angeles Municipal Code (2015)	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 an 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 an SWPPP and implementation of construction and post-construction BMPs.
General Waste Discharge Requirements for Dewatering (2013)	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

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	groundwater and non-stormwater construction dewatering discharges in the Los Angeles and Ventura region.
General Waste Discharge Requirements for Dewatering from Contaminated Activities (2013)	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), effective April 7, 2013. This permit covers discharge of groundwater and non-stormwater construction dewatering waste that is contaminated in the Los Angeles and Ventura region.
Los Angeles County Municipal Code (1998)	Stormwater discharge is regulated under Chapter 12.80 Stormwater and Runoff Pollution Control of the County of Los Angeles Municipal Code. Under Section 12.80.480, discharge of stormwater to the County storm drain system is permissible only when connection to the storm drain system is made in accordance with a valid county permit in conjunction with other required permits.
City of Los Angeles General Plan Conservation Element (2001)	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.
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 life 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).

Notes:
BMP=Best Management Practice; Caltrans=California Department of Transportation; CGP=Construction General Permit; CWA=Clean Water Act; DOT=Department of Transportation; DWQ=Division of Water Quality; EIS=Environmental Impact Statement; EO=Executive Order; EWMP=Enhanced Watershed Management Program; FAP=Federal Antidegradation Policy; FDPA=Flood Disaster Protection Act; FEMA=Federal Emergency Management Agency; FR=Federal Register; FRA=Federal Railroad Administration; FIRM=Flood Insurance Rate Map; GWR=ground water recharge; 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; 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=Storm Water Pollution Prevention Plan; SWRCB=State Water Resources Control Board; ULAR=Upper Los Angeles River; U.S.=United States; U.S. EPA=United States Environmental Protection Agency; USACE=United States Army Corps of Engineers; USC=United States Code; VOC=volatile organic compound; WQCMPUR=Water Quality Compliance Master Plan for Urban Runoff

3.8.3 Methods for Evaluating Environmental Effects

Topic Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Drainage patterns, soil erosion, and siltation.
- Stormwater.
- Flooding.
- Water quality standards and waste discharge requirements.

Geographic Area Considered

Project study area is used to characterize the affected environment related to watersheds, surface waters, groundwater basins, and floodplains and the Project footprint is the geographic area considered to determine where potential impacts would occur on surface water resources adjoining, adjacent to, or downstream of the Project footprint that could receive runoff and sediment from Project implementation.

Methodology

This section was prepared pursuant to the FRA's *Environmental Procedures for Considering Environmental Impacts* (1999), which requires an environmental evaluation of water quality and flood hazards. It summarizes the results of Drainage and Water Quality Technical Reports contained in Appendix J of this EIS, including the *Link US Water Quality Assessment Report* and the *Link US Preliminary LID Report,* and other drainage studies prepared throughout Project development.

These studies provide an evaluation of potential effects on existing drainage systems for each of the jurisdictions affected, including Caltrans and the City of Los Angeles. Preconstruction and post-construction drainage conditions were modeled, and stormwater management BMP were identified to minimize adverse effects on floodplains, 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 and evaluates the physical area for anticipated drainage system improvements. Lastly, this evaluation includes the procedures, BMPs, and mitigation measures (Section 3.8.6) that would be applied to reduce potential adverse effects on water quality, drainage systems, and stormwater management.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the potential effects are described in

Section 3.8.5 to determine if the No Action Alternative or Build Alternative would result in beneficial or adverse effects.

Drainage Patterns, Soil Erosion, and Siltation

Project-related effects would be considered adverse if the Build Alternative would alter existing drainage patterns in such a way that increases runoff or results in accumulation of sediment in downstream areas causing erosion or siltation on or off site.

Stormwater

Project-related effects would be considered adverse if the Build Alternative results in additional sources of polluted runoff, degrades water quality, or contributes to an increase in stormwater runoff that would exceed the capacity of existing or planned drainage systems.

Flooding

Project-related effects would be considered adverse if the Build Alternative introduces new infrastructure in a flood hazard area (100- or 500- year) that would impede or redirect flood flows or increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions.

Water Quality Standards and Waste Discharge Requirements

Project-related effects would be considered adverse if the Build Alternative exceeds surface water quality objectives described in Table 3.8-2 or groundwater objectives in Table 3.8-3.

3.8.4 Affected Environment

Floodplains

Floodplains for the Project study area are shown on Panel 06037-163G of the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Map (FEMA 1998). This panel was revised in December 1998 and as shown in Figure 3.8-1, the 100-year flood boundary does not extend over the west bank of the Los Angeles River into the Project study area. The entirety of the Project study area is located in Zone X, Areas of Minimal Flooding, which represents an area that is determined to be outside the 0.2 percent annual chance flood (i.e., 500-year flood).

Hydrology

Regional Hydrology

The Project study area is within the Los Angeles River watershed, which includes the Los Angeles River. The western portion of the watershed includes the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains, while the eastern portion includes the San Gabriel Mountains (U.S. EPA 2020). As depicted in Figure 3.8-2, the watershed encompasses, and is shaped by, the path of the Los Angeles River, which flows from its headwaters in the Simi Hills and Santa Susana

Mountains, to the Santa Monica 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 824 square miles (Los Angeles RWQCB 2014).

Additional watershed information for the Project study area is provided in the *Link US Water Quality Assessment Report* (Appendix J of this EIS).

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 (GWR) through spreading basins. 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]). As this section relies heavily on the Basin Plan, it is important to note that 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 study area, and eventually to Reach 2 of the Los Angeles River (Appendix J of this EIS). Runoff within Caltrans ROW enters a 138-inch reinforced concrete arch in US-101, which connects to the existing municipal storm drain system and discharges to the Los Angeles River.

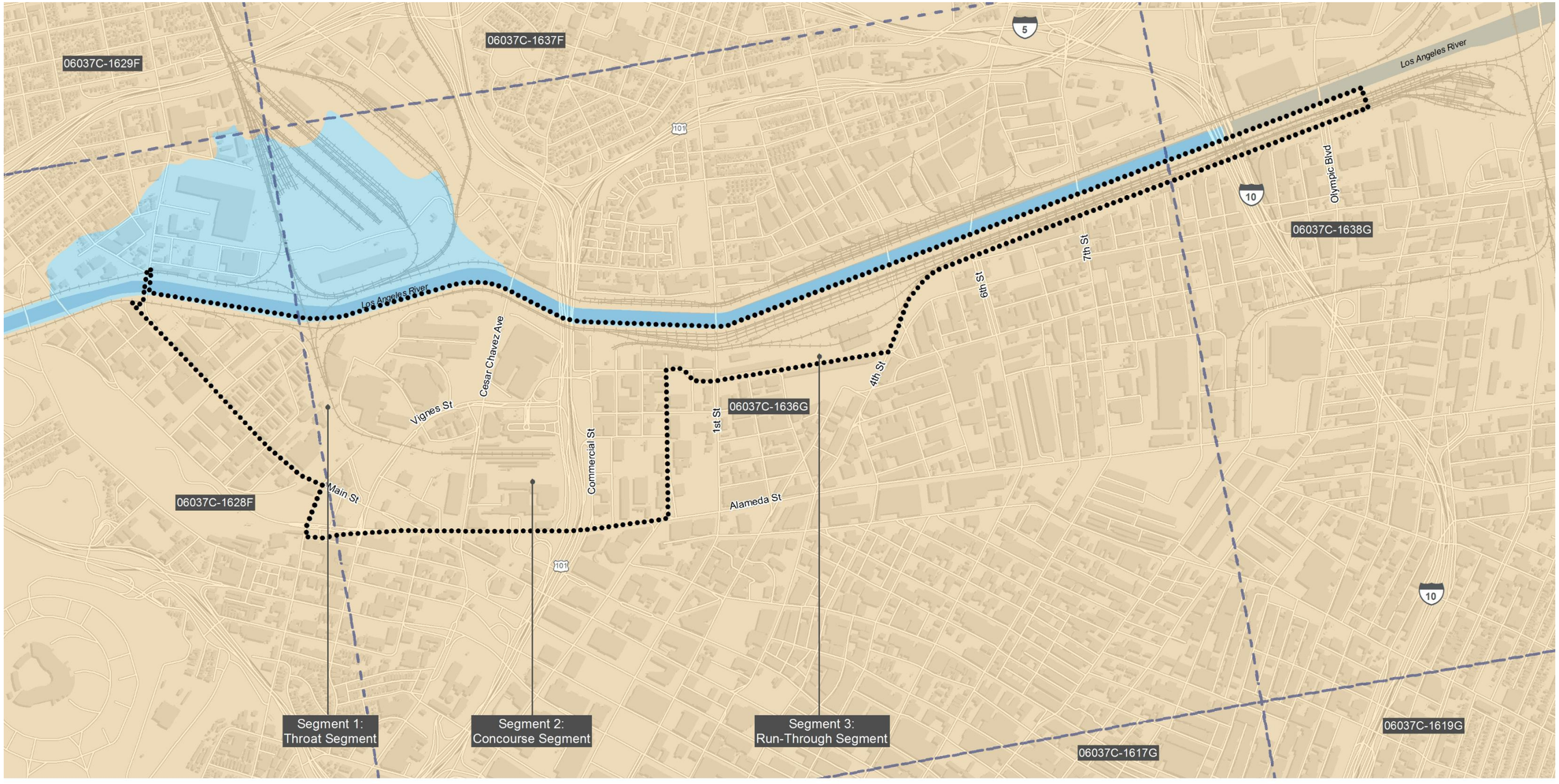
Precipitation and Climate

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 major storms, with snowfall occurring at higher elevations. The average annual rainfall for the City of Los Angeles is approximately 18.63 inches (U.S. Climate Data 2023).

Surface Waters

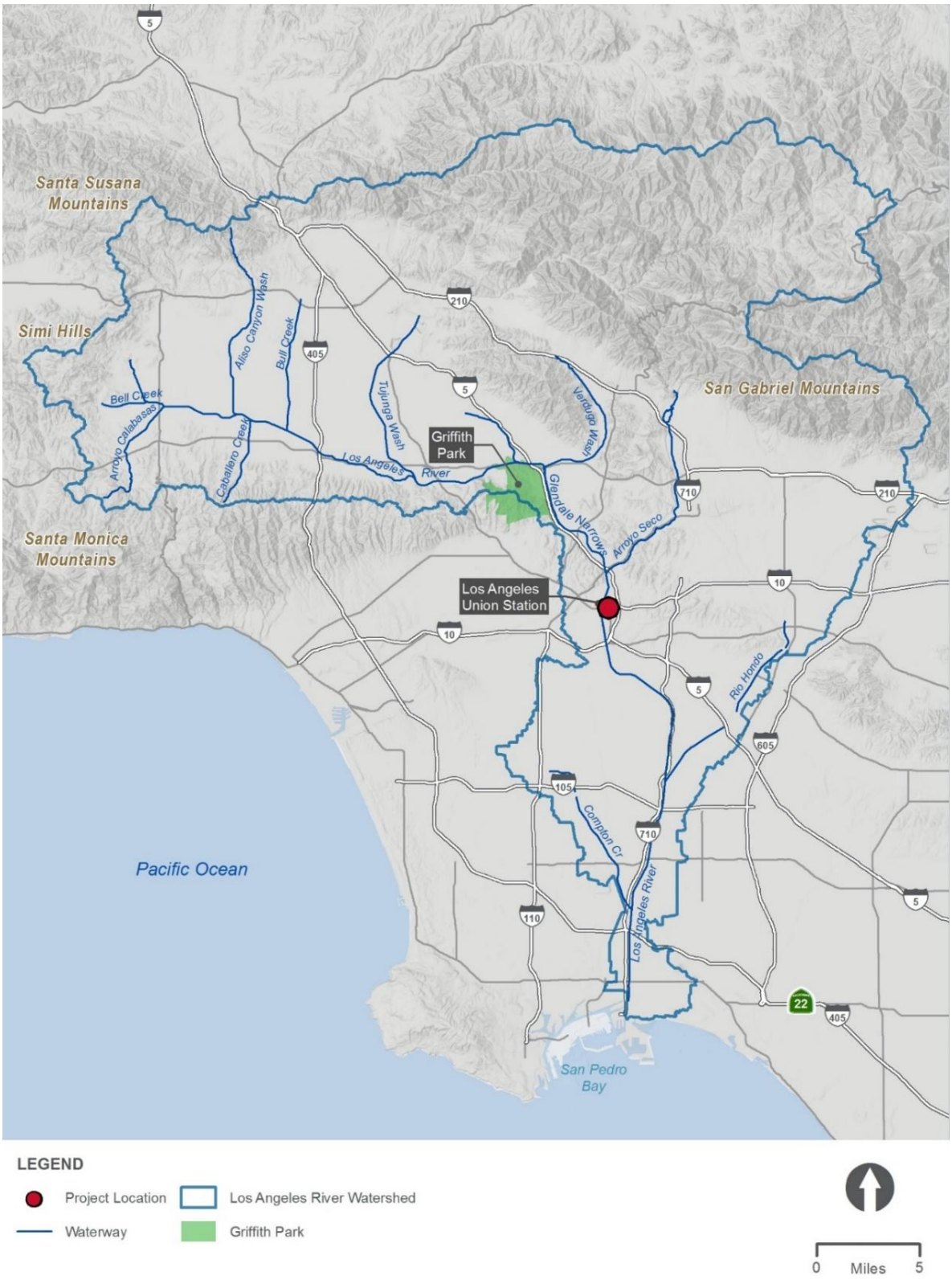
The Los Angeles River is a highly modified channel, with concrete lining the majority of its length, including the portion adjacent to the Project study area. Along the middle and lower sections of the river, it is unlined and supports natural habitat for fish and other wildlife species; however, the majority of the river carries urban runoff, tertiary-treated effluent from several municipal wastewater treatment plants, and illegally dumped materials, all of which contribute to the impaired water quality in the Los Angeles River and its tributaries.

Figure 3.8-1. Flood Insurance Rate Map for Project Study Area



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Figure 3.8-2. Regional Hydrology



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Drainage and Flood Control Improvements

Attachment B of the of the *City of Los Angeles Emergency Operations Plan* (City of Los Angeles 2018) identifies the Project study area as located within a dam inundation area. The majority of 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 that are under the jurisdiction of Los Angeles County within the Project study area are located along Bolero Lane and Leroy Street near Mission Tower in Segment 1 (throat segment).

As shown in Appendix A of the *Link US Preliminary LID Report* (Appendix J of this EIS), there are six major storm drains within the Project study area. Drainage in the Project study area is managed by Metro (and SCRRA), the City of Los Angeles, and Caltrans. Runoff in the area is generated from a combination of hard surfaces, including roadways, buildings, and bridges. A network of underground facilities collects runoff (e.g., curbside catch basins and inlets) and directs the flows to the Los Angeles River. Drainage from LAUS is directed to a 108-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 comprises 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 and the Pacific Ocean.

Municipal Supply

The regional potable water supply is delivered by the LADWP. The supply consists of a mixture of local groundwater resources, recycled water from local water reclamation facilities, and imported water. Approximately 46 percent of the water demand is met through imported water bought from the Metropolitan Water District (LADWP 2023a).

Groundwater Hydrology

The Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin Number 4-11.04 of the South Coast Hydrologic Region) is the major groundwater basin located in the Project study area. Based on the *Link US Preliminary Geotechnical Report* (Appendix K of this EIS), 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 AMSL. Groundwater typically flows westward through San Pedro formation. Historical groundwater depths as shallow as 13.5 feet bgs have been reported, but more recent measurements indicate 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 (*Link US Preliminary Geotechnical Report,*

Appendix K of this EIS). Groundwater is expected to be encountered at elevations deeper than 10 to 15 feet bgs. The *Link US Phase I Environmental Site Assessment* (Phase I ESA) prepared in 2016 addresses potential groundwater contamination. Groundwater Quality is described in the discussion below under Water Quality.

Water Quality

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 (Los Angeles RWQCB 2014). Per the Basin Plan, the surface water beneficial uses for Reach 2 of the Los Angeles River are as follows:

- Municipal and Domestic Supply (MUN);
- Groundwater Recharge (GWR);
- Industrial Service Supply (IND);
- Water Contact Recreation (REC-1);
- Non-Contact Water Recreation (REC-2);
- Warm Freshwater Habitat (WARM); and
- Wildlife Habitat (WILD).

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 (Los Angeles RWQCB 2014).

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.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
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.
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 affects beneficial uses.
Exotic vegetation	Exotic vegetation will not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects 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 affect 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 by more than 0.5 unit 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/L (30-day average) for protection of human health and 14 nanograms/L and 30 nanograms/L (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 CCR, Title 22.
Solids (suspended and settleable)	Waters will not contain suspended or settleable material in amounts that cause nuisance or adversely affect 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 affect 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 affect 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 affect beneficial uses.
Turbidity	Waters will be free of changes in turbidity that cause a nuisance or adversely affect 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: Link US Water Quality Assessment Report (Appendix J of this EIS)

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 supply; GWR=groundwater recharge; IND= industrial supply; REC-1=water contact recreation; REC-2= non-contact water recreation; WARM=warm freshwater habitat; WILD=wildlife 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
- Agricultural Supply (AGR)
- IND
- Industrial Process Supply (PROC)

The stipulated water quality objectives for groundwater, as identified in the Basin Plan for Subbasin 4-11.04, are listed in Table 3.8-3 (Los Angeles RWQCB 2014). 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 (Caltrans 2018b).

Table 3.8-3. Groundwater Water Quality Objectives

Constituent	Concentrations
Bacteria	In groundwaters used for domestic or municipal supply, the concentration of coliform organisms over any 7-day period will be less than 1.1/100 milliliter.
Boron	Boron will not exceed 1.0 mg/L.
Chemical constituents and radioactivity	Groundwaters designated for use as domestic or MUN supply will not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in CCR, Title 22. Groundwaters will not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.
Chloride	Chloride will not exceed 150 mg/L.
Nitrogen (Nitrate, Nitrite)	Groundwaters 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	Groundwaters will not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
Total dissolved solids	Total dissolved solids will not exceed 700 mg/L.

Source: Link US Water Quality Assessment Report (Appendix J of this EIS)
Notes:
mg/L=milligrams/liter; CCR=California Code of Regulations

Existing Water Quality

Water Quality Monitoring

The Surface Water Ambient Monitoring Program, conducted by the State Water Resources Control Board (SWRCB), maintains water quality stations along the Los Angeles River. The most recent water quality data collection conducted near the Project study area occurred on June 29, 2005. Table 3.8-4 summarizes water quality measurements collected by the Surface Water Ambient Monitoring Program at Sites 412LAR007 and 412CE0104 of the Los Angeles River (HUC-8 Code 18070105) for selected constituents and provides a comparison to water quality objectives provided in the Basin Plan. Monitoring Site 412LAR007 is located just south of Atlantic Boulevard in the City of Vernon, approximately 2.6 miles southeast of (downstream from) the Project study area. Monitoring Site 412CE0104 is located between Spring Street and Main Street (about 0.8 mile south of SR-110) in the City of Los Angeles and approximately 4.9 miles north of (upstream from) the Project study area.

Table 3.8-4. Los Angeles River Water Quality – 2005 Results

Analyte	Unit	Basin Plan Water Quality Objectives	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~0.8 mile below SR-110 Station Code 412CE0104
Specific Conductivity, Total	microsiemens/ centimeter	—	1323	945
Oxygen, Dissolved, Total	mg/L	>5	21.31	12.5
Temperature	°C	<26.67	29.81	25.1
Velocity	feet/second	—	—	0
Salinity, Total	parts per thousand	<1	0.65	0.4
Turbidity	nephelometric turbidity unit	<5	4.7	—
Oxygen, Saturation, Total	percentage	—	284.2	—
pH	units	> 6.5, < 8.5	9.7	—
Nitrite as dissolved nitrogen	mg/L	<1	1.42	—
Orthophosphate as dissolved phosphorus	mg/L	—	0.343	—

Table 3.8-4. Los Angeles River Water Quality – 2005 Results

Analyte	Unit	Basin Plan Water Quality Objectives	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~0.8 mile below SR-110 Station Code 412CE0104
Chloride, Dissolved	mg/L	<190	107	—
Hardness as CaCO3, Total	mg/L	—	332	—
Ammonia as total nitrogen	mg/L	<0.233	0.059	—
Nitrogen, Total Kjeldahl	mg/L	<8	2.86	—
Phosphorus as total phosphorus	mg/L	—	0.597	—
Nitrate as dissolved nitrogen	mg/L	<10	2.6	—
Chlorophyll-a, Particulate	micrograms/liter	—	63.7	—
Sulfate, Dissolved	mg/L	<350	226	—

Source: Link US Water Quality Assessment Report (Appendix J of this EIS)
Notes:
°C = degree Celsius; $CaCO_3$=calcium carbonate; mg/L=milligrams per liter; pH=potential of hydrogen

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 vicinity of the Project study area. 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 both north and south of the Project study area (California Water Boards 2007).

Local Water Quality

Section 303(d) List of Impaired Waters

Within the Chavez Ravine and Compton Creek hydrologic subareas of the Lower Los Angeles River HA, included within the Los Angeles hydraulic unit, the Los Angeles River Reach 2 is the receiving waterbody that is listed as an impaired waterbody on the 2020-22 CWA Section 303(d) list (SWRCB 2022). The Section 303(d) list includes indicator bacteria, ammonia, copper, lead,

nutrients (algae), oil, and trash as pollutants of concern (POC). Table 3.8-5 summarizes the hydrologic information, Section 303(d) listed water bodies and their associated POCs, total maximum daily loads (TMDL), and targeted design constituents (SWRCB 2022).

A targeted design constituent is a pollutant that Caltrans runoff characterization studies have identified 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 Caltrans NPDES Permit requirement to provide treatment of the Caltrans-identified targeted design constituents.

Table 3.8-5. 2020-22 Clean Water Act Section 303(d) Listed Waterbodies and Pollutants of Concern

Jurisdiction	Hydrologic Unit	Hydrologic Area	Hydrologic Sub-Area Name or Number	Water Body	POCs
Los Angeles RWQCB[1]	Los Angeles	Lower Los Angeles River	Chavez Ravine and Compton Creek	Los Angeles River (Reach 2)	Ammonia,[3] Indicator Bacteria,[4] Copper,[5] Lead,[6] Nutrients (Algae),[7] Oil,[8] Trash[9]
Los Angeles RWQCB (Caltrans)[2]	Los Angeles River[10]	Los Angeles[10]	412.10[10]	Los Angeles River (Reach 2)	Ammonia,[3] Coliform Bacteria,[4] Copper,[5] Lead,[6] Nutrients (Algae),[7] Oil,[8] Trash[9]

Notes:
Source: SWRCB 2022
[1] 2020-22 Section 303(d) Approved List
[2] Caltrans 2018
[3] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2004-03-18.
[4] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2012-03-23.
[5] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2005-12-22.
[6] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2005-12-22.
[7] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2004-03-18.
[8] Pollutants of concern with an EPA-approved TMDL, Expected TMDL Completion Date, 2019.
[9] Pollutants of concern with an EPA-approved TMDL, USEPA TMDL Approved Date, 2008-07-24.
[10] Based on CalWater Watershed Data.

Caltrans=California Department of Transportation; POC=pollutant of concern; RWQCB=Regional Water Quality Control Board; TMDL=total maximum daily load; U.S. EPA=United States Environmental Protection Agency

Groundwater Quality

The Coastal Plain of Los Angeles (Central) Groundwater Basin (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 because of the urban land uses that result in contaminants seeping into the subsurface. Commercial and industrial activities include leaking aboveground and underground storage tanks (UST) containing various quantities of hazardous materials that are discharging these contaminants and presenting themselves as inorganic and organic pollutants. Inadequate storage, handling, and disposal

practices also contribute to pollution. Pesticides and fertilizers also degrade groundwater quality. Overloaded or improperly treated septic tanks and illegal discharges are also sources of bacteria and pollutants.

Groundwater in the Project study area is generally considered drinking-water quality for inorganic constituents but is likely to contain organic contaminants from solvent and petroleum hydrocarbon pollution associated with industrial activities in the area (Caltrans 2005).

3.8.5 Environmental Consequences

TOPIC 3.8-A	Drainage patterns, soil erosion, and siltation

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would require substantial amounts of grading and excavation. The No Action Alternative would not include any changes to existing environmental conditions. Therefore, existing drainage patterns within the Project study area would remain and risks related to an increase in soil erosion and siltation would not occur.

Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects, depending on the proposed project type could incrementally affect drainage patterns, soil erosion, and siltation. The magnitude of effects would vary based on the location of other proposed developments but drainage patterns, soil erosion, and siltation are not expected to be significantly altered due to the urbanized nature and topography of the Project study area and ongoing compliance with applicable Metro requirements and other municipal and water quality requirements. Therefore, no direct or indirect effects related to drainage patterns, soil erosion, and siltation would occur as a result of the No Action Alternative.

Build Alternative

Direct Effects – Construction

According to the *Link US Water Quality Assessment Report* (Appendix J of this EIS), due to the lack 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 (USDA 2023), the soil erodibility factor within the Project footprint is approximately 0.24, on a scale of 0.02 to 0.65 which corresponds to a low to moderate for erosion potential. This estimate is primarily based on the percentage of silt, sand, and organic matter; soil structure; and saturated hydraulic conductivity of the soil. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

During construction, the Build Alternative would require substantial amounts of grading and excavation within the Project footprint to reconfigure existing drainage patterns and ensure that

connections to existing drainage infrastructure are maintained and/or improved. 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, potentially resulting in substantial erosion on adjacent properties. If not properly managed, any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas. Effects could be adverse if not properly managed. Implementation of Mitigation Measure HWQ-1 (described in Section 3.8.6), which requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer, would minimize effects of the Build Alternative on drainage patterns. The two main objectives of the SWPPP are to help identify the sources of sediment and other pollutants that affect the quality of storm water discharge and to implement BMPs to reduce sediment and other pollutants in storm water and non-storm water discharge. Construction site BMPs designated for soil stabilization and sediment control, including, but not limited to, temporary measures such as stabilized construction entrances/exits, a move-in/move-out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures are required as part of the SWPPP to actively control sediments and stormwater discharges from construction of the Build Alternative. Upon implementation of Mitigation Measure HWQ-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

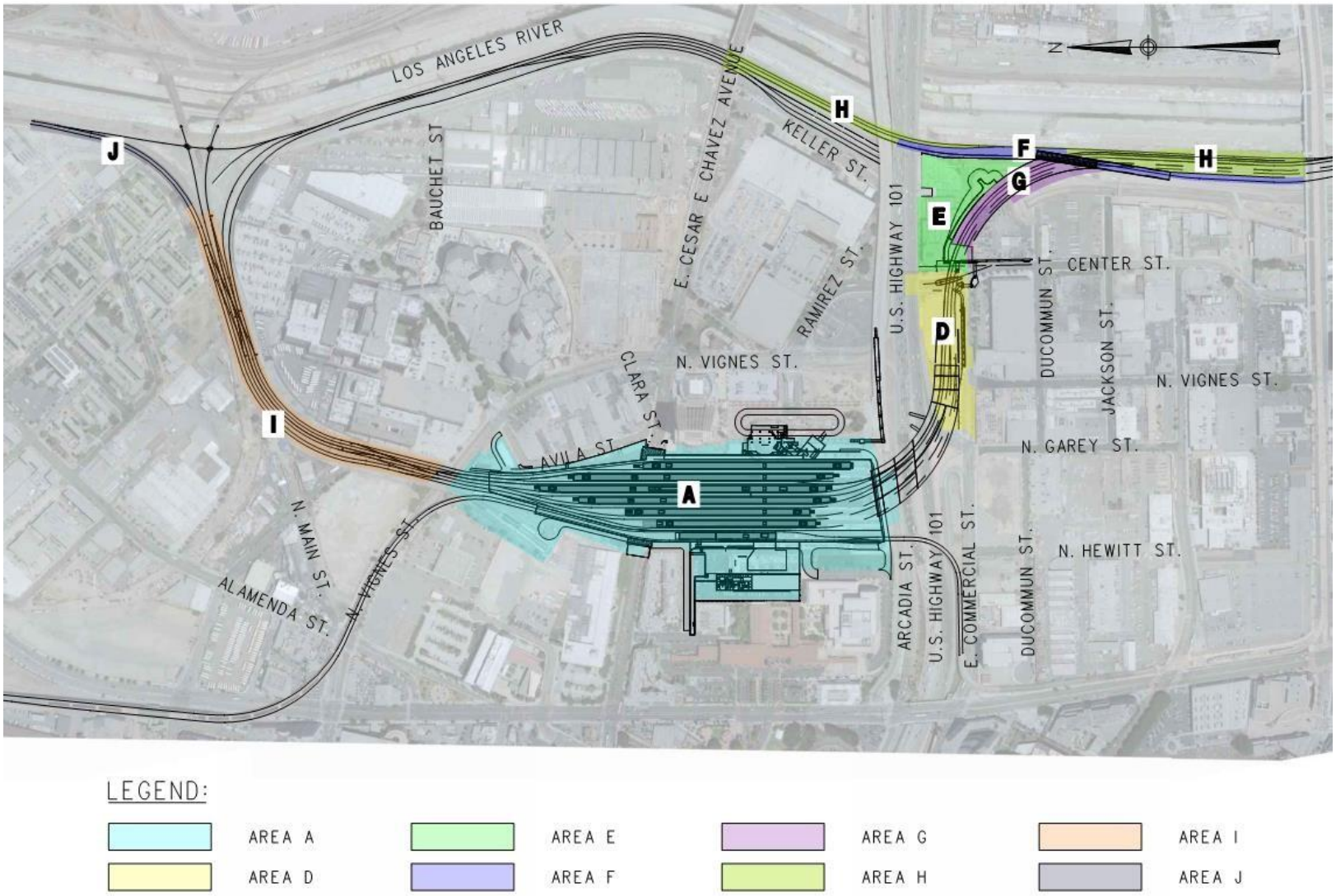
As discussed in Section 4.0, Post Construction Drainage in the *Link US Preliminary LID Report* (Appendix J of this EIS), the Project footprint is divided into eight major drainage areas, which are identified as Areas A, D, E, F, G, H, I, and J, as Figure 3.8-3 depicts. The *Link US Preliminary LID Report* (Appendix J of this EIS) provides details for existing infrastructure for each drainage area, alterations to existing drainage patterns, as well as any structural BMPs that may be required. The Build Alternative would permanently increase impervious surfaces in the non-Caltrans ROW portion of the Project study area by adding 5.3 acres of impervious surfaces.

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 the Caltrans drainage system since the US-101 overhead viaduct acts as a roof to the applicable Caltrans drainage area. The BMP approach for the stormwater within Caltrans ROW would be further investigated during the plan, specification, and estimate phase, in cooperation with Caltrans.

The Build Alternative would slightly increase impervious surface within Caltrans ROW (0.14 acre of net new impervious surface). This slight increase in impervious surface has the added benefit of not exposing more substrate, which would limit erosion and the need for additional sediment control. 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. Therefore, the runoff associated with the US-101 overhead viaduct would not exceed the capacity of the tributary Caltrans system (Appendix J of this EIS).

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Figure 3.8-3. Overview of Major Drainage Areas for Post-Construction Conditions



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Alteration of existing drainage patterns in the Project study area could result in localized flooding if not properly managed. Further, an increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event, which transports pollutants to receiving waters. Downstream erosion and increases in suspended particles and sediment would directly increase turbidity of receiving waters and is considered an adverse effect. Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8.6) include provisions for post-construction BMPs to minimize the potential for adverse operations effects on water quality. Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from US-101, as well as other areas within the Project footprint; therefore, 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 proposed storm drain improvement would be designed in accordance with the provisions of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8.6 and summarized below) to preserve existing drainage patterns and time of concentration to the extent practicable to minimize changes to existing drainage patterns for drainage courses that pass through the Project footprint. Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 require post-construction BMPs to be implemented by the applicable agencies to minimize direct adverse effects associated with drainage patterns, soil erosion, and siltation throughout operations.

- Mitigation Measure HWQ-2 requires Metro to comply with the provisions of the Caltrans MS4 Permit (Order Number 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ), and any applicable provisions of the Caltrans SWMP for long-term BMPs.

- Mitigation Measure HWQ-3 requires Metro to comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), (known as the Phase II permit), for the portion of the project outside Caltrans ROW.

- Mitigation Measure HWQ-4 requires Metro to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004) (known as the Phase I Permit). Metro will be required to 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.

Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth

around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. New infill development may alter drainage patterns or result in potential soil erosion during construction and operation. The magnitude of effects is based on the location and topography of the project and the surrounding environment. All new development would be required to comply with applicable building and drainage requirements and would be implemented in consideration of other systems outside the specific project location to minimize potential for drainage, erosion, and siltation impacts. Therefore, no indirect adverse effect would occur.

TOPIC 3.8-B	Stormwater

No Action Alternative

Under the No Action Alternative, no construction activities would occur, and no excavated soil would be exposed to increase the potential for soil erosion and polluted stormwater runoff. The No Action Alternative would not include any Project-related changes to existing configuration of local storm drains or drainage features. As described in Chapter 1.0, Purpose and Need, and shown in Figure 1-6, LAUS experiences water ponding which is inadequate for public safety and the expected capacity increase. Existing conditions within the Project study area and at LAUS would remain the same; stormwater would still drain through local inlets and drainage systems that could be transported into the Los Angeles River. Furthermore, LAUS would continue to experience water ponding without upgrades and improvements within the facility. Reasonably foreseeable future projects and other maintenance activities in the railroad ROW would still occur. Depending on the scale, location, and type of project, stormwater runoff could be incrementally affected. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which drainage systems or runoff velocities are affected. Maintenance activities in the railroad ROW would be subject to applicable stormwater requirements and all other infill development would be subject to CEQA and NEPA reviews and other municipal zoning requirements, as applicable, to avoid, minimize, and/or mitigate the potential for adverse effects on stormwater. No direct or indirect adverse effect would occur.

Build Alternative

Direct Effects – Construction

POCs during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction of the Build Alternative, excavated soil would be exposed, and there would be increased potential for soil erosion. In addition, as described in Section 3.10, Hazardous Waste and Materials of this EIS, excavated soils would be contaminated, and the contractor would be required to follow recommendations of the *Link US Phase I ESA* prepared in 2016, or forthcoming Phase II ESA (Mitigation Measure) for disposal of the soils. 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, 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 into the Los Angeles River. These effects may vary depending on the type and amount of waste that could end up in the Los Angeles River. This is considered an adverse effect. Mitigation Measure HWQ-1 (described in Section 3.8.6) requires compliance with the NPDES Program via preparation and implementation of an SWPPP and Mitigation Measure HAZ-1 (described in Section 3.8.6) includes provisions for soil characterization, proper handling, transport, treatment and disposition of hazardous materials, methods for emergency response, and personnel training to minimize the potential transport of soils and contaminants to stormwater drainage systems and associated adverse effects on water quality during construction of the Build Alternative. Upon implementation of Mitigation Measures HWQ-1 and HAZ-1, no direct adverse effect would occur related to stormwater during construction.

Direct Effects – Operations

As discussed above, operation of the Build Alternative would increase impervious surfaces within Caltrans ROW by 0.14 acre (net new impervious area); however, the runoff associated with the US-101 overhead viaduct would not exceed the capacity of the tributary outside of the Project footprint or the Caltrans system below because stormwater would be collected through a series of inlets in the center of the structure and directed, untreated, to the Caltrans on-site drainage system via one of the columns of the US-101 viaduct structure. Only a small amount of stormwater north of the Caltrans ROW would be added to the viaduct area. The BMP approach for the stormwater within Caltrans ROW would be further investigated during the plan, specification, and estimate phase, in cooperation with Caltrans.

Operation of the Build Alternative would also increase impervious surfaces outside of Caltrans ROW by 5.3 acres. An overall increase in stormwater runoff is anticipated to result from increased impervious surface area, which would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not properly managed. This is considered an adverse effect. The Build Alternative includes capture and use, biofiltration/bioretention, and structural BMPs all of which 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, as there is no good location for capture and use or bioretention BMPs given that it is within the railroad ROW; a capture and use BMP (cistern) would address the rest of this segment, including a portion of the concourse area (Segment 2). Segment 1 includes the portion of Drainage Area A that is north of Cesar Chavez Avenue, and Drainage Areas I and J.
- In Segment 2: Concourse Segment, capture and use BMP (cisterns) would be considered. The extent of BMPs in the concourse area would be refined in final design. Segment 2 includes the portion of Drainage Area A that is south of Cesar Chavez Avenue and north of US-101.

- In Segment 3: Run-Through Segment, south of US-101, a structural stormwater vault is recommended at Drainage Area D on the west side of Center Street under the proposed Center Street Bridge if space is not available for biofiltration. A biofiltration basin is recommended north of vacated Commercial Street at Drainage Area E. A structural BMP (Contech Jellyfish Filter) would address the runoff for Drainage Area H south of Ducommun Street. The selection of BMP type and design would be finalized during subsequent phases of design.

Because Caltrans, Metro, and CHSRA have jurisdiction over various areas of runoff from 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. Implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8.6 and summarized above) include provisions for post-construction BMPs to minimize potential stormwater runoff resulting from an increase in impervious surface area and resultant pollutant runoff from the Build Alternative.

Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. New infill development would be required to comply with applicable construction and operational stormwater pollution requirements and would be implemented in consideration of other systems outside the specific project location to minimize potential for impacts on stormwater. No indirect adverse effect related to exceeding the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff would occur.

TOPIC 3.8-C	Flooding

No Action Alternative

Reasonably foreseeable future projects along with other maintenance activities in the railroad ROW would still occur under the No Action Alternative. Flooding risk is not expected to be exacerbated because the Project study area is outside of the 500-year flood zone, maintenance activities in the railroad ROW have very minimal potential to cause flooding, and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. No direct or indirect adverse effect would occur from the No Action Alternative.

Build Alternative

Direct Effects – Construction

The Project study area is not located within a 100-year or 500-year floodplain; therefore, there is minimal potential for construction activities to cause flooding within or outside of the Project footprint. Thus, in this context, construction activities would not lead to adverse effects associated with flooding. The Build Alternative would not increase or negatively affect the Project study area's vulnerability to levee and dam failure. 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 during construction beyond existing conditions. No direct adverse effect related to flooding would occur during construction.

Direct Effects – Operations

Although the eastern portion of the Project study area is located in an inundation zone, the Build Alternative is not located within a 100-year or 500-year floodplain; therefore, facilities associated with the Build Alternative have less potential to be affected by flooding throughout operations. Furthermore, the proposed infrastructure would be designed and constructed in accordance with standard engineering practices, so people or structures are not exposed to a higher risk of loss, injury, or death involving flooding above and beyond the existing condition. The Build Alternative would result in improvements or modifications to drainage areas within the Project study area to maintain drainage flow patterns. According to terrain data and elevational comparison, if floodwaters from Los Angeles were to overflow the channel system, they would inundate the surrounding lower lying properties and sections of the local roadway system, but water levels would not likely reach the elevation of the existing freeway. Per the National Flood Insurance Program, the maximum allowable increase in floodplain elevation due to the Build Alternative is 1 foot. Therefore, the Build Alternative would not affect any floodplain areas or require an update to flood maps given that operations would occur outside of the flood zones. In this context, the Build Alternative would not expose people or structures to a significant flooding-related risk beyond existing conditions during operations. No direct adverse effect related to flooding would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP and 2020 RTP/SCS. New infill development would be required to comply with applicable construction and operational stormwater pollution requirements and would be implemented in consideration of other systems outside the specific project location to minimize potential for impacts related flooding. No indirect effect related to flooding are anticipated during construction or operation.

TOPIC 3.8-D	Water quality standards and waste discharge requirements

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Although no construction activities would occur related to the Project, reasonably foreseeable future projects along with other maintenance activities in the railroad ROW would still occur which could result in excavations, exposure of soils, and activities that could increase polluted runoff to nearby water bodies. It is important to note that the potential for an adverse effect on water quality and exceedance of stormwater and non-stormwater discharge is a risk that occurs perpetually. Changes related to other projects, depending on the proposed project type could incrementally affect water quality standards and waste discharge requirements. The context and intensity of effects would vary based on the location of other proposed developments. Water quality standards and waste discharge requirements would be required to be met for all maintenance activities and other infill development. New development would also be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. Therefore, no direct adverse effect would occur from the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Grading activities would involve the temporary operation of heavy equipment and cutting of shallow excavations. As discussed in the *Link US Water Quality Assessment Report* (Appendix J of this EIS), the Project study area is relatively flat, and the potential for temporary soil erosion is considered to be low to moderate; however, 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 temporarily block storm drainage channels and cause downstream sedimentation.

Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials may also temporarily expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. As discussed in the *Link US Water Quality Assessment Report* (Appendix J of this EIS), surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2 and other downstream reaches of the river. Similarly, tainted soil may be subject to temporary erosion from storm events. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. Contaminated groundwater may also be temporarily encountered during dewatering activities. If not properly addressed, the extracted contaminated groundwater could substantially degrade surface water and exceed water quality objectives listed in Table 3.8-2. This is considered an adverse effect. Mitigation Measures HWQ-1, HWQ-5, and HWQ-6 (described in

Section 3.8.6) require the implementation of an SWPPP and compliance with dewatering requirements. This would minimize potential degradation of water quality during construction of the Build Alternative. Upon implementation of Mitigation Measures HWQ-1, HWQ-5, and HWQ-6, no direct adverse effect related to water quality standards and waste discharge requirements would occur during construction.

Direct Effects – Operations

The increase in impervious surfaces is a nexus for settled pollutants to be mobilized by storm runoff and thereby increase pollutants to the tributary water body. During operation of the Build Alternative, minor amounts of metals from brake dust, oil, and grease would originate primarily from train cars but some could originate from the platforms, which could discharge these and other chemical pollutants into existing drainage systems. This is considered an adverse effect. Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8.6) would reduce effects on water quality because they include requirements to treat the runoff prior to discharge to the local storm drain system through capture and use, bioretention, and structural BMPs. Post-construction BMPs would be implemented in accordance with the applicable agency requirements to minimize potential adverse water quality effects associated with operation of the Build Alternative. Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no direct adverse effect related to water quality standards and waste discharge requirements would occur during operations.

Indirect Effects – Construction and Operations

The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. This is considered an adverse effect. Said runoff would be minimized by the implementation of construction-related and permanent water quality BMPs required by the NPDES permits. Other projects in the surrounding area would also be required to comply with the NPDES permit requirements. Constructed-related impacts within the Project footprint would be minimized with implementation of Mitigation Measures HWQ-1, HWQ-5, and HWQ-6, which would reduce the potential for off-site impacts on water quality. The increase in impervious surface would result in increased pollutant build up and wash off during rain events throughout operations. Post-construction BMPs required as part of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 would reduce potential for off-site indirect effects. In addition, the Build Alternative may result in acquisition of parcels with current manufacturing and industrial processes permitted by their respective industrial general permits (IGP). These IGPs include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system. This is considered an adverse effect. Implementation of Mitigation Measure HWQ-7 (described in Section 3.8.6) requires Metro to comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities for demolished, relocated, or new industrial-related properties impacted by the Project. This will include preparation of industrial SWPPP(s), as applicable. As such, treatment of stormwater discharge associated with the IGPs would continue. Implementation of Mitigation Measure HWQ-7 would minimize potential

adverse effects resulting from the discharge of pollutants to stormwater during operation. Upon implementation of Mitigation Measures HWQ-1 through HWQ-7, no indirect adverse effect related to water quality standards and waste discharge requirements would occur during construction or operation.

3.8.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects on floodplains, hydrology, and water quality. Metro adopted an MMRP as part of the Final EIR for the Link US Project, which included Mitigation Measures HWQ-1 through HWQ-7 and HAZ-1. Metro also adopted CEQA Addendum No. 1 with a minor technical change to Mitigation Measure HWQ-1 to correct the Risk Level. The mitigation measures below generally follow the mitigation measures adopted in the MMRP for the Link US Project but includes minor technical changes where necessary to address the updated regulatory context for applicable permits that have been adopted since certification of the Final EIR.

HWQ-1 **Prepare and Implement a SWPPP:** During construction, Metro shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (construction general permit [CGP]) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. 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. Metro shall comply with the Risk Level 2 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.

HWQ-2 **Final Water Quality BMP Selection (Caltrans ROW):** Metro shall comply with the provisions of the Caltrans MS4 Permit (Order Number 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ) that was adopted June 22, 2022, and became effective January 1, 2023, and any applicable provisions of the Caltrans SWMP for long-term BMPs. 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 (Railroad ROW):** For the portion of the Project outside Caltrans ROW and not under the jurisdiction of the City of Los Angeles, 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).

HWQ-4 **Final Water Quality BMP Selection (City of Los Angeles):** Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (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 the 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 **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.

HWQ-6 **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 (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.

HWQ-7 **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses:** Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with IGP (Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-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.

HAZ-1 **Prepare a Construction Hazardous Materials Management Plan.** See Section 3.10, Hazardous Waste and Materials for details.

3.8.7 NEPA Impact Summary

This section summarizes the effects related to floodplains, hydrology, and water quality of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

Under the No Action Alternative, no Project-related changes to existing environmental conditions would occur. Reasonably foreseeable future projects and maintenance activities in the railroad ROW would still occur. Changes related to other projects depending on the proposed project type could incrementally affect drainage patterns, soil erosion, siltation, and stormwater runoff velocities. The magnitude of any effects of the No Action Alternative would vary based on the locations of other proposed developments but drainage patterns, soil erosion, and siltation are not expected to be significantly altered due to the urbanized nature and topography of the Project study area. Maintenance activities in the railroad ROW would be subject to applicable water quality requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal and water quality requirements. Based on these considerations, no adverse effects on existing drainage patterns, runoff quantities, and water quality conditions would occur as part of the No Action Alternative.

Build Alternative

As discussed under Topic 3.8-A, the Project study area has low to moderate erosion potential due to lack of unpaved surface soils. During construction, substantial grading and excavation would occur, potentially leading to concentrated runoff and erosion on adjacent properties. Any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas. With Mitigation Measure HWQ-1, which requires implementation of an SWPPP with construction site BMPs for sediment control and soil stabilization, no adverse effects would occur during construction. Once operational, the Build Alternative would increase impervious surfaces in the non-Caltrans ROW portion by 5.3 acres and by 0.14 acre in the Caltrans ROW, respectively. This would alter existing drainage patterns and cause a decrease in infiltration, which could lead to localized flooding and an increase in the volume and velocity of stormwater runoff during a storm event if not properly managed. Increased volume and velocity of runoff can lead to downstream erosion, streambank scouring, increases in suspended particles and sediments, and increased turbidity. Upon

implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no adverse effect would occur during operations. Any new development would be required to comply with applicable building and drainage requirements and would be implemented in consideration of other systems outside the specific project location to minimize potential for drainage, erosion, and siltation impacts.

As discussed under Topic 3.8-B, excavated soil (some of which may be contaminated) would be exposed, and there would be increased potential for soil erosion during construction. If not properly managed, sediments, 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 into the Los Angeles River. Upon implementation of Mitigation Measure HWQ-1 and Mitigation Measure HAZ-1, no adverse effect would occur during construction. Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no adverse effect would occur during operations.

As discussed under Topic 3.8-C, the Project study area is not located in a 100-year or 500-year floodplain; therefore, there is minimal potential for construction activities to cause flooding within or outside of the Project footprint. Construction activities would not lead to adverse effects associated with flooding. Additionally, the Build Alternative would not affect floodplain areas or require updates to flood maps. The proposed infrastructure would be designed and constructed in accordance with standard engineering practices, so people or structures are not exposed to a higher risk of loss, injury, or death involving flooding above and beyond the existing condition. For these reasons, no adverse effects related to flooding would occur.

As discussed under Topic 3.8-D, construction activities could exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Stormwater runoff could result in short-term erosion within areas of exposed or stockpiled soils. Compaction of soils may reduce the infiltration capacity of soils and increase runoff and erosion potential causing downstream sedimentation. Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials may also temporarily expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. Contaminated groundwater may also be temporarily encountered during dewatering activities. Upon implementation of Mitigation Measures HWQ-1, HWQ-5, and HWQ-6, no direct adverse effect related to water quality standards and waste discharge requirements would occur during construction. The increase in impervious surfaces is a nexus for settled pollutants to be mobilized by storm runoff and thereby increase pollutants to the tributary water body. During operation of the Build Alternative, minor amounts of metals from brake dust, oil, and grease would originate primarily from train cars but some could originate from the platforms, which could discharge these and other chemical pollutants into existing drainage systems. Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no direct adverse effect related to water quality standards and waste discharge requirements would occur during operations. The Build Alternative also requires acquisition of parcels with current manufacturing and industrial processes permitted by their respective IGP. If these processes are not continued, industrial

stormwater may not be treated and could negatively affect the storm drain system, indirectly. Implementation of Mitigation Measure HWQ-7 would minimize potential adverse effects resulting from the discharge of pollutants to stormwater during operation. Upon implementation of Mitigation Measures HWQ-1 through HWQ-7, no indirect adverse effect related to water quality standards and waste discharge requirements would occur during construction or operation.

Table 3.8-6 provides an impact summary for the Build Alternative.

Table 3.8-6. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect	*Construction* **HWQ-1 Prepare and Implement a SWPPP**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)**	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
Topic 3.8-B: Stormwater	*Construction* Adverse Effect	*Construction* **HWQ-1 Prepare and Implement a SWPPP** **HAZ-1 Prepare a Construction Hazardous Materials Management Plan**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)**	*Operations* No Adverse Effect

Table 3.8-6. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.8-C: Flooding	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect	*Construction* **HWQ-1 Prepare and Implement a SWPPP** **HWQ-5 Comply with Local Dewatering Requirements** **HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)**	*Operations* No Adverse Effect

Table 3.8-6. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect Adverse Effect	*Indirect* **HWQ-1 Prepare and Implement a SWPPP** **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)** **HWQ-5 Comply with Local Dewatering Requirements** **HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites** **HWQ-7 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses**	*Indirect* No Adverse Effect

3.9 Geology, Soils, and Seismicity

3.9.1 Introduction

This section provides an evaluation of potential effects related to existing geology, soils, and seismic conditions from the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Preliminary Geotechnical Report* (Appendix K of this EIS), and data collected from recent geotechnical investigations, and other published sources.

3.9.2 Regulatory Framework

Table 3.9-1 identifies and summarizes applicable laws, regulations, and plans relevant to geology, soils, and seismicity.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(18)*, 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Procedures require the Draft and Final EIS to include an assessment to consider in the analysis public safety and the level of protection afforded residents of the affected environment from construction period and long-term operations.
Clean Water Act (33 United States Code §1341) (1972)	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: • Section 102 states that parties involved prepare or develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters. • Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines. • 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.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
American Railway Engineering and Maintenance-of-Way Association's Manual for Railway Engineering (2018)	Although these guidelines cover many of the same general topics as the American Association of State Highway and Transportation Officials, they are more focused on best practices for rail systems. The manual includes principles, data, specifications, plans, and economics pertaining to the engineering, design, and construction of railways.
American Society for Testing and Materials International	ASTM International has developed standards and guidelines for all types of material testing, from soil classifications to pile load testing or compaction testing through to concrete strength testing. The ASTM standards also include minimum performance requirements for materials. Most of the guidelines and standards use ASTM or a corresponding series of standards from American Association of State Highway and Transportation Officials to assure that required/intended quality is achieved in the constructed project.
State	
Alquist-Priolo Special Studies Zone Act (California Public Resources Code Sections 2621-2630) (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.
Seismic Hazards Mapping Act (1990)	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.
California Building Code (2022)	The State of California provides minimum standards for building design through the CBC (CCR, Title 24). The 2022 California codes became effective January 1, 2023. 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.
National Pollutant Discharge Elimination System Insurance General Permit (2014)	The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (IGP), as amended by Order no. 2015-0122-DWQ 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 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
National Pollutant Discharge Elimination System Construction General Permit (2022)	The CGP (Order No. 2009-0009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Orders No. 2010-0014-DWQ and 2012-0006-DWQ, which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. 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 an SWPPP; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.
Local	
City Building Code for City of Los Angeles	The City of Los Angeles has adopted the Los Angeles Building Code, which adopts by reference portions of the most current edition of the City Building Code. Chapters 1 through 96 of the Los Angeles Building Code as published by the International Code Council are Divisions 1 through 96, respectively, of Article 1, Chapter IX, of the Los Angeles Municipal Code. For uniformity with the City Building Code, only the division and section numbers are stated in the published code. Section 106 of the Los Angeles Building Code addresses grading permits.
City of Los Angeles General Plan Safety Element (2021)	The City's General Plan Safety Element goals, objectives, policies, and programs are broadly stated to reflect the comprehensive scope of citywide emergency planning and disaster response. The goals, objectives, and policies are not specific to a particular disaster but aim to address the City's approach to any number of disaster events, including but not limited to, adverse weather, climate change and sea level rise, dam failure, drought, earthquake, flood, landslide, tsunami, and wildland fire.
City of Los Angeles Alameda District Specific Plan (1996)	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.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
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 B BMPs intended to reduce erosion.

Notes:
ASTM=American Society for Testing and Materials; BMP=Best Management Practice; CBC=California Building Code; CCR=California Code of Regulations; CWA=Clean Water Act; EIS=Environmental Impact Statement; EO=Executive Order; FR=Federal Register; PRC=Public Resources Code; U.S.=United States; U.S. EPA=United States Environmental Protection Agency

3.9.3 Methods for Evaluating Environmental Effects

Topic Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would be affected by:

- Seismic ground shaking or seismic-related ground failure, including liquefaction.
- Soil erosion.
- Subsidence, lateral spreading, and corrosive soils.
- Expansive soils.

Geographic Area Considered

The Project study area is used to characterize the affected environment and the Project footprint is the geographic area considered to determine potential effects related to geology, soils, and seismicity.

Methodology

Relevant literature and maps were reviewed, including published geologic maps, planning documents and hazard maps, as-built logs of test borings, and geotechnical and environmental reports prepared for nearby projects to identify existing geologic and soil conditions that may be affected by the Build Alternative. Based on results of the literature review and preliminary geotechnical investigation, site conditions and geologic and geotechnical conditions were assessed for potential adverse conditions that may pose safety risks during construction or operation.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Project-related effects would be considered adverse if the Build Alternative exacerbates existing hazards related to surface rupture, landslides, seismic ground shaking, seismic ground failure, soil erosion, corrosive soils, and expansive soils, resulting in a substantial risk or loss of life, injury or death and damage to property that cannot be mitigated.

Based on the site conditions, appropriate mitigation measures are identified that would provide for safe and cost-effective construction practices, as well as structurally sound facilities throughout operation.

3.9.4 Affected Environment

Regional Geology

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 consist 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 (Gastil and Krummenacher 1981; Schoellhamer et al. 1981).

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 295 to 274 AMSL.

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 (California Geologic Survey [CGS] 2012). Miocene Puente marine sedimentary formations are present beneath the alluvium layers. 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; 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.

The fill and younger alluvium deposits are underlain by the Puente Formation. In general, bedrock was encountered at depths ranging from about 55 feet bgs, to the maximum depth explored (110 feet bgs) (corresponding to elevations ranging from about 184 to 238 feet NAVD 88) in Segment 2 of the Project study area. In Segment 3 of the Project study area along 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 the Project study area during previous geotechnical investigations. Occasionally, boulders were encountered at shallower depths during construction of LAUS and the Metro Red and Purple Line station.

Faulting

There are no known active or potentially active faults mapped within the Project study area, and the Project study area is not located within a currently designated Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Special Study Zone is located approximately 5.5 miles north from the Project study area (California Division of Mines and Geology 1977). However, several buried thrust faults, commonly referred to as blind thrust faults, are located within the Project study area. These faults are the Upper Elysian Park Thrust Fault and the Los Angeles segment of the Puente Hills Thrust Fault system.

Upper Elysian Park Thrust Fault

The Upper Elysian Park Thrust Fault is a southward-verging anticline approximately 11 miles long with a curved, southward-convex axis, lying between the Hollywood Fault on the northwest and the East Montebello Fault on the east, near the City of San Gabriel. Uplift of the structure has produced the Elysian, Repetto, and Monterey Park Hills. Deformed late Quaternary deposits and related structures indicate a late Quaternary slip rate of this fault on the order of approximately 1.3±0.4 millimeter per year (Oskin et al. 2000). Earthquake recurrence intervals have been estimated to be in the range of 340 to 1,000 years (Shaw and Suppe 1996). Although the Upper Elysian Park Thrust Fault might generate strong ground motion in the Project study area, it is not considered capable of generating surface rupture (Dolan et al. 2001).

Puente Hills Thrust Fault

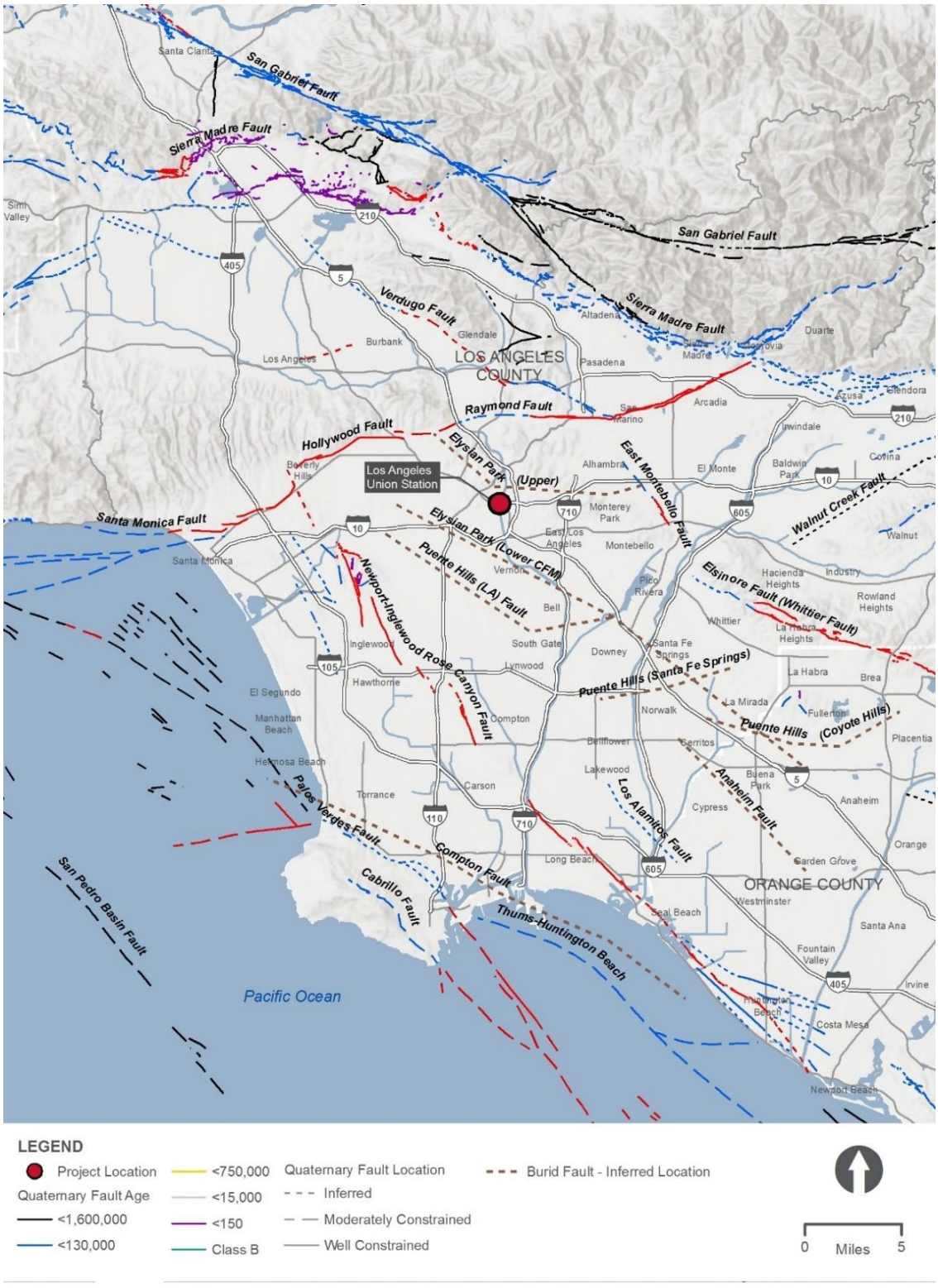
The Puente Hills Fault, also known as the Puente Hills Thrust Fault, extends for more than 25 miles in the northern Los Angeles Basin from Downtown Los Angeles east to Brea in northern Orange County. The Puente Hills Fault consists of at least three, north-dipping distinct geometric segments, designated as the Los Angeles, Santa Fe Springs, and Coyote Hills segments from west to east, respectively (Shaw et al. 2002). Based on projections from available oil field data, the Santa Fe Springs and Coyote Hills segments are located at a depth of about 5 miles bgs. The

slip rate of this fault is on the order of approximately 0.2 to 1.0 millimeter per year (Shaw et al. 2002). The last major earthquake on this fault occurred near the northwestern border of Puente Hills on October 1, 1987 (1987 Whittier Narrows Earthquake) with a magnitude of 5.9.

Based on a review of the California Earthquake Hazards Zone Application (EQ Zapp) available online by California Geological Survey (CGS [CGS 2023]) and the United States Geological Survey (USGS) Quaternary Fault ArcGIS Online Database (USGS 2023a), the Project study area is not underlain by known active or potentially active faults, nor does it lie within an Alquist-Priolo Earthquake Fault Zone. A regional fault map is presented as Figure 3.9-1.

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Figure 3.9-1. Project Location in Context with Regional Active Faults



Source: USGS 2020

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The principal seismic hazard that could affect the Project study area is ground shaking resulting from an earthquake occurring along one of several major active or potentially active faults in the vicinity of the Project study area. Table 3.9-2 provides relevant fault parameters for the major faults (sorted based on distance) located near the Project study area. The data were developed by USGS Online Hazard tool (USGS 2023b) and USGS Quaternary Fault ArcGIS Online Database (USGS 2023a).

Table 3.9-2. Nearby Faults

Fault Name	Distance from the Project Study Area (miles)	Maximum Moment Magnitude (Mw)
Elysian Park (Upper)	3.0	6.7
Compton	9.2	7.4
Puente Hills	3.7	7.1
Raymond	5.0	7.1
Newport-Inglewood alt 1	8.5	6.9

Source: USGS 2023a and 2023b
Note:
[a] Faults included are based on the fault hazard contributions provided by USGS Deaggregation Tool (USGS 2023b) and include faults with a hazard contribution greater than 1 percent of the total seismic hazard.
Mw=moment magnitude

Seismicity

A number of major historical earthquakes have occurred in the vicinity of the Project study area. Based on the review of the earthquake catalog by USGS, nine earthquake events with magnitudes equal to or greater than 5.5 have occurred within a radius of 49.7 miles of the Project study area between 1900 and 2020 (USGS 2020). The location of the earthquake, year of occurrence, earthquake magnitude, and depth of epicenter are summarized in Table 3.9-3.

Table 3.9-3. Historic Nearby Major Earthquakes

Earthquake Location	Date of Earthquake	Potential Magnitude (Mw)	Depth (miles)
Simi Valley, California	1994	5.6	5.7
Granada Hills, California	1994	5.9	3.3
Northridge, California	1994	6.7	11.3
Sierra Madre, California	1991	5.8	5.0
Claremont, California	1990	5.5	2.1

Table 3.9-3. Historic Nearby Major Earthquakes

Earthquake Location	Date of Earthquake	Potential Magnitude (Mw)	Depth (miles)
Rosemead, California	1987	5.9	5.5
Agua Dulce, California	1971	5.8	3.7
Agua Dulce, California	1971	6.6	5.5
Long Beach, California	1933	6.4	3.7

Source: USGS 2020
Notes:
Mw=moment magnitude

Geologic and Geotechnical Hazards

Potential geologic hazards within the region include surface fault rupture, seismic ground shaking, liquefaction and seismically induced settlement, lateral spreading, landslides, subsidence, collapsible and expansive soils, soil erosion and loss of substantial topsoil, and corrosive soils. These potential geologic hazards, as expressed locally within the Project study area, are described further below.

Surface Fault 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 Alquist Priolo Special Study Zone is located approximately 5.5 miles north from the Project study area (California Division of Mines and Geology 1977). Based on these circumstances, the likelihood of surface fault rupture occurring 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 or saturation zone) and liquefaction-induced settlement (below groundwater or saturation zone). This settlement occurs primarily within loose to moderately dense sandy soils due to reduction in volume during, and shortly after, an earthquake event.

Based on the review of the Seismic Hazard Zones map for the *Los Angeles, California* 7.5-Minute Quadrangle (CGS 1999), the Project study area is located within an area designated as potentially liquefiable and there is evidence of thin interbedded loose materials within the upper 30 feet of the Project study area. Preliminary liquefaction evaluation indicates that the soils within Segment 1: Throat Segment and Segment 2: Concourse Segment of the Project study area are susceptible to liquefaction. However, the estimated liquefaction settlements are relatively minor and isolated; therefore, the estimated liquefaction settlements are not considered to have a major project impact. The liquefaction potential for the soils within Segment 3: Run-Through Segment is not a major design concern based on the available studies performed within this segment (HDR 2017, EMI 2018). Based on the available geotechnical data, the potential for liquefaction and seismically induced settlement within the Project study area is considered relatively low (CGS 1999).

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 (Rauch 1997).

The Los Angeles River is located east of the Project study area and consists of a concrete-lined channel. The proposed infrastructure would be located north and south of US-101, along the Los Angeles River. Due to the anticipated low liquefaction potential (EMI 2018) within this portion of the Project study area, the potential for lateral spreading is low.

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 affecting the Project study area is negligible.

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, tunneling, or placing large fills over compressible earth materials.

According to the USGS (*Link US Preliminary Geotechnical Report,* Appendix K of this EIS), the Project study area is located outside of any delineated zones of subsidence caused by 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 the LAUS is considered low (Caltrans and FRA 2005).

Collapsible Soils

Collapsible soil is generally defined as soil that will undergo a sudden decrease in volume and lose its internal support under applied loads when water is introduced. Typical collapsible soils are low in plasticity and have relatively low moisture contents and densities. Based on available historical boring logs, it is not anticipated that collapsible soils will be encountered within the Project study area, and, as such, hydrocollapse is not anticipated.

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 data of the top 5 feet shown in the historical boring logs, the likelihood of encountering expansive soils is considered low.

Corrosive Soils

Existing available data indicate soils located within the Project study area exhibited sulfate concentrations ranging from 152 to 475 parts per million (ppm) and chloride concentrations ranging from 3,000 to 4,600 ppm (Converse Consultants et al. 1981). Caltrans specifications define a corrosive soil as a material in which any of the following conditions exist: soluble sulfate content greater than 1,500 ppm; a chloride content greater than 500 ppm; or a pH of 5.5 or less.

A geotechnical report prepared for the Metro Red Line Tunnel (Metro 1986) described severe corrosion to groundwater monitoring instrumentation and pump equipment exposed to the groundwater under LAUS. During this investigation, soils within the LAUS area were treated with hydrogen peroxide to reduce hydrogen sulfide content in the groundwater, which was successful (Metro 1986). Based on guidelines established by Caltrans 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 Consequences

TOPIC 3.9-A	Seismic ground shaking or seismic-related ground failure, including liquefaction

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions or upgrades to existing facilities to meet current building code requirements. As described in Chapter 1.0, Purpose and Need, the existing LAUS facility is nonconforming with current applicable CBC requirements. Under the No Action Alternative, LAUS would continue to be more susceptible to seismic ground shaking or seismic-related ground failure.

Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other proposed projects could be incrementally affected from seismic activity, depending on the proposed project type. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which seismic activity could occur in the Project study area; however, standard construction safety protocols, in accordance with Occupational Safety and Health Administration (OSHA) requirements (e.g. Construction Safety Orders, Articles 1 through 37), would be implemented for proposed projects and maintenance activities in the railroad ROW. Maintenance activities would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable. Outside of not upgrading existing facilities to meet current code requirements, no direct or indirect effects during construction or operation would occur.

Build Alternative

Direct Effects – Construction

During construction of the Build Alternative, the Project study area would be subject to the same level of ground motion and associated seismic hazards in the event of an earthquake as under existing conditions; however, standard construction safety protocols, in accordance with OSHA requirements (e.g. Construction Safety Orders, Articles 1 through 37), would be implemented during construction to prevent risk of loss, injury, or death if seismic activity is encountered during construction. Construction of the Build Alternative would not increase the probability of seismic ground shaking occurring. Therefore, construction of the Build Alternative would not exacerbate existing hazards related to seismic ground shaking or seismic-related ground failure, including liquefaction, when compared to existing conditions. No direct adverse effect would occur.

Direct Effects – Operations

Once operational, the probability that infrastructure associated with the Build Alternative would be subject to strong seismic shaking during the lifespan of the Project is considered high due to the

proximity of known active faults in the region and the seismic nature of Southern California. However, no habitable structures are proposed, and infrastructure would be designed in accordance with appropriate industry standards, including established engineering and construction practices as summarized in Table 3.9-1 (e.g., American Railway Engineering and Maintenance-of-Way Association (AREMA)'s 2016 Manual for Railway Engineering and ASTM International standards and guidelines). New infrastructure would be constructed to be seismically sound and expected to have an improved structural response to an earthquake when compared with existing conditions because new infrastructure would be designed per current building code requirements for seismic safety. As such, implementation of the Build Alternative would not exacerbate existing hazards posed by seismic ground shaking or seismic-related ground failure including liquification. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction activities associated with the Build Alternative would not cause a regional increase in groundwater elevations or accelerate the potential for liquefaction or other types of seismically induced ground failure beyond existing conditions. The potential for liquefaction to occur within the Project study is considered low. Therefore, it is unlikely that implementation of the Build Alternative would cause liquefaction outside of the Project study area and affect any bearing capacity failures or cause displacements outside of the Project footprint. The Build Alternative would also adhere to appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. As such, with adherence to the current CBC, no indirect adverse effects would occur.

TOPIC 3.9-B	Soil erosion

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. There would be no construction activities that would require excavation and grading activities that would result in removal of paved surfaces or vegetation. Therefore, no exposed surfaces would be subject to accelerated soil erosion. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other proposed projects could be incrementally affected by soil erosion, depending on the proposed project type and level of disturbance. The context and intensity of effects would vary based on the location of other proposed developments. However, the majority of the Project study area consists of disturbed areas with existing rail tracks, developed properties, and the LAUS rail yard. The Project study area is located on disturbed substrate limiting the possibility of soil erosion in the Project study area for proposed projects and maintenance activities in the railroad ROW. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews by the jurisdiction responsible for issue the appropriate permit. Therefore, no direct or indirect

effects related to soil erosion during construction or operation would occur as a result of the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would require excavation and grading activities that would result in removal of paved surfaces and minimal vegetation. Topsoil is typically the top 2 to 3 inches of soil, primarily consisting of dark decomposed organic material. The majority of the Project study area consists of disturbed areas with existing rail tracks, developed properties, and the LAUS rail yard. The Project study area is located on disturbed substrate, including fill. Therefore, construction of the Build Alternative is not anticipated to result in substantial soil erosion or the loss of topsoil due to construction within the Project study area. Furthermore, as described in Section 3.8, Floodplains, Hydrology, and Water Quality, the erosion potential under natural conditions is low due to the lack of unpaved surface soils within the Project study area. However, loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode. This is considered an adverse effect. Implementation of Mitigation Measures HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality), which requires preparation of a SWPPP by a Qualified SWPPP Developer, would minimize effects of the Build Alternative on soil erosion. One of the main objectives of the SWPPP is to implement construction site BMPs designated for soil stabilization and sediment control, including, but not limited to, temporary measures such as stabilized construction entrances/exits, a move-in/move-out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures are required as part of the SWPPP to actively control sediments and stormwater discharges from construction of the Build Alternative. Upon implementation of Mitigation Measure HWQ-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

Once the Build Alternative is constructed, there would not be a substantial amount of exposed surface that could be subjected to accelerated soil erosion during operation (see Section 3.8, Floodplains, Hydrology, and Water Quality for details). 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. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could

erode and cause indirect effects on air and water quality. The construction-related effects for water quality are analyzed in Section 3.8, Floodplains, Hydrology, and Water Quality under Topic 3.8-B and Section 3.10, Hazardous Waste and Materials under Topic 3.10-B. As described in Section 3.10, Hazardous Waste and Materials of this EIS, excavated soils would be contaminated, and the construction contractor would be required to follow recommendations of the *Link US Phase I ESA* prepared in 2016, or forthcoming Phase II ESA (Mitigation Measure HAZ-2 described in Section 3.10.6) for proper disposal of the contaminated soils. Furthermore, Mitigation Measure HWQ-1 (described in Section 3.8.6) requires compliance with the NPDES Program via preparation and implementation of an SWPPP. The SWPPP requires all new development to comply with county and municipal low-impact development standards as well as stormwater pollution control ordinances and implement BMPs as part of an SWPPP to minimize potential for indirect effects during construction.

Construction-related effects for air quality are analyzed in Section 3.5, Air Quality and Global Climate Change related to fugitive dust under Topic 3.5-A. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions, implementation of Mitigation Measure AQ-1 (described in Section 3.5.6) would reduce daily fugitive dust emissions and associated air quality impacts.

Upon implementation of Mitigation Measures AQ-1, HWQ-1, and HAZ-2, no adverse effect would occur.

TOPIC 3.9-C	Subsidence, lateral spreading, and corrosive soils

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Construction activities would not occur. As described in Chapter 1.0, Purpose and Need, the existing LAUS facility is nonconforming with current applicable CBC requirements. Therefore, because LAUS is not currently built in accordance with the most stringent building code standards , the risk to public safety would increase overtime. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes in groundwater levels related to the implementation of other proposed projects could affect the subsidence and lateral spreading in the area depending on the proposed project type. Corrosion potential at the project area of existing soils may be affected due to earthwork activities related to other proposed projects. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which subsidence, lateral spreading, and corrosive soils could occur in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews by the jurisdiction responsible for issue the appropriate permit. Therefore, no direct or indirect effects during construction or operation would occur.

Build Alternative

Direct Effects – Construction

Based on the preliminary geotechnical evaluation for the Build Alternative, the potential for lateral spreading during construction is considered low and the Project footprint is not located within an area prone to landslides. Hydrocollapse is not anticipated during construction activities. However, dewatering may be required for earthwork operation during construction and subsidence may occur due to groundwater extraction. In addition, due to the presence of compressible layers within the upper 30 feet of soil where infrastructure improvements are proposed in Segment 2: Concourse Segment of the Project study area, settlement, both long-term and immediate, is anticipated to occur. This is considered an adverse effect. Mitigation Measure GEO-1 (described in Section 3.9.6) would require preparation of a final geotechnical report that would address remediation of potential effects relative to subsidence during dewatering and potentially compressible soils during construction.

Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of exposure of corrosive soils during construction. This is considered an adverse effect. Mitigation Measure GEO-1 (described in Section 3.9.6) would require preparation of a final geotechnical report that would include provisions for remediation of potential adverse effects resulting from corrosive soils. Measures could include requiring the contractor to replace upper portions of soils that exhibit high-corrosivity characteristics with soils that do not exhibit these characteristics, restricting use of corrosive soils as fill material, or requiring pre-construction characterization studies to account for soil properties prior to construction activities. Upon implementation of Mitigation Measure GEO-1, no direct adverse effect would occur.

Direct Effects – Operations

Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. This is considered an adverse effect if the corrosive soils are not accounted for during the design process. The proposed infrastructure would be required to conform to guidelines specified in relevant transportation and building agencies and codes, including those summarized in Table 3.9-1 (e.g., AREMA's 2016 Manual for Railway Engineering and ASTM International standards and guidelines) and those identified under Mitigation Measure GEO-1, which require use of coated or corrosion-resistant steel or concrete materials. Implementation of Mitigation Measure GEO-1 (described in Section 3.9.6) would minimize potential for structural failure resulting from corrosive soils. The final geotechnical report required by Mitigation Measures GEO-1 would address remediation of potential effects resulting from corrosive soils. Upon implementation of Mitigation Measure GEO-1, no adverse direct effects would occur.

Indirect Effects – Construction and Operations

As previously described above, there is a moderate to severe corrosion potential of the soils in the Project study area. Corrosion can weaken structures built on corrosive soils, potentially causing

damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. Therefore, over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines. In addition to compliance to all relevant transportation and building agencies and codes, implementation of Mitigation Measure GEO-1 (described in Section 3.9.6) requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the project. The final geotechnical report will include site-specific recommendations for the foundations of proposed infrastructure to mitigate the risk associated with conditions related to compressible and corrosive soils. Therefore, with the implementation of Mitigation Measure GEO-1, no indirect adverse effect would occur during construction or operation under the Build Alternative.

TOPIC 3.9-D	Expansive soils

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Construction activities would not occur. As described in Chapter 1.0, Purpose and Need, the existing LAUS facility is nonconforming with current applicable CBC requirements. Therefore, because LAUS is not currently built in accordance with the most stringent building code standards to minimize effects related to expansive soils, the risk to public safety would increase overtime. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other proposed projects could be incrementally affected from expansive soils, depending on the proposed project type. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which expansive soils could occur in the Project study area. Maintenance activities in the railroad ROW or within vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable. Therefore, no direct or indirect effects during construction or operation would occur.

Build Alternative

Direct Effects – Construction

As described in Section 3.9.4, the expansion potential is considered to be low for the Build Alternative. No direct adverse effects would occur during construction of the Build Alternative.

Direct Effects – Operations

As indicated above, the soils within the Project study area are considered to have a low expansion potential. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

No indirect effects related to expansive soil would occur with implementation of the Build Alternative.

3.9.6 Mitigation Measures

Implementation of the following mitigation measure would avoid or minimize potential adverse effects on geology, soils, and seismicity.

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; and
- Grading practices.

The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. 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 Project-related infrastructure in accordance with Metro Rail Design Criteria, Manual for Railway Engineering, California High-Speed Train Project Design Criteria Manual, 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. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report upon approval by Metro.

HWQ-1 **Prepare and Implement a SWPPP.** See Section 3.8, Floodplains, Hydrology, and Water Quality for details.

HAZ-2 **Prepare a Project-wide Phase II ESA (based on completed Phase I ESA).** See Section 3.10, Hazardous Waste and Materials for details.

AQ-1 **Fugitive Dust Control.** See Section 3.5, Air Quality and Global Climate Change for details.

3.9.7 NEPA Impact Summary

This section summarizes the effects related to existing geology, soils, and seismic conditions for the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

Under the No Action Alternative, no Project-related changes to existing environmental conditions would occur. Reasonably foreseeable future projects and maintenance activities in the railroad ROW would still occur. Changes related to other proposed projects could be incrementally affected by seismic activity, soil erosion, subsidence, lateral spreading, corrosive soils, and expansive soils. The context and intensity of effects would vary based on the locations of other proposed developments, but effects would be localized where infill development occurs. Maintenance activities would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable. Therefore, no adverse direct or indirect effects would occur.

Build Alternative

As discussed under Topic 3.9-A, construction of the Build Alternative would not increase the risk of seismic hazards or ground failure. Standard safety protocols would be followed during construction, and the new infrastructure would be designed to meet current building code requirements for seismic safety. The probability of strong seismic shaking during operation of the Build Alternative is high, but no habitable structures are proposed, and infrastructure would be designed to have an improved structural response to earthquakes. Construction activities would not increase groundwater elevations or accelerate the potential for liquefaction. The potential for liquefaction to occur within the Project study is considered low. Therefore, it is unlikely that implementation of the Build Alternative would cause liquefaction outside of the Project study area and affect any bearing capacity failures or cause displacements outside of the Project footprint. As such, no adverse effects associated with ground failure, including liquefaction would occur.

As discussed under Topic 3.9-B, if exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode. This is considered an adverse effect. With implementation of Mitigation Measures HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality), no direct adverse effect would occur during construction. During operations, stabilization measures such as ballast placement would prevent erosion on exposed surfaces. As such, no adverse effects associated with soil erosion would occur. If exposed soils are not protected from wind or water erosion, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality. With implementation of Mitigation Measure HAZ-2 (described in Section 3.10, Hazardous Waste and Materials) and Mitigation Measure AQ-1 (described in Section 3.5, Air Quality and Global Climate Change), no adverse indirect effects on air and water quality would occur.

As discussed under Topic 3.9-C, the preliminary geotechnical evaluation indicates a low potential for lateral spreading and ground subsidence during construction. However, settlement is anticipated in Segment 2 of the Project study area due to compressible layers. In addition, the presence of corrosive soils poses a risk to infrastructure and could cause gradual structural failure if not accounted for during final design. Settlement and corrosive soils are both considered adverse effects given the potential for damage to foundations and buried pipelines. Mitigation Measure GEO-1 would require preparation of a final geotechnical report to address these effects. Site-specific design recommendations in the final geotechnical report, including recommendations related to foundation design and material use, would avoid or minimize these effects. With implementation of GEO-1, no adverse direct effects related to corrosive soils would occur.

As discussed under Topic 3.9-D, the expansion potential is considered to be low for the Build Alternative. Therefore, no adverse direct effects would occur during construction or operation of the Build Alternative.

Table 3.9-4 summarizes Build Alternative NEPA impacts.

Table 3.9-4. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.9-B: Soil erosion	*Construction* Adverse Effect	*Construction* **HWQ-1 Prepare and Implement a SWPPP**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect

Table 3.9-4. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect Adverse Effect	*Indirect* **AQ-1 Fugitive Dust Control** **HWQ-1 Prepare and Implement a SWPPP** **HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)**	*Indirect* No Adverse Effect
Topic 3.9-C: Subsidence, lateral spreading, and corrosive soils	*Construction* Adverse Effect	*Construction* **GEO-1 Prepare Final Geotechnical Report**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **GEO-1 Prepare Final Geotechnical Report**	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **GEO-1 Prepare Final Geotechnical Report**	*Indirect* No Adverse Effect
Topic 3.9-D: Expansive soils	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect

3.10 Hazardous Waste and Materials

3.10.1 Introduction

This section provides an evaluation of the potential effects related to hazardous waste and materials that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Hazardous Waste Impacts Technical Memorandum* (Appendix L of this EIS) in combination with other published sources.

3.10.2 Regulatory Framework

Table 3.10-1 identifies and summarizes applicable laws, regulations, and plans relative to hazardous waste and materials. For more details on applicable laws refer the *Link US Hazardous Waste Impacts Technical Memorandum* (Appendix L of this EIS).

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(18)*, 64 *Federal Register* 28545-28556 (1999)[1]	FRA's Procedures requires the Draft and Final EIS to assess the transport and use of any hazardous materials and identify the level of protection afforded residents of the affected environment from construction and long-term operations.
Comprehensive Environmental Response, Compensation, and Liability Act (42 United States Code Section 9601 et seq.) (1980)	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 Transportation Act (49 USC 5101 et seq. and 49 Code of Federal Regulations 101, 106, 107, and 171–180) (1975) Hazardous Materials Transportation Uniform Safety Act (Public Law 101-615) (1990)	U.S. DOT, 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

[1] While this EIS was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
	offering, accepting, or transporting hazardous materials on both safety and security matters.
United States Department of Transportation Emergency Response Guidebook (2012)	This guidebook documents procedures and considerations for responding to a hazardous materials transportation incident. It provides a reference for hazardous materials placards and reference numbers used to denote the presence of a hazardous material in a truck, railcar, or pipeline. Separate guidance documents are included to provide unique procedures for different types of hazards.
National Oil and Hazardous Substances Pollution Contingency Plan (1986)	The National Oil and Hazardous Substances Pollution Contingency Plan is the federal plan for responding to oil spills and hazardous substances releases. The National Oil and Hazardous Substances Pollution Contingency Plan 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. U.S. EPA has pending revisions to the National Oil and Hazardous Substances Pollution Contingency Plan in order to align with the National Response Framework. These revisions have not been approved to date.
United States Environmental Protection Agency Oil Pollution and Prevention Regulation (1973)	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 (29 United States Code § 651 et seq.) (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 build alternative 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.
Resource Conservation and Recovery Act (42 United States Code Section 6901 et seq.) and Environmental Protection Act (40 Code of Federal Regulations Parts 239-282) (1965)	Under RCRA, 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.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
	In California, U.S. EPA has delegated RCRA enforcement to Cal/EPA, DTSC.
Executive Order 12856 (58 *Federal Register* 41981) - Right-to-Know Laws and Pollution Prevention Requirements (1993)	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.
Emergency Planning and Community Right to Know Act (42 United States Code 11001 et seq. and 40 Code of Federal Regulation 350.1 et seq.) (1996)	The Emergency Planning and Community Right-to-Know Act of 1986 was authorized by Title III of the Superfund Amendments and Reauthorization Act to help communities plan for chemical emergencies. It requires industry to report on the storage, use, and releases of certain chemicals to federal, state, tribal, territorial, and/or local governments. It also requires these reports to be used to prepare for and protect their communities from potential risks.
Federal Compliance with Pollution Control (Executive Order 12088) [October 13, 1978] and Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code 136 and 40 Code of Federal Regulations 152–171) [June 25, 1947]	The FIFRA is the federal statute that governs the registration, distribution, sale, and use of pesticides in the United States. With certain exceptions, a pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, or desiccant, or any nitrogen stabilizer.
Superfund Amendments and Reauthorization Act (42 United States Code § 9601 et seq.) (1986)	CERCLA enlarged and reauthorized the Superfund Amendments and Reauthorization Act of 1986 (SARA, PL 99-499). 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.
Superfund Enterprise Management System Archive (2015)	The SEMS-ARCHIVE tracks sites that have no further interest under the Superfund program. The list was formerly known as the Comprehensive Environmental Response, Compensation, and Liability Information System –NFRAP, renamed to SEMS-ARCHIVE by 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.
Toxic Substances Control Act (15 United States Code Section 2601 et seq.) (1976)	The TSCA of 1976 provides U.S. EPA with authority to require reporting, record-keeping, and testing requirements, and

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
	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.
Clean Water Act (33 United States Code § 1344) – National Pollutant Discharge Elimination System (Section 402[p]) (1970)	The CWA sets regulations of discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater. SWRCB implements and enforces the CWA, as well as additional state regulations. Plans developed for this project, such as BMPs and Contaminated Materials Management Plans, will provide procedures that comply with the CWA and SWRCB regulations for protecting water quality.
Clean Air Act (1970)	The CAA regulated air emissions from stationary and mobile sources. This law authorized U.S. EPA to establish NAAQS to protect public health and public welfare and to regulate emissions of hazardous air pollutants.
Safe Drinking Water Act (1976)	The SDWA sets the standards for drinking water quality and monitors states, local authorities, and water suppliers who enforce those standards.
State	
Hazardous Materials Release Response Plans and Inventory Act (Business Plan Act) (2016)	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 an 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.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
California Environmental Protection Agency	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 • ACM 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 onsite 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.
California Division of Occupational Safety and Health Administration (California Code of Regulations Title 8)	Cal/OSHA sets and enforces regulations related to safety in the workplace. Plans that will be developed during the course of this project, HASPs in particular, will comply with Cal/OSHA regulations.
California Code of Regulations Title 22 (22 California Code of Regulations Division 4.5)	Title 22 of the CCR sets regulations related to the identification and proper handling and disposal of hazardous wastes. The handling of hazardous waste is subject to compliance with the regulations set forth in Title 22, as they relate to the storage, handling, identification, transportation, and disposal of hazardous wastes.
California Public Resources Code Section 21151.4	This code requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of the proposed infrastructure about potential effects on the school if the proposed infrastructure might reasonably be anticipated to emit hazardous air emissions or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
Local	
City of Los Angeles General Plan Safety Element (2021)	The City's General Plan Safety Element goals, objectives, policies, and programs are broadly stated to reflect the comprehensive scope of citywide emergency planning and disaster response. The goals, objectives, and policies are not specific to a particular disaster but aim to address the City's approach to any number of disaster events, including but not limited to, adverse weather, climate change and sea level rise, dam failure, drought, earthquake, flood, landslide, tsunami, and wildland fire.
City of Los Angeles General Plan, Conservation Element (2001)	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.
City of Los Angeles Hazards Mitigation Plan (2018)	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., 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 safeguarding 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

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials	
Law, Regulation, or Plan	**Description**
	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:
ACM=Asbestos-Containing Material; BMP=Best Management Practice; CAA=Clean Air Act; Cal/EPA=California Environmental Protection Agency; Cal/OSHA=California Division of Occupational Safety and Health; Administration; 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; FIFRA=Federal Insecticide, Fungicide, and Rodenticide Act; FRA=Federal Railroad Administration; HMBP=Hazardous Materials Business Plan; LAFD=City of Los Angeles Fire Department; LBP=lead-based paint; MP=mile post; NAAQS=National Ambient Air Quality Standards; 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; RCRA=Resource Conservation and Recovery Act; SARA=Superfund Amendments and Reauthorization Act; SDWA=Safe Drinking Water Act; SEMS-ARCHIVE=Superfund Enterprise Management System Archive; SPCC=Spill Prevention, Control, and Countermeasures; SWRCB=State Water Resources Control Board; TSCA=Toxic Substances Control Act; USC=United States Code; USDOT=U.S. Department of Transportation; U.S.=United States; U.S. EPA=U.S. Environmental Protection Agency; UST=underground storage tank

3.10.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Transport, use, or disposal of hazardous materials.
- Risk of hazardous materials release into the environment.
- Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school.
- Hazardous materials sites.

Geographic Area Considered

The Project study area plus a 0.5-mile buffer from the Project study area is the search radius used to characterize the affected environment and the Project footprint is the geographic area considered to determine potential effects resulting from moderate-risk or high-risk REC sites. A 0.25-mile buffer from the Project footprint was also considered to determine potential impacts on schools.

Methodology

Research and Site Reconnaissance

The analysis contained in this section is based on the *Link US Hazardous Waste Impacts Technical Memorandum* (Appendix L of this EIS). The preparation of the *Link US Hazardous Waste Impacts Technical Memorandum* included an environmental records review and agency record search; and historical research, which included a review of historical aerial photographs and a city directory; a site reconnaissance of the Project study area and surrounding properties; and a review of regulatory agency records. To identify the existing sources of hazardous materials, a database search for the Project study area was completed that included federal, state, local, and tribal databases as defined by ASTM Practice E1527-13, in addition to an EDR proprietary databases report. The boundary of the Project study area was used to define the search parameters for the EDR report using a 0.5-mile buffer area. This buffer is applied to capture areas adjacent to the Project footprint that should be considered for hazardous waste and materials.

Effects associated with hazardous waste and materials that could result from construction and operation of the Build Alternative were evaluated qualitatively based on site conditions, proximity of the Project footprint to documented recognized environmental conditions (REC), and expected construction practices.

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). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria listed in CCR Title 22. Cleanup requirements are determined on a case-by-case basis by the agency with lead jurisdiction over the proposed infrastructure. Under California Code of Regulations (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 Hazardous Waste Impacts Technical Memorandum* included an evaluation of the Project study area for indications of RECs. The evaluations were conducted in accordance with the scope and limitations of the ASTM International (ASTM) E1527-13 Standard. The ASTM E1527-13 Standard was used for this evaluation and 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):*** An 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 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 the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC §9601(22)).

An additional condition that is not included under the definitions of an REC but is defined by ASTM 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 neither RECs nor CRECs.

In addition to the ASTM-based REC classification of a site, a relative risk ranking based on environmental professional judgment 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. A site of concern may or may not ultimately be classified as an REC site as defined by ASTM, yet still may be "of concern" to the proposed infrastructure. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues and characteristics associated with the site.

Once the elements of the investigation process were completed, identified sites of concern were categorized by an environmental professional using a subjective risk ranking system, classifying the sites with low-risk, moderate-risk, or high-risk determinations. The following provides general descriptions of each category:

- **Low-risk** sites are those 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 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 relatively low-risk listings, such as disposing of small quantities of hazardous waste or having a hazardous materials business plan (HMBP) on file in the environmental databases defined in the Methodology section.
- **High-risk** sites are those 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 automotive 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. No indeterminate risk sites were identified within the Project study area.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Transport, Use, or Disposal of Hazardous Materials

Project-related effects would be considered adverse if the Build Alternative improperly transports, uses, or disposes of hazardous materials resulting in a health hazard to construction employees, the public, and the environment.

Risk of Hazardous Materials Release into the Environment

Project-related effects would be considered adverse if the Build Alternative results in an accidental release of hazardous materials including contaminated soil, groundwater, soil vapors, asbestos, and lead-based paint (LBP) causing construction employees, the public, and the environment to be exposed to health hazards.

Hazardous Emissions or Handling of Hazardous Waste or Materials within 0.25 mile of an Existing or Proposed School

Project-related effects would be considered adverse if the Build Alternative results in accidental release of hazardous materials causing nearby schools to be exposed to health hazards.

Hazardous Materials Sites

Project-related effects would be considered adverse if the Build Alternative results in ground disturbance of REC sites with moderate or high-risk rankings and exposes construction employees, the public, and the environment to hazardous materials including contaminated soil and groundwater.

3.10.4 Affected Environment

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 K of this EIS), 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 from approximately 14 to 48 feet bgs (Appendix K of this EIS).

Link Union Station Hazardous Waste Impacts Technical Memorandum

The *Link US Hazardous Waste Impacts Technical Memorandum* (Appendix L of this EIS) includes the following:

Environmental Records Review

An environmental information database search was completed on October 16, 2020. The database search resulted in 2,701 regulatory listings located within 0.5 mile of the Project study area. A total of 45 sites evaluated for potential RECs were located within or near the Project footprint, of which, after further review, a total of 13 sites were determined to be within the Project footprint, and of High or Moderate Risk (Table 3.10-2 and Figure 3.10-1). Sites that are High or Moderate Risk have bold map code numbers in the table. Some listings in Table 3.10-2 are duplicative if a database listing contains more than one site or refers to a large area of contamination under study due to a common history. To orient the reader to the locations of the REC site, 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). This table is a summary of the information provided in greater detail in the *Link US Hazardous Waste Impacts Technical Memorandum* (Appendix L of this EIS).

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
Throat Segment					
1	Parcel PA-018	924 North Spring Street at West College Street	Groundwater contamination from apparent off-site sources. Prior soil contamination excavated and disposed of offsite. No further action letter issued.	HREC/No Project disturbance, no risk.	Diesel-range and total recoverable petroleum hydrocarbons in groundwater. Residual arsenic and lead in soil.
3	BNSF Railway, Mission Tower	1430 Bolero Lane and East Bloom Street	Cleanup program site, documented soil contamination.	REC/Low risk, only surface disturbance.	Residual heavy, relatively immobile, nonvolatile petroleum hydrocarbons in soil.
34	Twin Towers Correctional Facility	978 North Vignes Street	EDR Historic UST. Residential, store and glass warehouse history.	No Project disturbance, no risk.	None.
36	Bolero Lane and Bloom Street Derailment	MP 482 on the Alhambra Subdivision	Train derailment site.	No Project disturbance, no risk.	None.
42	SoCalGas/Aliso Street MGP Site-Wide Groundwater	Project area-wide	Ongoing groundwater monitoring. Documented groundwater contamination.	REC/Moderate risk. Groundwater depth approximately 28 feet bgs. Not encountered during most project construction activities.	Benzene, lead, PAHs, 1,3-butadiene, styrene, toluene, xylenes and zinc in groundwater.
45	William Mead Homes	1300 Cardinal Street	Historic UST, Cortese, Envirostor.	REC/Low risk. Retaining wall and TCE not likely to encounter hazardous waste material.	Lead, PAHs, PCE, and 1,1,1-TCA in soil.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
Concourse Segment					
2	One Gateway Plaza	Gateway Station Complex entrance	CA UST, RCRA, history of auto repair, documented groundwater contamination.	REC/Moderate Risk.	Natural petroleum seeps, VOCs in groundwater.
7	435 Ramirez Street	435 Ramirez Street	Historic UST. Auto repair and gas and oil on 1960–1970 Sanborn maps.	REC/No Project disturbance, no risk	Gasoline constituents and automotive repair-related petroleum products and solvents.
11	Construction Staging Area for El Monte Busway Project	500 East Ramirez Street	Hazardous waste generator for acids and organics. SoCalGas/Aliso Street MGP site purifying yard #2 circa 1950.	REC/No Project disturbance, no risk.	MGP wastes; waste acids and organics.
18	SoCalGas/Aliso Street MGP Sector A, Denny's, Caltrans, Metro Union Station, Patsaouras Plaza El Monte Busway Station	530 East Ramirez	SoCalGas/Aliso Street MGP Butadiene Division, land use restrictions. Contaminated soil was documented at a depth of 26 feet bgs. Ongoing groundwater monitoring.	CREC/No Project disturbance, no risk.	Carcinogenic PAHs, naphthalene.
20	547 Ramirez Street	547 Ramirez Street	EDR Historic UST. Historic SoCalGas/Aliso Street MGP facilities nearby, former instrument shop,	REC/No Project disturbance, no risk.	Potential MGP waste.
21	C. Erwin Piper Technical Center	555 East Ramirez Street	CA UST. Extensive fuel storage and vehicle	REC/No Project disturbance, no risk.	TPH, chlorinated solvents, PAHs, waste oil, heavy metals.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
			maintenance activities.		
25	Patsaouras Transit Plaza Expansion Project	700 North Vignes Street	Historic UST. Maier's bottling works operations from 1950 to 1960.	REC/No Project disturbance, no risk.	TPH, PAHs, heavy metals.
35	Ramirez Street Investigation	400 feet of Ramirez Street between Center and Keller Streets	SoCalGas/Aliso Street MGP Sector A, Boiler House No. 1 Butadiene Division Plant No. 1. Remediation ongoing.	REC/No Project disturbance, no risk.	Benzene, TPH-diesel, TPH-gas, TPH-motor oil, trichloroethene, and vinyl chloride.
39	Southern California Regional Rail Authority (Metrolink) Track Extension	SoCalGas/ Aliso Street MGP Sector A	Catch-all listing for SoCalGas/ Aliso Street MGP Sector A, East and West Parcels. 8,532 cubic yards of contaminated soil containing TPH and metals removed. Land use restrictions. See also Nos. 18 and 35.	CREC/No Project disturbance, no risk.	TPH and metals (chromium, lead, arsenic, and mercury).
43	LAUS	800 North Alameda Street between US-101 and East Cesar Chavez Avenue	Historic chemical and motor vehicle USTs, large quantity hazardous waste generator. No further action issued, but soil contamination with TPH remains.	HREC/Moderate risk soil excavation as deep as 20 feet bgs under the Build Alternative.	Diesel and gasoline constituents, waste oil, TPH.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
Run-Through Segment					
4	A&A Towing Co.	415 East Commercial Street	EDR LUST.	REC/No Project disturbance, no risk.	Petroleum hydrocarbons.
5	Rasmussen AM	418 Aliso Street	Gas station in 1933.	REC/No Project disturbance, no risk.	Gasoline constituents.
6	MV Transportation	434 East Commercial Street	Hazardous waste generator, petroleum and chemical storage.	REC/No Project disturbance, no risk.	Petroleum products.
8	LADOT Material Control and Commercial Street Traffic Yard	444 East Commercial Street	Generation of contaminated soil. Oil storage in drums.	REC/No Project disturbance, no risk.	Petroleum hydrocarbons.
9	LADOT Bus Operations	454 East Commercial Street	Historic UST. Bus maintenance and cleaning, hazardous waste generator.	REC/No Project disturbance, no risk.	Lubricating and waste oils, solvents for parts degreasing, heavy metals.
10	500 East Commercial Street	500 East Commercial Street	Historic UST. Machine shop for Maier Brewing Co. circa 1950 to 1970.	REC/No Project disturbance, no risk.	Lubricating and waste oils, solvents for parts degreasing, heavy metals.
12	SoCalGas/Aliso Street MGP, Towwerks LLC/ Viertel's Tow Yard	500 Center Street	MGP site, land use restrictions. Large gas storage holder historically occupied most of parcel, documented soil contamination.	CREC/High Risk. Project construction involving deep pilings up to 100 feet bgs.	PAHs including benzo(a)pyrene and naphthalene and benzene and TPH in soil.
13	S&P/Caltrans	501 East Commercial Street, 531 East Commercial	Historic UST, gasoline spill, part of Maier Brewing Co. Documented	REC/High Risk. Construction activities will involve deep	Floating product (gasoline- and diesel-range TPH) on water table, hexavalent chromium.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
		Street, 516 Aliso Street	releases with soil and groundwater contamination.	pilings and dewatering.	
14	SoCalGas/Aliso Street MGP Sector C, Tosco Refining, Unocal Center Street Terminal, Conoco Phillips	501 North Center Street	Hazardous waste generator, land-use restrictions. Part of SoCalGas/Aliso Street MGP Ducommon Street plant until circa 1970. Former bulk petroleum storage, documented soil contamination.	CREC/Moderate risk (only small area of potential disturbance).	Petroleum hydrocarbons, PAHs, and VOCs in soil.
15	Vacant Lot	510 East Commercial Street	CA Historic UST, LUST (gasoline), historic auto fueling station, historic motor oil storage.	REC/No Project disturbance, no risk.	Potential for gasoline and motor oil constituents.
16	516 Aliso Street	See No. 13	—	—	—
17	Electric Vehicle Charging Facility	516 East Commercial Street	15 tons contaminated soil generated. Former cake box manufacturing and printing company.	REC/No Project disturbance, no risk.	VOCs, heavy metals, PCBs from historic printing activities.
19	PBR Realty LLC, Caltrans District 7, Commercial Street Widening	531 East Commercial Street	See No. 13.	—	—
22	LAPD Property Division 454	620 East Commercial Street	Large quantity hazardous waste generator. Historic rotary aluminum smelter	REC/No Project disturbance, no risk.	Waste solvents, acids, bases, heavy metals.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
			and junk and rag salvage.		
23	Commercial Building	626 Aliso Street	Historic UST. Historic paper and cloth bailing, bailed paper and rag storage associated with burlap bag manufacturing.	REC/Moderate risk. Building to be demolished, soil disturbed down to 5 feet bgs under the Build Alternative.	Potential for VOCs, PAHs, heavy metals. No prior sampling conducted.
24	Amay's Bakery & Noodle Co. Inc.	636 Aliso Street, currently known as 837 East Commercial Street	Historic UST. Historic lumber mill in 1906.	REC/Moderate risk. Building to be demolished, soil disturbed down to 5 feet bgs under the Build Alternative.	Potential for VOCs, PAHs, heavy metals. No prior sampling conducted.
26	Los Angeles County MTA/ Regional Connector Project	703 East Commercial Street	Within SoCalGas/ Aliso Street MGP site. Documented soil contamination.	REC/High risk. Surficial and deep soil impacts from the Build Alternative.	MGP waste.
27	S&P Co.	706 East Commercial Street	Historic USTs. Former on-site vehicle fueling from three gasoline USTs.	REC/No Project disturbance, no risk.	Gasoline constituents.
28	SoCalGas/Aliso Street MGP site, Sector C, Block L/ Ironworks Collective, Inc.	718 to 728 East Commercial Street	SoCalGas/Aliso Street MGP Block L within Sector C. 1950 to 1970 had a 15,000,000 cubic feet steel gas tank. Documented soil and groundwater contamination.	CREC/No Project disturbance, no risk.	PAHs and lead in soil. 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, naphthalene, toluene, and methyl tertiary-butyl ether in groundwater.
29	Life Storage, former Friedman Bag Co.	801 East Commercial Street	Historic UST, gasoline LUST (no further action),	HREC/Moderate risk. Building demo under the Build Alternative.	Gasoline constituents.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
			hazardous waste generator. Friedman Bag Co. burlap bag warehouse.		
30	Benavente Ray	802 Aliso Street	EDR Historic Dry Cleaners Sanborn maps do not corroborate.	No Project disturbance, no risk.	None.
31	A&H Greenfield Sheet Metal/ Viertel's Tow Yard/Police Impound Garage	830 East Commercial Street	See also No. 12. SoCalGas/Aliso Street MGP Block K within Sector C. No further action issued for soils. Land use restrictions. Documented groundwater contamination.	CREC/High risk under the Build Alternative.	MGP waste. Documented petroleum hydrocarbons groundwater contamination.
32	Mission Garage	832 Aliso Street	EDR Historic Auto Repair. Sanborn maps do not corroborate.	No Project disturbance, no risk.	None.
33	Los Angeles County MTA Temporary Storage Facility	840 East Commercial Street	Sanborn maps show former chemical manufacturing from 1953 to 1970. No indication of prior investigations.	REC/High risk under the Build Alternative.	Nature of former chemicals manufactured unknown.
37	SoCalGas/Aliso Street MGP Sector C	Center and East Commercial Streets	See Nos. 14, 26, 28, 31, and 33. Catch-all listing for MGP site Sector C.	Refer to individual sites.	Refer to individual sites.
38	Division 20 Portal Widening and Turnback Facility Project	Eastern side of Center Street from East	Stormwater permit during construction.	No Project disturbance, no risk.	None.

Table 3.10-2. Recognized Environmental Condition Sites Within and Adjacent to the Project Footprint

Map Code[a]	Site Name	Address	Regulatory Listings/Site History[b]	Determination/ Risk Ranking	Contaminants of Concern
		Commercial to 1st Street			
40	SoCalGas/Aliso Street MGP Sector C, Block K	See Nos. 12, 31, and 33	Catch-all listing for SoCalGas/ Aliso Street MGP site, Block K within Sector C. Land use controls.	Refer to individual sites.	Refer to individual sites.
41	SoCalGas/Aliso Street MGP Sector C, Block G	Northwestern corner of East Commercial and Center Streets	See No. 26. Documented soil contamination.	See No. 26. Both surficial and deep soil impacts from the Build Alternative.	Benzene, lead, PAHs, TPH-diesel, TPH-gas, 1,3-Butadiene, hexachlorobutadiene, styrene, toluene, xylenes and zinc.
44	402 East Commercial Street	Southeastern corner of East Commercial and North Alameda Streets	Not in EDR report. Shown on Sanborn maps as a filling station 1954 to 1970.	REC/No Project disturbance, no risk.	Gasoline constituents.

Notes:

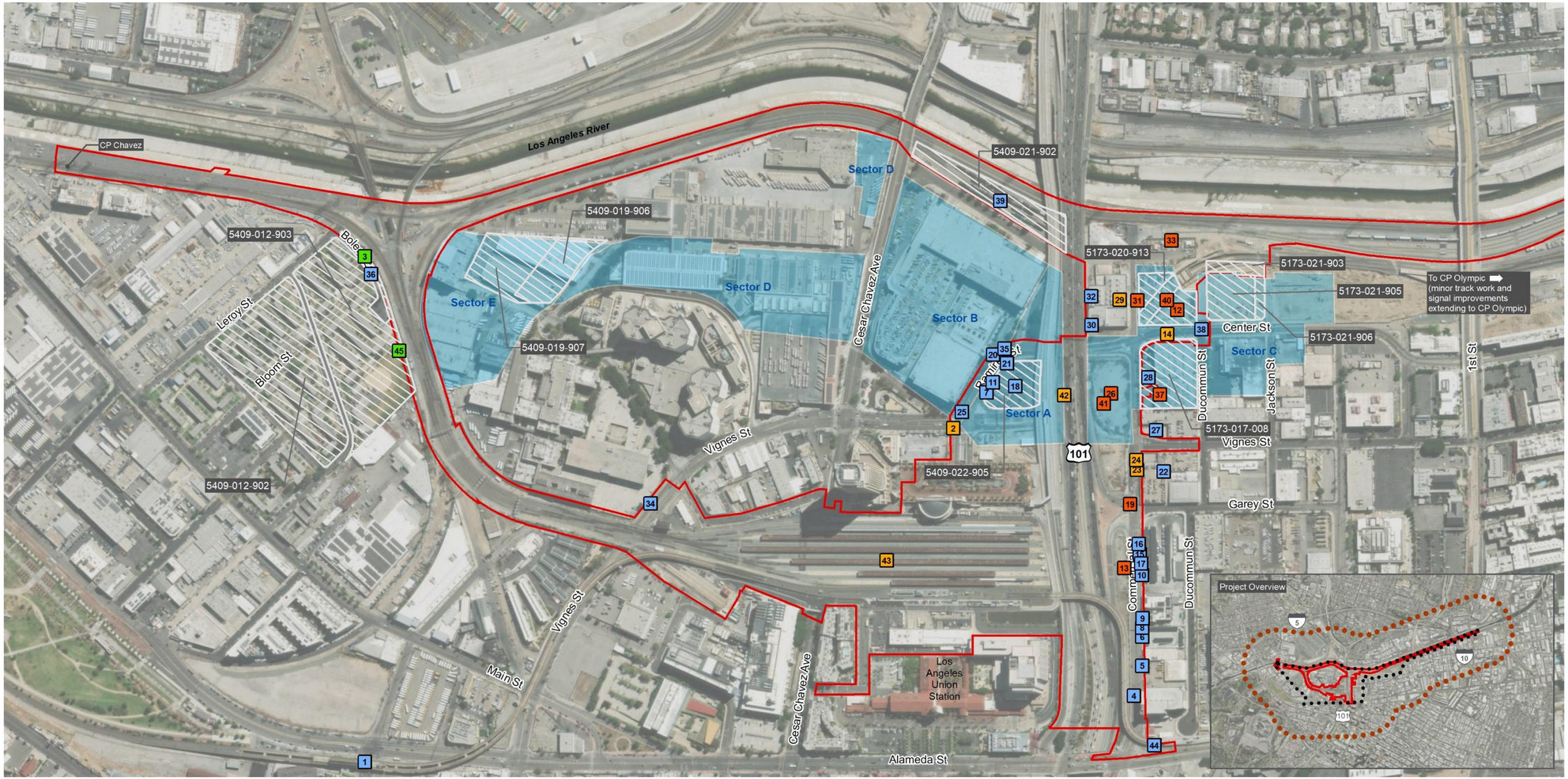
[a] ***This map code corresponds to Figure 3.10-1***

[b] ***Complete acronym list is included in the Link US Hazardous Waste Impacts Technical Memorandum (Appendix L of this EIS).***

1,1,1-TCA=1,1,1-Trichloroethane; bgs=below ground surface; CA=California; CREC=Controlled Recognized Environmental Condition; EDR=Environmental Data Resources, Inc.; HREC=Historic Recognized Environmental Condition; LUST=Leaking underground Storage Tank; MGP=Manufactured Gas Plant; PAH=Polycyclic Aromatic Hydrocarbon; PCBs=Polychlorinated Biphenyls; PCE=Tetrachloroethylene; RCRA=Resource Conservation and Recovery Act; REC=Recognized Environmental Condition; TCE=Temporary Construction Easement; TPH=Total Petroleum Hydrocarbons; UST=Underground Storage Tank; VOC=Volatile Organic Compound

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Figure 3.10-1. Location of Recognized Environmental Condition Sites and Associated Risk Rankings – Build Alternative



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Historical Record 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 that may affect the Build Alternative. The following sources were referenced as part of this research:

- ***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.
- ***Fire Insurance Maps;*** Historical Sanborn® Fire Insurance maps were reviewed for the Project area, where available. This information was used to corroborate database information and to validate site locations as street addresses changed over time. Construction of US-101 considerably altered the Project area's street layout.

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 Southern California Gas Company (SoCalGas)/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 included petroleum hydrocarbons, VOCs, cyanide, Polycyclic Aromatic Hydrocarbons (PAH), and heavy metals.

Site Reconnaissance

The surrounding area is fully developed with commercial, industrial, residential, and institutional buildings and facilities. Surface oil staining was present on railroad ballast within the railroad ROW. Groundwater monitoring wells were located throughout the Project study area, many of which were probably associated with the SoCalGas/Aliso Street MGP site groundwater monitoring program. Overhead electrical lines, including transformers, were present throughout the Project study area.

- Within the Throat Segment in 2020, construction west of the intersection of Main Street and College Street and construction on the vacant lot south of the California Drop Forge site located at 1033 Alhambra Avenue were observed (Care First Village).

- Within the Concourse Segment in 2020, construction of Patsaouras Plaza, adjacent to One Gateway Plaza, and the El Monte Busway, adjacent to the Denny's on Vignes and Ramirez Streets, was observed although neither project was completed at the time of observation.

- Within the Run-Through Segment in 2020, some construction equipment was staged at the laydown yard used for Metro's Regional Connector Project, located northwest of the intersection of Commercial and Center Streets. An LADOT charging facility for electric busses had recently been constructed on the southwestern corner of East Commercial and North Garey Streets. The former Viertel's Tow Yard site, located on the southeastern corner of Center and East Commercial Streets, was under construction for Metro's Division 20 Portal Widening Project.

Buildings associated with all the properties on the eastern side of Center Street, between East Commercial and First Streets, had recently been demolished, including the former National Cold Storage Company building. Grading and excavation of the sites was ongoing. The dead-end segments of Ducommun Street, Jackson Street, Temple Street, and Banning Street, all east of Center Street, had been vacated for the construction of Metro's Emergency and Security Operations Center and Division 20 Yard Expansion Projects. A sign on the fence around the projects indicated that site soils contained metals, petroleum, polynuclear aromatic hydrocarbons, and VOCs.

Several properties on Sixth Street had recently been demolished and a new bridge was under construction adjacent to the electrical substation on Sixth Street and Santa Fe Avenue. Construction activities were underway on both sides of the Los Angeles River.

Environmental Liens and Activity Use Limitations

Considering the historical land uses in the area, the following seven sites have land use restrictions:

1. Southern California Regional Rail Authority (Metrolink) Track Extension – 710 to 720 Keller Street, APN: 5409-021-902 (No. 39):

- Metrolink currently uses the Keller Yard for storage, specifically SCRRA West Bank tracks MT-3, MT-4, and the Amtrak Roundhouse Lead. The Build Alternative does not include modifications to the Keller Yard storage tracks. However, excavation, track work, and related grading under the US-101 and El Monte Busway overcrossing are likely.
- PAHs and TPH were identified as contaminants of concern in soil.

2. SoCalGas/Aliso Street MGP site, Sector C, Block L/Ironworks Collective Inc. – 718 to 728 Commercial Street, APN: 5173-017-008 (No. 28):
   - An overhead rail structure would extend over this property. This construction may require excavation down to competent geologic material and installation of deep shaft pilings.
   - PAHs and lead were identified as contaminants of concern in soil; 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, naphthalene, toluene, and MTBE were identified as contaminants of concern in groundwater.
3. A&H Greenfield Sheet Metal/Viertel's Tow Yard/Police Impound Garage – 830 Commercial Street, APN: 5173-020-010 (No. 31) and SoCalGas/Aliso Street MGP, Towwerks LLC/Viertel's Tow Yard – 500 Center Street, APN: 5173-020-010 (No. 12):
   - An overhead rail structure would extend over this property. This construction may require excavation down to competent geologic material and installation of deep shaft pilings.
   - Carcinogenic PAHs, including benzo-a-pyrene and naphthalene, benzene, and TPH, were identified as contaminants of concern in soil.
4. SoCalGas/Aliso Street MGP Sector C, Tosco Refining, Unocal Center Street Terminal, Conoco Phillips – 501 Center Street, APNs: 5173-021-903, 5173-021-905, 5173-021-906 (No. 14):
   - In addition to being the location of the planned Metro Emergency and Security Operations Center building, this property may be impacted by an elevated rail structure, which will extend over the northeast corner. A support column may be installed in this corner.
   - VOCs, including benzene and xylene, and PAHs, including naphthalene, were identified as contaminants of concern in soil. VOCs, including benzene and PCE, were identified as contaminants of concern in soil vapor.
5. SoCalGas/Aliso Street MGP, Sector A/Denny's parcel/Caltrans/ Metro Union Station/ Patsaouras Plaza El Monte Busway Station Project – 530 Ramirez Street, APN: 5409-022-905 (No. 18):
   - This parcel is not currently proposed for ground disturbance and would be used for staging purposes.
   - PAHs were identified as contaminants of concern in soil and groundwater.

6. William Mead Homes – 1300 Cardinal Street, APNs: 5409-012-902, 5409-012-903:
    - The southern edge of the southern parcel (5409-012-903) would be impacted by the Build Alternative to support construction of a retaining wall/sound wall.
    - Lead, PAHs, PCE, and 1,1,1-TCA were identified as contaminants of concern in soil.
7. Metro CMF, MTA Building 6 – 490 and 496 Bauchet Street, APNs 5409-019-906, 5409-019-907:
    - These parcels are not currently impacted by the Build Alternative.
    - PCE and naphthalene were identified as contaminants of concern in soil. Benzene, MTBE, PCE, TCA, and vinyl chloride were identified as contaminants of concern in groundwater.

In general, these properties have had access and use restrictions imposed upon them as a result of contamination by the former SoCalGas/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.

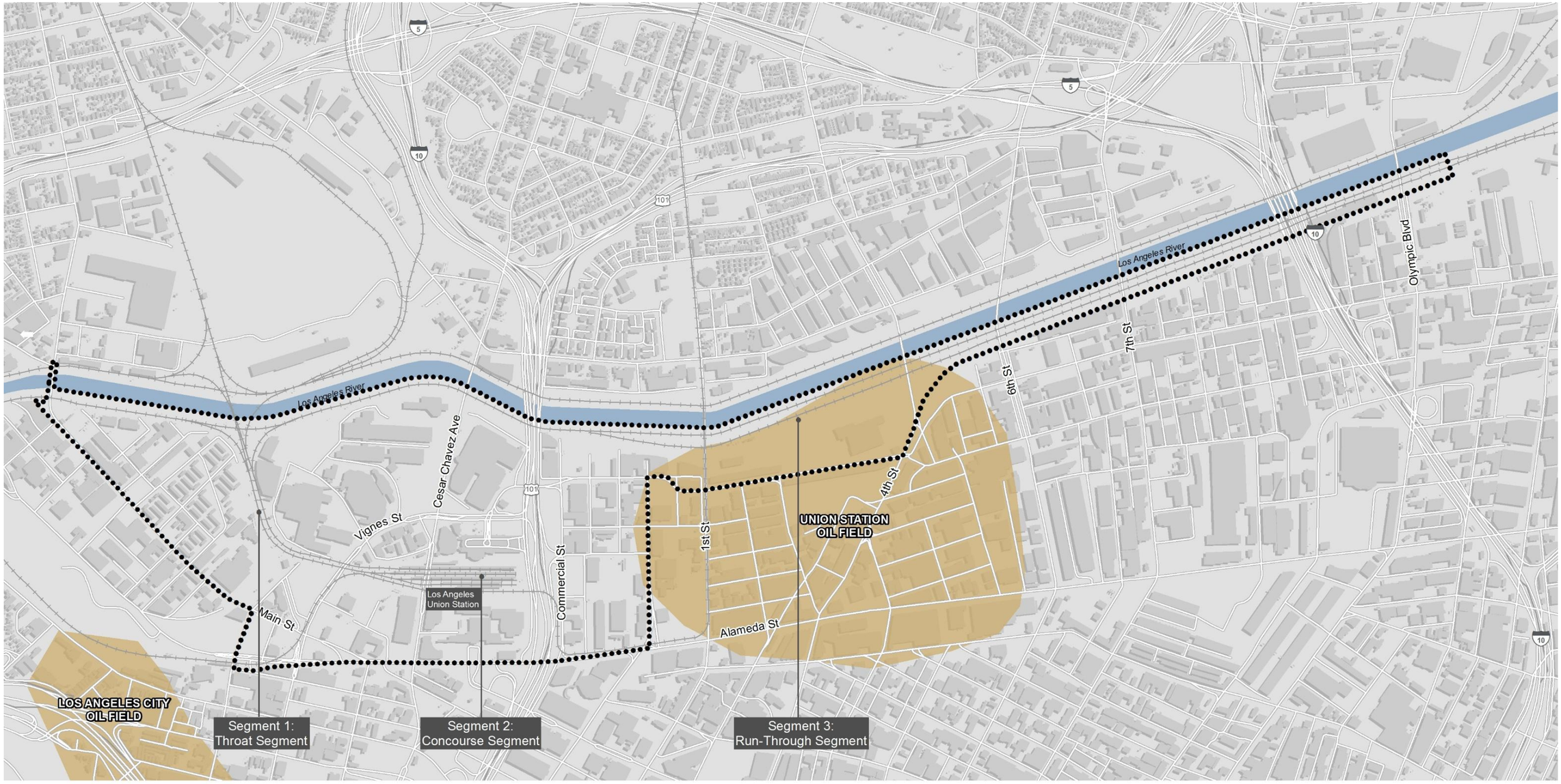
Oil Seeps and Gas Fields

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 3.10-2, 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 were 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 2002). Although low risk, the potential exists for naturally occurring oil and gas seeps to be encountered during construction activities.

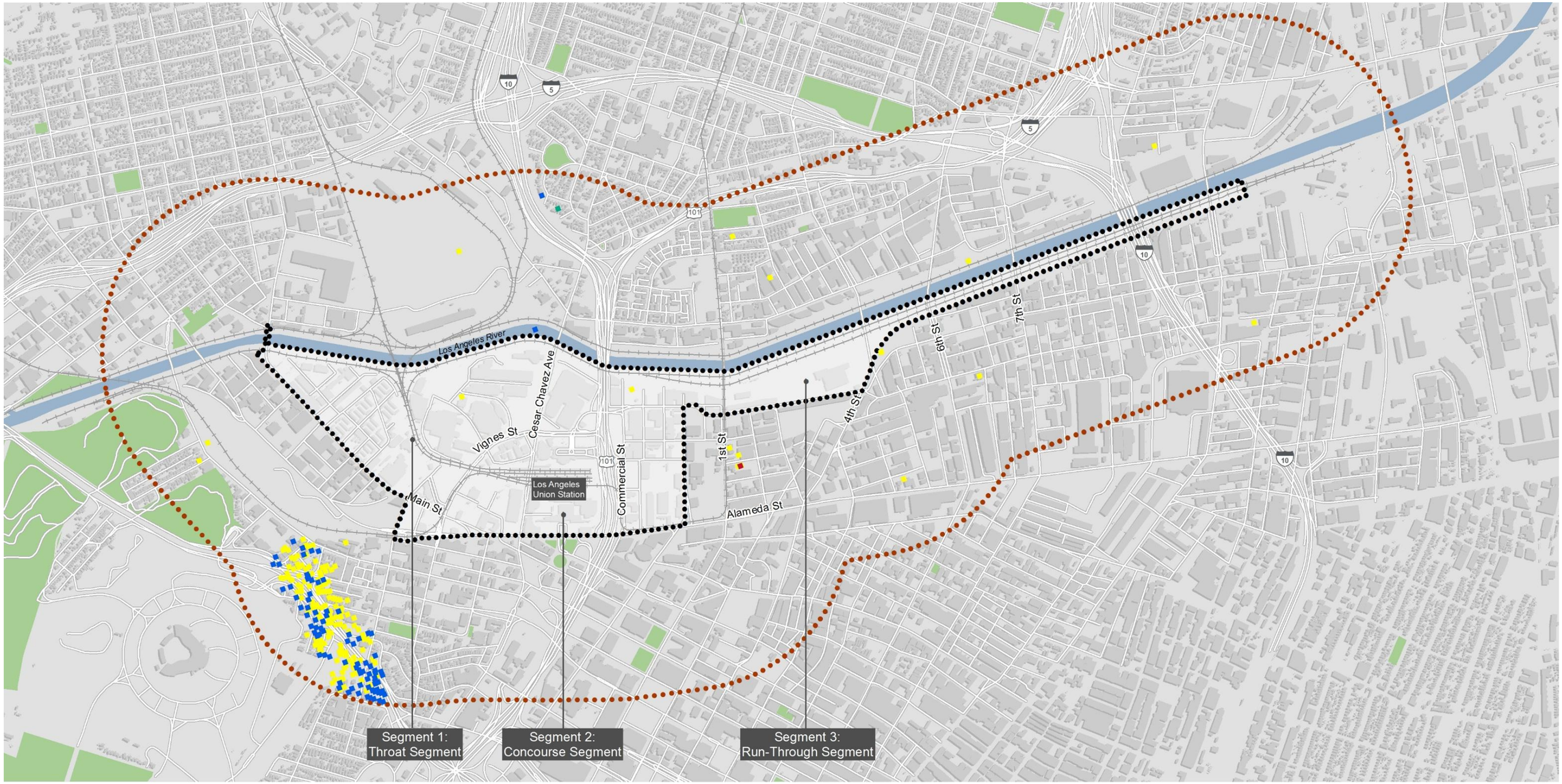
Oil and gas seeps are natural springs where liquid and gaseous hydrocarbons arrive at the ground surface. Oil and gas seeps are fed by natural underground accumulations of oil and natural gas. Petroleum that leaks to the Earth's surface is typically in the form of a tar-like substance called asphaltum. 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. As depicted on Figure 3.10-3, 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:

Figure 3.10-2. Oil Fields and Methane Areas



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Figure 3.10-3. Oil and Gas Wells



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- 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 LAUS, within the loop area north of US-101. The well was listed as plugged and abandoned. A Report of Well Abandonment was issued on 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 CH_4 may also accumulate in soil vapor near oil fields and oil wells.

The LABOE has defined Methane Zones and Methane Buffer Zones around known oil fields and wells (Figure 3.10-2) (County of Los Angeles 2004). These areas have developmental regulations required by the City of Los Angeles pertaining to ventilation and CH_4 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 Assessment* (Appendix G of this EIS), 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 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 friable fibers are released into the 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 FCAA .

Demolition of structures containing ACM requires specific remediation activities regulated by federal, state, and local laws. The California Department of Industrial Relations and (OHSA) have

established comprehensive programs to address this issue. Specifically, in Title 8 of the CCR, Section 1529, policies, and procedures have been promulgated that establish requirements for the transport, disposal, storage, containment, and housekeeping activities associated with activities involving asbestos. Compliance with stipulations and requirements detailed in the CCR, and likely the development of facility- or building-specific asbestos management plans, would be required to ensure full disclosure and awareness of risks, to establish project-specific requirements for containment and housekeeping, and to protect workers and other local sensitive populations from dangerous exposure levels associated with demolition of facilities (commercial, warehouse, etc.) that were built when asbestos was a common element in many construction materials (e.g., insulation, fire proofing, and tile/mastic).

Based on the age (e.g., pre-1970s) of many of the buildings and structures within the Project study area, it is possible that these buildings were constructed when ACMs and 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.

Elevated concentrations of aerially deposited lead also exist in soils along older roadways as a result of the historical use of leaded gasoline and resulting leaded fuel tailpipe emissions. This applies to freeways such as US-101 but is also associated with main thoroughfare streets that were in use during the decades when leaded gasoline was common, such as those found within the Project study area.

Proximity to Schools

The following schools are located within 0.25 mile of the Project footprint:

- ***Albion Elementary School:*** 322 S Avenue 19 (located 0.28 mile northeast of the North Main Street at-grade crossing)
- ***PUC Excel Charter Academy:*** 1855 North Main Street located 0.23 mile northeast of the North Main Street at-grade crossing)
- ***Ann Street Elementary:*** 126 East Bloom Street (located 0.13 mile north of the throat tracks);
- ***Metro Gateway Childhood Development Center:*** 1 Gateway Plaza located 0.02 mile east of the elevated rail yard);
- ***Felicitas and Gonzalo Mendez Senior High:*** 1200 Plaza Del Sol (located 0.16 mile west of the portion of BNSF West Bank Yard near First Street);
- ***Utah Elementary School:*** 255 Gabriel Garcia Marquez Street (located 0.16 mile west of the portion of BNSF West Bank Yard near First Street);
- ***La Petite Academy (First 5 LA Headquarters):*** 750 Alameda Street (located 0.07 mile west of the elevated rail yard);

- ***Beyond the Bell:*** 611 Jackson Street (located 0.02 mile south of proposed run-through tracks)
- ***Harry Pregerson Child Care Center:*** 255 East Temple Street (located 0.07 mile southwest of proposed run-through tracks)
- ***Southern California Institute of Architecture:*** 960 East 3rd Street (located 0.15 mile west of main line tracks along west bank of Los Angeles River)

3.10.5 Environmental Consequences

TOPIC 3.10-A	Transport, use, or disposal of hazardous materials

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Under the No Action Alternative, there would be no construction activities that would require excavation and grading activities that could potentially encounter contaminated soil and/or groundwater. Existing maintenance facilities for trains are already in operation and would continue to provide areas for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials, in compliance with existing regulations and legislation governing the safe handling and disposal of hazardous materials.

Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Other projects could require transport, use, and disposal of similar types and relative quantities of hazardous materials for during construction and operation as the Build Alternative and accidental spills or releases of hazardous materials and wastes could occur with the continued operation of other development or during transportation of hazardous materials and wastes. The context and intensity of effects would vary based on the locations of other proposed developments. Maintenance activities within in the railroad ROW would continue to be performed in accordance with consistent with applicable federal, state, regional, and local agency requirements. All other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. In this context, continued compliance with applicable federal, state, regional, and local agency requirements would address issues related to the routine use, transport, and disposal of hazardous materials and substances. Therefore, no direct or indirect adverse effect would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Transport, Use, or Disposal of Hazardous Materials

During construction, the use of hazardous materials and substances would be required, and hazardous wastes would be generated.

- Hazardous materials would include, but would not be limited to vehicle fuels, asphalt/ concrete, lubricants, epoxy resins, drilling fluids, and paints.
- Hazardous wastes would include, but not be limited to soils contaminated by petroleum hydrocarbons, pesticides, herbicides, asbestos, heavy metals, or other hazardous materials, as well as ACM and LBP that could also be encountered during demolition of roadways, structures, and track modifications necessary to support construction.

If a spill of hazardous 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 construction presents a possible risk to the environment. This is considered an adverse effect. Mitigation Measure HAZ-1 (described in Section 3.10.6) requires preparation of a Construction Hazardous Materials Management Plan (HMMP) that would include 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. Upon implementation of Mitigation Measure HAZ-1, no direct adverse effect related to the transport, use, or disposal of hazardous materials would occur during construction.

Transport, Use, and Disposal of Contaminated Soil and Groundwater

Contaminated soil and groundwater may also be encountered during soil excavations and dewatering activities, which would require specialized handling, treatment, and eventual off-site transport. If contaminated soil and/or groundwater is encountered, typical requirements include temporary storage BMPs, 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.

If not adequately managed, potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. This is considered an adverse effect. As discussed above, Mitigation Measure HAZ-1 (described in Section 3.10.6) requires preparation of a Construction HMMP that would include 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. Implementation of Mitigation Measure HAZ-1 would minimize the potential for construction effects by requiring implementation of management measures that are designed

for the specific risk to occur. Upon implementation of Mitigation Measure HAZ-1, no direct adverse effect related to the transport, use, or disposal of contaminated soils and groundwater would occur during construction.

Direct Effects – Operations

The Build Alternative would involve an increase in the number of trains arriving and departing LAUS; however, operational activities and practices involving the 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 are already in operation and would continue to provide areas for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials, in compliance with existing regulations and legislation governing the safe handling and disposal of hazardous materials. Therefore, no direct adverse effect would occur related to the transport, use, or disposal of hazardous materials during operations.

Indirect Effects – Construction and Operations

As described above, construction of the Build Alternative would temporarily increase the transport, use, and disposal of hazardous materials and waste. This would inadvertently increase the potential for hazardous substances release and would be an indirect adverse effect if not properly managed. Analysis of accidental release of hazardous materials into the environment due to construction of the Build Alternative is analyzed further under Topic 3.10-B. Upon implementation of Mitigation Measures HAZ-1 through HAZ-8, no indirect adverse effects would occur during construction.

Implementation of the Build Alternative would facilitate an increase in the number of train movements beginning as early as 2026. 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. Any induced growth caused by the Build Alternative would be subject to all applicable regulations for proper transport, use, or disposal of hazardous materials during construction and operation. No indirect adverse effect would occur during operation.

TOPIC 3.10-B	Risk of hazardous materials release into the environment

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Construction and demolition (C&D) activities would not occur and would not result in potential exposure to contaminated soil and/or groundwater or migration of contaminants, ACMs, or LBPs. Reasonably foreseeable future projects, as described in Section

3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could incrementally release hazardous materials depending on the project type. The context and intensity of effects would vary based on the location of other proposed developments. However, maintenance activities within in the railroad ROW would remain consistent with applicable federal, state, regional, and local agency requirements. All other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. In this context, continued compliance with applicable federal, state, regional, and local agency requirements would address issues related to the risk of hazardous materials release. Therefore, no direct or indirect effects related to the release of hazardous materials would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Recognized Environmental Condition Sites

A total of 13 sites—8 RECs, 2 HRECs, and 3 CRECs—were identified within and adjacent to the Project footprint for the Build Alternative (Table 3.10-2). 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) during construction activities. Demolition of older railroad ties treated with creosote and newer ties treated with chromated copper arsenate can release heavy metals including PAHs and arsenic. Construction activities could also release herbicides that were applied to combat weeds within the railroad ROW, PAHs and heavy metals from coal ash and cinders in track ballast that would be removed, and volatile and semi-VOCs. This is considered a direct adverse effect because potential exposure to contaminated soil and/or groundwater, heavy metals, herbicides, and volatile and semi-VOCs could pose a health hazard to construction employees, the public, and the environment.

Soil Vapor Migration

The Project footprint is 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 mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil seeps and the accumulation of oil and CH_4 gas also have the potential to occur within the Project footprint. Subterranean construction activities could encounter soils contaminated with petroleum and petroleum products, which could release volatile contaminant vapors. The concourse-related improvements are the only potential habitable structure, and it will be expanded to a width of 140 feet as part of the Build Alternative. Soil vapor intrusion from CH_4 seeps and area-wide groundwater contamination could occur if changes in vapor migration pathways result from construction. This is considered a direct adverse effect because an accidental release of volatile contaminant vapors during excavations or tunneling could pose a health hazard to construction employees, the public, and the environment.

Asbestos and Lead

Based on the age (e.g., pre-1970s) of many of the structures (including bridges) within the Project footprint, it is possible that these structures 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. This is considered an adverse effect because an accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment.

Although typical construction management practices limit the potential for accidental releases of hazardous materials, these practices do not eliminate their risk. Implementation of Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10.6) would minimize direct adverse effects resulting from the accidental release of hazardous materials into the environment.

- Mitigation Measure HAZ-1 requires preparation of an HMMP for construction-related activities to outline 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.
- Mitigation Measure HAZ-2 requires Metro to prepare a Phase II Environmental Site Assessment (ESA) prior to final design. The Phase II ESA will focus on likely sources of contamination (based on the completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. A Phase II ESA report will summarize the results of the drilling and sampling activities and provide recommendations based on the investigation's findings. Metro will implement the recommendations in the Phase II ESA.
- Mitigation Measure HAZ-3 requires Metro to prepare a General Construction Soil Management Plan prior to construction to include general provisions for how soils will be managed within the Project footprint for the duration of construction.
- Mitigation Measure HAZ-4 requires Metro to prepare parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. For individual properties with LUCs or known contaminants where groundwater or soils could be affected, parcel-specific Health and Safety Plans (HASP) will also be prepared for submittal and approval by DTSC. The HASPs will 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.
- Mitigation Measure HAZ-5 requires Metro to coordinate with the DTSC regarding any plans specified in Mitigation Measure 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.

- Mitigation Measure HAZ-6 requires contractors to 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.
- Mitigation Measure HAZ-7 requires Metro to 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.
- Mitigation Measure HAZ-8 requires a survey to be conducted prior to the demolition of any structures constructed prior to the 1970s to determine the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal will be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements.

Upon implementation of Mitigation Measures HAZ-1 through HAZ-8, no direct adverse effects would occur during construction.

Direct Effects – 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) regulations that generally require that these materials not be released to the environment or disposed of as general refuse. Metro would also be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Applicable permits would require preparation of an 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 operation of the Build Alternative would be similar to existing conditions and the handling of hazardous materials would be subject to approval by the applicable regulatory agency. No change to the nature or magnitude of the risk is expected. Therefore, no direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

Considering LAUS is limited to passenger operations and hazardous materials are already managed in accordance with applicable regulations, the potential for increased hazardous materials release is not expected to occur. No indirect adverse effect would occur during construction or operation.

TOPIC 3.10-C	Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Project-related construction activities would not occur, and no use of commercially available hazardous materials, such as gasoline, brake fluids, coolants, and paints, would be required. Additionally, demolition activities would not occur and would not increase health risks to nearby schools. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could incrementally affect the risk of hazardous emissions or handling of hazardous waste close to existing schools depending on the project type. The context and intensity of effects would vary based on the location of other proposed developments. Maintenance activities in the railroad ROW would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. In this context, continued compliance with applicable federal, state, regional, and local agency requirements would address issues related to the risk of hazardous emissions or handling of hazardous waste close to existing schools. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

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 to the construction footprint and unlikely to pose a risk to the educational institutions within 0.25 mile of the Project footprint, 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. However, as explained in Section 3.5, Air Quality and Global Climate Change, implementation of Mitigation Measures AQ-1, Fugitive Dust Control, and AQ-2, compliance with Tier 4 exhaust, would reduce potential health risks associated with short-term construction activities to below the SCAQMD's 10-in-1 million threshold at sensitive receptors (see Section 3.5, Air Quality and Global Climate Change). Therefore, no direct adverse effects on students at nearby schools would occur during construction.

Direct Effects – Operations

Rail emissions were estimated for the Build Alternative based on daily passenger rail operations, fuel consumption, travel distance, idling time, and DPM emissions. Each of these is discussed in detail in Section 3.5, Air Quality and Global Climate Change, of this EIS. For the Build Alternative, with implementation of Mitigation Measure AQ-3, which requires annual emission inventories to determine if any increase in pollutant emissions and diesel pollutant concentrations would occur, and use of emerging technology for regional/intercity trains so that the rail emissions would not exceed the SCAQMD's threshold of 10 in 1 million. Therefore, no direct adverse effect on students at the nearby school(s) would occur during operation.

Indirect Effects – Construction and Operations

Construction of the Build Alternative would involve the transport and disposal of soil or other media contaminated with hazardous materials. This would result in an indirect effect on nearby schools if hazardous materials were accidentally released. The accidental release of ACMs or lead into the environment from demolition activities would also present a risk. Although compliance with existing laws and regulations regarding transport and disposal of hazardous materials would minimize potential risks, this is considered an adverse effect. Implementation of Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10.6) would minimize indirect adverse effects related to hazardous materials near schools during construction and operation.

TOPIC 3.10-D	Hazardous materials sites

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions including the 13 REC sites (Table 3.10-2) with moderate or high-risk rankings that have the potential to affect the environment. Under the No Action Alternative, C&D activities would not occur; therefore, hazardous materials sites would not be disturbed, and the No Action Alternative would not conflict with the LUCs within the Project study area. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could affect hazardous materials sites depending on the project type. The context and intensity of effects would vary based on the location of other proposed developments. Maintenance activities in the railroad ROW would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. In this context, continued compliance with applicable federal, state, regional, and local agency requirements would address issues related to hazardous materials sites. Therefore, no direct or indirect effects related to hazardous materials sites would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Recognized Environmental Condition Sites

As shown in Table 3.10-2, 13 REC sites with moderate or high-risk rankings have the potential to affect the environment during excavation activities. 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 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 an adverse effect because potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. Active construction areas where known contaminated soil and groundwater can be encountered would be fenced off and would not be accessible to the general public. In addition, implementation of Mitigation Measure HAZ-2 (described in Section 3.10.6) would minimize potential for hazards to the environment resulting from the release of contaminants from REC sites with moderate or high-risk ratings. Mitigation Measure HAZ-2 requires Metro to prepare a Phase II ESA prior to final design. The Phase II ESA will focus on likely sources of contamination (based on the completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. Metro will implement the recommendations in the Phase II ESA. Upon implementation of Mitigation Measure HAZ-2, no direct adverse effect would occur.

Land Use Covenants

As previously indicated, considering the historical land uses in the area, seven sites also have associated land use restrictions.

The Build Alternative would not conflict with the LUCs. 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, this is considered an adverse effect because there is potential to encounter undocumented sources of contamination, which could pose a health hazard to construction employees, the public, and the environment.

Implementation of Mitigation Measures HAZ-4 and HAZ-5 (described in Section 3.10.6) would minimize the potential for risks associated with land use restricted sites. Mitigation Measure HAZ-4 requires Metro to prepare parcel-specific Soil Management Plans for known contaminated sites and LUC-adjudicated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites and LUC-adjudicated sites. For individual properties with LUCs or known contaminants where groundwater or soils could be affected, parcel-specific HASPs will also be prepared for submittal and approval by DTSC. The HASPs will 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. Mitigation Measure HAZ-5 requires Metro to coordinate with the DTSC regarding any plans specified in Mitigation Measure 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. Therefore, Mitigation Measures HAZ-4 and HAZ-5 specifically address potential risks during construction activities that would take place on LUC properties. Upon implementation of Mitigation Measures HAZ-4 and HAZ-5, no direct adverse effect would occur during construction.

Direct Effects – Operations

After construction of the Build Alternative is complete and the proposed infrastructure is operational, the identified hazardous materials sites would not be disturbed and, therefore, would not require remediation or coordination with the governing agency. Therefore, no direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

Prior to construction, any hazardous materials sites located within the Project footprint that are identified as a moderate or high risk would be further analyzed in a Phase II ESA (Mitigation Measure HAZ-2) and additional mitigation measures would be implemented to reduce potential for impacts occurring outside of the Project footprint or beyond the construction timeframe. No indirect effect would occur.

3.10.6 Mitigation Measures

Implementation of the following mitigation measures would minimize adverse effects related to hazardous waste and materials. Metro adopted an MMRP as part of the Final EIR for the Link US Project, which included Mitigation Measures HAZ-1 through HAZ-8. The mitigation measures below generally follow the mitigation measures adopted in the MMRP for the Link US Project but include minor technical changes where necessary to address site-specific instances and/or clarify how the measure shall be implemented in the field by the contractor.

HAZ-1 **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor 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 the 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 and environmental 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), PCBs, 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 ESAs and evaluation of contaminated sites.

HAZ-3 **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor 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. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use.

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, the contractor 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 is expected to vary widely across the Project footprint, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. 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, parcel-specific HASPs shall also be prepared by contractors undertaking work activities and submitted to DTSC for approval. 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 HASP 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 proposed infrastructure, and each of the contaminated sites.

HAZ-5 **LUC Sites and Coordination with the DTSC:** Prior to construction on properties with an 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 and the environment.

HAZ-6 **Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials or 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, USTs, ACMs (e.g., transite pipes), 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 LABOE) comply with the City of Los Angeles Building Code regulations set forth in Ordinances 175790 and 180619. The ordinances require evaluation of CH_4 hazards and mitigation of a CH_4 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, a survey shall be conducted for the presence of hazardous building materials, such as ACM, LBP, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant shall be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and the survey report shall be submitted to the SCAQMD with an application for a Rule 1403 permit. 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.

3.10.7 NEPA Impact Summary

This section summarizes the effects related to hazardous waste and materials of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Potential risks associated with the routine use, transport, and disposal of hazardous materials, as well as accidental release would still be present for ongoing maintenance activities and changes related to other projects could incrementally affect the risk of hazardous emissions or handling of hazardous waste close to existing schools depending on the project type. Maintenance activities within in the railroad ROW would continue to be performed in accordance with applicable federal, state, regional, and local agency requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other municipal zoning requirements. Continued compliance with applicable federal, state, regional, and local agency requirements would address issues related to hazardous materials sites.

Build Alternative

As discussed under Topic 3.10-A, construction activities use hazardous materials, generate hazardous waste, and would require transportation and disposal of contaminated soil and groundwater. If a spill of hazardous materials were to occur or hazardous materials were improperly managed, the accidental release could pose a hazard to construction employees, the public, and the environment. Typical construction management practices limit the potential of such accidental release; however, this is an adverse effect given the extent and duration of construction activities and because such practices do not eliminate risk. Implementation of Mitigation Measure HAZ-1 (described in Section 3.10.6) would minimize the potential for adverse construction-related effects. Operational activities and practices involving the routine transport, use, and storage of potentially hazardous materials would remain similar to existing conditions. Maintenance activities would continue off site at existing maintenance facilities, such as Metrolink's CMF (or Taylor Facility) and the Amtrak maintenance. These facilities already in operation and would continue to provide areas for safe storage, containment, and disposal of chemicals and hazardous materials during operations.

As discussed under Topic 3.10-B, the proximity of the Project footprint to existing RECs could result in potential exposure to contaminated soil, groundwater, or migration of contaminants during construction. Demolition of older railroad ties treated with creosote and newer ties treated

with chromated copper arsenate can release heavy metals including PAHs and arsenic. Construction activities could also release herbicides that were applied to combat weeds within the railroad ROW, PAHs and heavy metals from coal ash and cinders in track ballast that would be removed, and volatile and semi-VOCs. Subterranean construction activities could encounter soils contaminated with petroleum and petroleum products, which could release volatile contaminant vapors. Soil vapor intrusion from CH_4 seeps and area-wide groundwater contamination could occur if changes in vapor migration pathways result from construction. In addition, the accidental release of ACMs, LBPs, and heavy metals could occur during demolition activities. Mitigation Measures HAZ-1 through HAZ-8 would minimize the potential for exposure to RECs or accidental release of hazardous materials into the environment. During operations, handling of hazardous materials would be subject to approval by the applicable regulatory agency. Changed conditions would be limited to potential releases in different areas from their current locations, but no change to the nature or magnitude of the risk is expected.

As discussed under Topic 3.10-C, standard equipment maintenance and good housekeeping practices during construction would minimize the risk of any hazardous materials release. However, if any release of these substances did occur, releases are anticipated to be localized to the construction footprint and unlikely to pose a risk to the three educational institutions within 0.25 mile of the Project footprint, mainly due to distance from proposed construction areas. With implementation of Mitigation Measure AQ-3, which requires annual emission inventories to determine if any increase in pollutant emissions and diesel pollutant concentrations would occur, and use of emerging technology for regional/intercity trains so that the rail emissions would not exceed the SCAQMD's threshold of 10 in 1 million, no direct adverse effect on students at the nearby schools would occur during operation. Due to the required transportation and disposal of soil or other media contaminated with hazardous materials, an indirect adverse effect on nearby schools could occur in the event of an accidental release. Implementation of Mitigation Measures HAZ-1 through HAZ-8 would minimize effects related to hazardous materials near schools.

As discussed under Topic 3.10-D, there are 13 REC sites with moderate or high-risk rankings and properties with LUCs and soil management requirements in the area. Given the uncertainties regarding clean up or remediation and the potential to encounter undocumented sources of contamination during construction, there is potential to encounter undocumented sources of contamination. Mitigation Measures HAZ-2, HAZ4, and HAZ-5 would avoid or minimize the potential for these risks.

Table 3.10-3 provides an impact summary for the Build Alternative.

Table 3.10-3. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect	*Construction* **HAZ-1 Prepare a Construction Hazardous Materials Management Plan**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP)** **HAZ-5 LUC Sites and Coordination with the DTSC** **HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations** **HAZ-8 Pre-Demolition Investigation**	*Indirect* No Adverse Effect

Table 3.10-3. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect	*Construction* **HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP)** **HAZ-5 LUC Sites and Coordination with the DTSC** **HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations** **HAZ-8 Pre-Demolition Investigation**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
	Construction No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect

Table 3.10-3. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.10-C: Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school	*Indirect* Adverse Effect	*Indirect* **HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP)** **HAZ-5 LUC Sites and Coordination with the DTSC** **HAZ-6 Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations** **HAZ-8 Pre-Demolition Investigation**	*Indirect* No Adverse Effect
Topic 3.10-D: Hazardous material sites	*Construction* Adverse Effect	*Construction* **HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)** **HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP)** **HAZ-5 LUC Sites and Coordination with the DTSC**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect

3.11 Public Utilities and Energy

3.11.1 Introduction

This section provides an evaluation of potential effects related to public utilities and energy resources, including water supply, delivery, and treatment facilities; drainage systems; wastewater collection, treatment, and disposal facilities; and solid waste disposal facilities that may result from the No Action Alternative and the Build Alternative. This section also includes an evaluation of energy demand and conservation measures in a local and regional planning context, as well as potential effects relative to electrical generation facilities and natural gas supply and conveyance infrastructure. Information contained in this section related to drainage systems is summarized from the *Link US Preliminary Low Impact Development Report* (Appendix K to this EIS) and published sources.

3.11.2 Regulatory Framework

Table 3.11-1 identifies and summarizes applicable laws, regulations, and plans relevant to public utilities and energy resources.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(4,10, and 11)*, 64 *Federal Register* 28545-28556 (1999)	These FRA procedures require the Draft and Final EIS to assess Project alternatives with respect to state and local standards for sanitary landfill and solid waste disposal. Procedures relating to the production and consumption of energy state that the Draft and Final EIS "shall assess in detail any irreversible or irretrievable commitments of energy resources likely to be involved in each alternative and any potential energy conservation, especially those alternatives likely to reduce the use of petroleum or natural gas, consistent with the policy outlined in EO 12185." Procedures relating to the use of natural resources other than energy, such as water, minerals, or timber, state that the Draft and Final EIS "shall assess in detail any irreversible or irretrievable commitments of these resources likely to be involved in each alternative."
Code of Federal Regulations Title 40 – Protection of Environment	CFR §1502.16(e) includes provisions that an EIS shall include a discussion of the energy requirements and conservation potential of various alternatives, natural or depletable resource requirements, and conservation potential of various alternatives, along with an identification of potential mitigation measures to reduce energy consumption associated with Project implementation.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Executive Order 12185 (3 Code of Federal Regulations 12185) (1979) - Conservation of Petroleum and Natural Gas	EO 12185 was signed by President Carter on December 17, 1979. The goal of EO 12185 is "to encourage additional conservation of petroleum and natural gas by recipients of Federal financial assistance."
Resource Conservation and Recovery Act (42 United States Code Section 6901 et seq.) and Environmental Protection Act (40 Code of Federal Regulations Parts 239-282) [1965]	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.
Corporate Average Fuel Economy standards (1975)	The latest CAFE standards require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026. The new standards will increase fuel efficiency 8 percent annually for model years 2024-2025 and 10 percent annually for model year 2026. They will also increase the estimated fleetwide average by nearly 10 miles per gallon for model year 2026, relative to model year 2021. These standards for 2024-2026 will reduce fuel use by more than 200 billion gallons through 2050 as compared to the old standards.
Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426) [November 30, 2004]	Established the PHMSA in the Department of Transportation to coordinate, facilitate, and review DOT research and develop programs and activities; advancement of innovative technologies; comprehensive transportation statistics, analysis and reporting; education and training in transportation and transportation-related fields; and activities of the Volpe National Transportation Center.
Section 403(b) of the Power Plant and Industrial Fuel Act (Executive Order 12185) [1978]	Provides that no new baseload electric power plant may be constructed or operated without the capability to use coal or another alternate fuel as a primary energy source. In order to meet the requirement of coal capability, the owner or operator of such facilities proposing to use natural gas or petroleum as its primary energy source shall certify, pursuant to FUA section 201(d), and Section 501.60(a)(2) of DOE's regulations to the Secretary of Energy prior to construction, or prior to operation as a base load power plant, that such powerplant has the capability to use coal or another alternate fuel.
Conservation of Petroleum and Natural Gas, 44 Federal Register Section 75093; Public Law 95-620)[December 17, 1979]	Encourages conservation of petroleum and natural gas by recipients of Federal financial assistance.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
State	
California Code of Regulations Title 27 Environmental Protection – Division 2, Solid Waste	Division 2 of CCR Title 27 regulates the treatment, storage, processing, and disposal of solid waste. The code is intended to promote the health, safety, and welfare of the people of the State of California, and to protect the environment by establishing minimum standards for the handling and disposal of solid wastes at disposal sites.
California Code of Regulations Title 24, Part 11, Green Building Standards Code	CALGreen is the nation's first mandatory green building standards code. CALGreen regulates the sustainability standards to which nonresidential structures are designed and constructed. Specifically, CALGreen encompasses five areas, which include planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.
California Code of Regulations Section 4216 – Excavation Law (revised January 1, 2020)	Section 4216 of the CCR requires that an excavator notify the applicable regional notification center (i.e., Underground Service Alert) at least 2 days before excavation of any subsurface utility installations.
California Public Utilities Commission Section 10001 through 1013	Sections 1001–1013 of the CPUC requires that railroad companies operating railroads that are powered by electric energy, or electric companies operating power lines will not begin construction of electric railroads or power lines without first obtaining a certificate from CPUC showing that the present or future public convenience and necessity require or will require such construction.
Solid Waste Reuse and Recycling Act (Public Resources Code 42900) [1991]	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.
Assembly Bill 2514 [September 29, 2010]	AB 2514 (Public Utilities Code 2835 et seq.), the energy storage law in California, requires the governing board of each POU to "determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems…" The CEC was given the responsibility to review the procurement targets and policies that are developed and adopted by the POUs to ensure that the targets and policies include the procurement of cost-effective and viable energy storage systems.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Senate Bill 1374, Chapter 501 (2002)	C&D waste can be a significant portion of a jurisdiction's waste stream and diverting it from landfills can help jurisdictions achieve and maintain their diversion goals established by AB 939. SB 1374 (Kuehl, Chapter 501, Statutes of 2002) directed the California Integrated Waste Management Board (now the Department of Resources Recycling and Recovery, or CalRecycle) to provide information to jurisdictions and general contractors on methods and activities to divert C&D materials. This bill also directed CalRecycle to develop and adopt a model C&D diversion ordinance for voluntary use by local jurisdictions.
Regional	
Los Angeles Department of Water and Power Urban Water Management Plan (2020)	LADWP's 2020 UWMP presents the general policies which guide LADWP's decision-making process to maintain and secure a sustainable water supply for the city. The UWMP serves two purpose: • It is the master plan for water supply and resources management consistent with LADWP's goals and policy objectives; and • It provides full compliance with the requirements of the California Urban Water Management Planning Act of 1984.
Local	
Los Angeles Construction and Demolition Waste Recycling Ordinance (2010)	The Los Angeles City Council approved Council File 09-3029 on 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.
City of Los Angeles Solid Waste Integrated Resources Plan (Zero Waste Plan) (2015)	Adopted in April 2015, the City of Los Angeles, under the jurisdiction of Solid Waste Integrated Resources Plan, 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.
City of Los Angeles' Sustainable City pLAn (2015)	The Sustainable City pLAn is the City of Los Angeles' framework for implementing sustainability. The plan, which is updated every 4 years, includes sustainability targets aimed at increasing renewable energy, increasing local water supply, decreasing energy consumption through green building, reducing vehicle miles travelled, and increasing the proportion of housing located within 1,500 feet of public transit. The plan is intended as the city's implementation device to meet GHG reduction goals.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Executive Directive No. 5	Los Angeles' previous Mayor Eric Garcetti responded to the dry period the state experienced from 2012 to 2016 with requirements to chart the future of water conservation in the City of Los Angeles. Garcetti released Executive Directive No. 5 in 2015 to enact water use reduction goals in collaboration with LADWP. Executive Directive No.5 included the following water use reduction goals: a reduction in per capita potable water uses by 20 percent by 2017, a reduction in LADWP's purchase of imported potable water by 50 percent by 2024, and the creation of an integrated water strategy that increases local water supplies and improves water security.
City of Los Angeles Emergency Water Conservation Plan (2010)	The purpose of the Emergency Water Conservation Plan is to provide a mandatory water conservation plan to minimize the effect of a shortage of water to the city and to adopt provisions that will significantly reduce the consumption of water over an extended period of time, thereby extending the available water required for the customers of the city while reducing the hardship of the city and the general public to the greatest extent possible. This plan is contained in Chapter 12, Article I of the Los Angeles Municipal Code.
City of Los Angeles General Plan Infrastructure Systems Element (1969)	The Infrastructure Systems Element contains the city's Refuse Disposal Plan, Power System Plan, Sewerage Plan, and Water System Plan. Each plan within this element sets forth the objectives, standards, and criteria and features of the existing and future features for each plan.

Notes:
AB=Assembly Bill; C&D=Construction and Demolition; CAFE=Corporate Average Fuel Economy; C&D=construction and demolition; Cal/EPA=California Environmental Protection Agency; CALGreen=California Green Building Standards Code; CCR=California Code of Regulations; CEC=California Energy Commission; CFR=Code of Federal Regulations; CPUC=California Public Utilities Commission; DOE=Department of Energy; DTSC=Department of Toxic Substances; EIS= Environmental Impact Statement; EO=Executive Order; FRA=Federal Railroad Administration; FUA=Fuel Use Act; LADWP=Los Angeles Department of Water and Power; LASAN= Los Angeles Department of Public Works, Bureau of Sanitation; NEPA=National Environmental Policy Act; PHMSA=Pipeline and Hazardous Materials Safety Administration; RCRA=Resource Conservation and Recovery Act; U.S.= United States; U.S. EPA=Environmental Protection Act;

3.11.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:[1]

- Water supply and infrastructure
- Drainage capacity and infrastructure
- Wastewater treatment capacity and infrastructure
- Solid waste collection and landfill capacity
- Telecommunications infrastructure
- Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency

Geographic Area Considered

The Project study area is used to characterize the affected environment and the Project footprint is the geographic area considered to determine potential effects related to public utilities and energy.

Methodology

Effects are assessed locally for physical infrastructure conflicts and regionally for potential effects relative to existing utility and energy capacity and forecasts of available supplies.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Utilities

Utility companies with infrastructure located within, or adjacent to, the Project study area were identified using publicly available data. Coordination with utility service providers was performed to determine the type, size, and location of the existing electrical, gas, water, wastewater, drainage, and telecommunications infrastructure. Potential utility conflicts were identified where proposed infrastructure requires the expansion or relocation of existing utilities. Project-related

[1] Effects on cultural resources resulting from subsurface utility work during construction is considered and evaluated in Section 3.12 of this EIS. In addition, effects relative to demolition of older buildings that could generate hazardous waste, such as asbestos-containing materials and lead-based paint is addressed in Section 3.10 of this EIS.

effects would be considered adverse if the Build Alternative results in prolonged utility service interruptions.

A subsequent qualitative evaluation of the projected demand for utility services and supply infrastructure was performed using the estimated train movement quantities through 2040 and full buildout of the concourse-related improvements (see Chapter 1, Table 1-1) and compared against the projected available supply and/or capacity for each utility provider through the 2040 planning horizon. The estimated train movements support this evaluation as it provides for the estimated growth to occur at LAUS.

Solid Waste

A review of the City of Los Angeles and CalRecycle websites were conducted to identify the solid waste facilities serving the Project study area. This included a review of permitted landfill capacity, remaining capacity, and closure dates. Project-related effects would be considered adverse if the solid waste generated by the Build Alternative could not be accommodated by an existing landfill due to remaining landfill capacity or if the landfill is expected to be closed and cannot intake solid waste.

Energy

To determine potential effects on energy resources during construction, fuel and energy usage were 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 operation of the Build Alternative were quantified based on sources of energy required for operation (predominantly electricity supplied from LADWP). Project-related effects would be considered adverse if there would be any long-term change in energy use, wasteful, inefficient, and unnecessary consumption of energy during construction or operation, or if the proposed infrastructure conflicts with applicable laws and regulations for renewable energy and/or energy efficiency discussed above in the regulatory setting.

3.11.4 Affected Environment

This section describes water, drainage, wastewater, solid waste, telecommunication, and energy for the existing conditions.

Water

Within the Project study area, 18 water lines have been identified. Water service for LAUS and the surrounding area is provided by LADWP. LADWP's service area covers 472 square miles and serves a total of 4 million residents, including 731,000 active service connections (LADWP 2019). LADWP infrastructure includes 117 tanks and reservoirs, 84 pump stations, 9 ammoniation stations, 22 chlorination stations, 331 regular and relief stations, 111 system pressure zones, and 7,326 miles of distribution main pipelines. Potable water reservoirs located in the Mono Basin and Owens Valley Basins have a storage capacity of 311,000-acre feet (AF). The San Fernando

(storage capacity of 550,000 AF), Central (storage capacity of 330,000 AF), and West Coast (storage capacity of 120,000 AF) groundwater basins have a combined available storage capacity of approximately one million AF (LADWP 2020).

LADWP's water supplies totaled 497,386 AF, with 48 percent being delivered from the Los Angeles Aqueduct, 9 percent from local groundwater, 41 percent from the MWD, and 2 percent from recycled water over a 5-year average, encompassing fiscal years 2016 through 2020 (LADWP 2020). LADWP's total supplies are projected to increase from 497,386 AF in 2020 to an average year condition of 710,500 AF in 2044-45 (LADWP 2020). LADWP's Operation NEXT Water Supply Program aims to increase supply through recycled water projects in conjunction with conservation and stormwater measures brought on by the historic drought as well as water coming from MWD, Los Angeles Aqueduct, and local groundwater.

LADWP provides 4 million city residents with approximately 159 billion gallons (487,040 AF) of water annually. The average per capita residential, commercial, and industrial usage of water is 112 gallons per day (LADWP 2019). LADWP has an adopted Urban Water Management Plan (UWMP) (LADWP 2020), which outlines existing and forecast water demand and supply with provisions to maintain adequate water supplies in normal conditions, single-dry-year conditions, and multiple-dry-year conditions through the 2045 planning horizon.

Water utility infrastructure in the Project study area is described in Table 3.11-2.

Table 3.11-2. Known Water Infrastructure within the Project Study Area

Owner/Operator	Size	Type	Location[a]
Throat Segment			
LADWP	4-inch	Cast Iron	Leroy Street
LADWP	6-inch	Cast Iron	Elmyra Street
LADWP	8-inch	Cast Iron	Bloom Street
LADWP	8-inch	Cast Iron	East College Street
Concourse Segment			
LADWP	2-inch	Unknown	Platform area[b]
LADWP	20-inch	Unknown	Located within the south access road, north of the US-101.
Run-Through Segment			
LADWP	16-inch	Unknown	North Garey Street
LADWP	8-inch	Unknown	Old Center Street

Table 3.11-2. Known Water Infrastructure within the Project Study Area

Owner/Operator	Size	Type	Location[a]
LADWP	Unknown	Unknown	Old Center Street
LADWP	8-inch	Unknown	Aliso Street
LADWP	Unknown	Unknown	Aliso Street
LADWP	12-inch	Unknown	Center Street
LADWP	Unknown	Unknown	East Commercial Street
LADWP	12-inch	Unknown	East Commercial Street
LADWP	4-inch	Unknown	Jackson Street
Private	8-inch	Unknown	Center Street
LADWP	12-inch	Unknown	East First Street
LADWP	6-inch	Unknown	Metro Division 20 Site

Source: HDR 2020
Notes:
[a] Abandoned utilities are not included.
[b] There are 28 2-inch water lines dispersed throughout the concourse platform area.
LADWP=Los Angeles Department of Water and Power

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 of Los Angeles, 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 108-inch RCP within Cesar Chavez Avenue, which 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.

Wastewater

The City of Los Angeles Department of Public Works, Bureau of Sanitation (LASAN) is responsible for operating and maintaining wastewater collection and treatment systems within the city. LASAN maintains over 6,117 miles of sewer lines and 49 pumping plants in addition to four water reclamation plants (WRP) 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. 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 Plant is designed to treat 450 mgd of wastewater in dry months and up to 850 mgd of wastewater in peak wet weather flows (LASAN 2020), with an average daily treatment capacity of 275 mgd (LASAN 2016b).

Existing sewer infrastructure 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

Solid waste transportation, sorting, and disposal in the City of Los Angeles is regulated by LASAN. LASAN collects approximately 6,652 tons of solid waste per day (LACSD 2021). Solid waste collection in the city is divided 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 was reported to have disposed of 787,000 tons of solid waste in 2010, including 57 percent of solid waste from commercial, 23 percent of solid waste from residential curbside, 18 percent of solid waste from multifamily, and 2 percent of solid waste from C&D material waste (LASAN 2013).

LASAN operates the Central Los Angeles Recycling and Transfer Station (CLARTS), which is located 2.4 miles south of the Project study area and has a permitted capacity of 4,025 tons of solid waste per day. Non-recyclable materials from CLARTS are transferred to either the Scholl Canyon Landfill or Burbank Landfill Site No. 3, which are both Class III landfills. Class III landfills are municipal landfills that are not authorized to accept hazardous waste. Scholl Canyon Landfill

currently permits solid waste at a rate of 3,400 tons per day (CalRecycle 2019). According to the City of Glendale's City Council, it is estimated that the Scholl Canyon Landfill will reach its fill capacity and is expected to close in December 2025 (Glendale News-Press 2022). The Burbank Landfill Site No. 3 has a daily tonnage limit of 240 tons per day, a remaining capacity of 5,000,000 cubic yards, with an expected closure date of 2053 (County of Los Angeles Health Agency 2020; CalRecycle 2010).

Telecommunications

Telecommunications services and infrastructure within the county, including within the City of Los Angeles, are predominantly provided by the following publicly traded telecommunications companies:

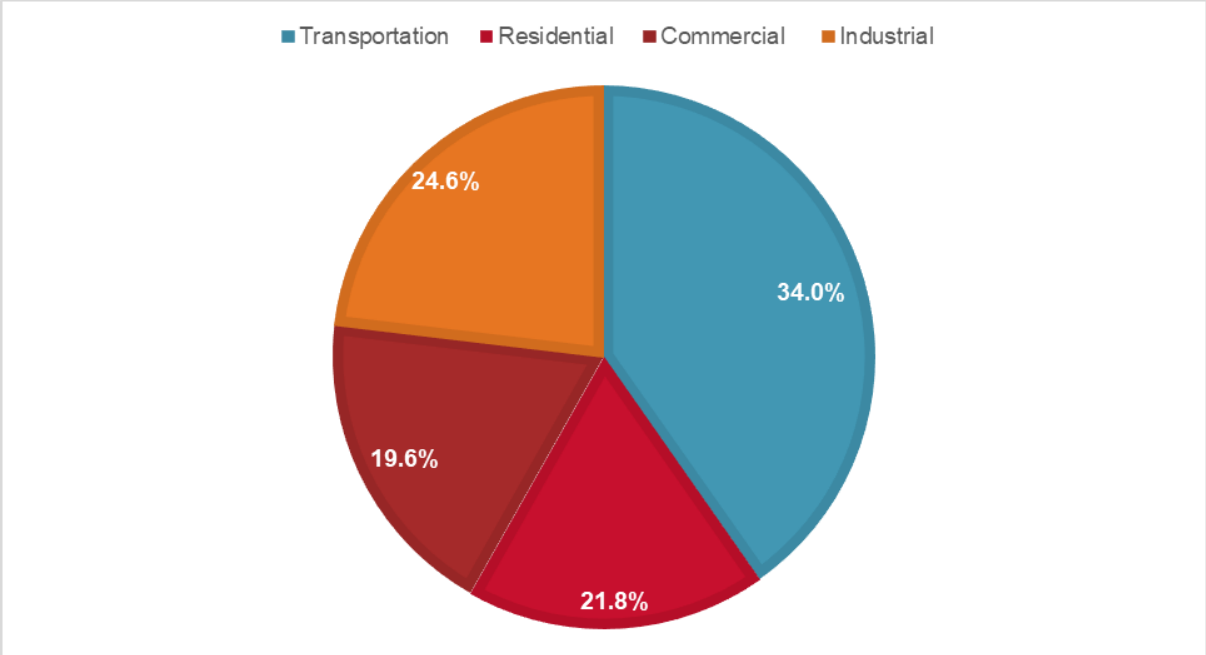
- AT&T
- Charter Communications
- DirecTV
- Dish Network
- Frontier Communications
- Verizon
- Sprint
- Quest
- WU
- Zayo

Preliminary coordination with the respective telecommunication providers resulted in the identification of numerous telecommunications lines within the Project study area.

Energy

According to the Energy Information Administration (EIA), California, although one of the largest states, has one of the lowest per capita total energy consumption levels in the country (EIA 2022). According to the EIA, California's transportation sector energy consumption totaled approximately 2,355 trillion British thermal units (btu) in 2020, while residential sector, commercial sector, and industrial sector consumption totaled approximately 1,508 trillion btu, 1,701 trillion btu, and 1,358 trillion btu, respectively (EIA 2021). The relative proportion of energy consumption by sector is shown on Figure 3.11-1.

Figure 3.11-1. Energy Consumption in California by End-Use Sector in 2020



Source: EIA 2021

California's electricity is generated from a variety of sources, including natural gas, nuclear power, hydroelectric power, wind energy, solar, and coal. Table 3.11-3 shows California's net electricity generation by energy source for 2021 (CEC 2022).

Table 3.11-3. California's Electricity Generation by Energy Source (Gigawatt hours)

Energy Source	2021
Hydroelectric	14,566
Nuclear	16,477
Coal	303
Oil	39
Natural Gas	97,350
Geothermal	11,116
Biomass	5,439
Wind	14,216
Solar Photovoltaic	31,614

Table 3.11-3. California's Electricity Generation by Energy Source (Gigawatt hours)	
Energy Source	**2021**
Solar Thermal	2,065
Petroleum Coke	204
Waste Heat	178
Total In-State Generation	***193,569***
Net Imports	83,636
Total System Electric Generation	**277,205**

Source: CEC 2022

Although transportation constitutes roughly 37.8 percent of California's total energy consumption, passenger rail as a mode of transportation consumes significantly less energy than single-user vehicles under existing conditions (EIA 2021).

Metro utilizes energy from electricity, natural gas, diesel, and gasoline. According to the *2019 Metro Energy and Resource Report*, rail propulsion utilizes a comparatively small proportion of Metro's total energy consumption. In 2018, rail propulsion utilized 6.4 megajoules of energy per revenue mile and facilities utilized 3.9 megajoules of energy per revenue mile, whereas vehicle fuel for Metro's fleet utilized approximately 41.9 megajoules of energy per revenue mile (Metro 2019).

Electricity

Electricity to LAUS is provided by LADWP, which also supplies electric power to the city's 1.4 million residents. According to the CEC, LADWP's total electricity consumption in fiscal year 2021-2022 totaled more than 21,130 gigawatt hours (CEC 2018a).

Based on demand models for LADWP, railroad transportation's total energy demand within the LADWP's planning area shows incremental growth through 2030, as shown in Table 3.11-4.

Table 3.11-4. Railroad Transportation's Energy Demand Forecast for the LADWP's Service Area		
Year	**Total Energy Demand (gigawatt hours)**	**Percentage Growth from Previous Year**
2016	19.99	—
2017	19.39	(3.00)

Table 3.11-4. Railroad Transportation's Energy Demand Forecast for the LADWP's Service Area

Year	Total Energy Demand (gigawatt hours)	Percentage Growth from Previous Year
2018	17.90	(7.70)
2019	19.63	9.70
2020	19.71	0.40
2021	19.78	0.36
2022	19.85	0.35
2023	19.92	0.35
2024	19.99	0.35
2025	20.05	0.30
2026	20.12	0.35
2027	20.18	0.30
2028	20.24	0.30
2029	20.30	0.30
2030	20.35	0.25
Total growth 2016 through 2030	**—**	**2.61**

Source: CEC 2020

As shown in Table 3.11-4, despite a small surge in the railroad transportation sector's electricity demand from 2018 to 2019 (approximately 9.70 percent growth), railroad electricity demand within the LADWP planning area is anticipated to increase incrementally and consistently through 2030.

Electric power infrastructure in the Project study area includes numerous underground and overhead power lines that are owned and operated by LADWP. Major electrical power infrastructure within the Project study area includes 66-kilovolt overhead power lines along Vignes Street, Cesar Chavez Avenue, Lyon Street, and Commercial Street, and a 230-kilovolt overhead power line runs along the west bank of the Los Angeles River.

Natural Gas

Natural gas is the most consumed energy source in California. As shown in Table 3.11-3, natural gas comprised approximately 35 percent of California's total electricity generation in 2021 (CEC 2022). Natural gas in the Project study area is provided by SoCalGas. Major gas distribution infrastructure within the Project study area is shown in Table 3.11-5.

Table 3.11-5. Natural Gas Infrastructure Within the Project Study Area

Owner/Operator	Size	Location[a]
Throat Segment		
SoCalGas	Unknown	Leroy Street
SoCalGas	¼-inch	Leroy Street, leading underneath existing railroad ROW
Concourse Segment		
SoCalGas	Unknown	Located within the south access road, north of the US-101
Run-Through Segment		
SoCalGas	Unknown	East Commercial Street
SoCalGas	8-inch	East Commercial Street
SoCalGas	6-inch	East Commercial Street
SoCalGas	4-inch	North Garey Street
SoCalGas	2-inch	Center Street
SoCalGas	2-inch	Aliso Street
SoCalGas	8-inch	Undergrounded between East Commercial Street and Aliso Street
SoCalGas	8-inch	Center Street
SoCalGas	4-inch	Center Street
SoCalGas	4-inch	Center Street
SoCalGas	Unknown	Center Street
SoCalGas	Unknown	Center Street
SoCalGas	Unknown	Center Street

Table 3.11-5. Natural Gas Infrastructure Within the Project Study Area

Owner/Operator	Size	Location[a]
SoCalGas	2-inch	Center Street
SoCalGas	8-inch	East Temple Street
SoCalGas	20-inch	East Temple Street
SoCalGas	30-inch	Jackson Street
SoCalGas	Unknown	Jackson Street
SoCalGas	Unknown	Ducommun Street
SoCalGas	12-inch	Parallel and west of the existing track segment between US-101 and East 1st Street

Source: HDR 2020
Notes:
[a] ***Abandoned utilities are not included.***

3.11.5 Environmental Consequences

TOPIC 3.11-A	Water supply and infrastructure

No Action Alternative

As discussed in Section 3.11.4 above, water service for LAUS and the surrounding area is provided by LADWP. The No Action Alternative would not include any Project-related changes to existing environmental conditions. Water service for LAUS would continue to be provided by LADWP. The No Action Alternative would not include construction of any Project-related improvements, therefore there would be no additional water demand related to construction. The No Action Alternative would result in slight increases in demand for water at LAUS as an increase in passengers is expected through 2040.

The Project study area is within the City of Los Angeles' DCP area. As described in the Final EIR for the DCP, implementation of the DCP is forecast to increase water demand in the Downtown Plan area by approximately 25 mgd (28,000 acre-feet of water per year [AFY]), representing an increase of 90 percent from existing conditions. However, based on the City's UWMP, current water supplies, planned future water conservation efforts, and planned future water supplies will enable LADWP to reliably provide water that meets the demands of the City for a 25-year planning horizon (through 2040) (Los Angeles Department of City Planning 2022a).

Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad

ROW. Changes to water supply and water infrastructure from other proposed projects could incrementally affect water resources, depending on the proposed project type and water demand. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which water infrastructure and supply are disrupted in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill would be subject to CEQA and NEPA reviews and applicable local entitlements, as applicable. In addition, new water service requests, either temporary or permanent will be subject to the Water Service Request process with the LADWP to ensure there is adequate water supply and conveyance infrastructure for long term operations within its jurisdiction (LADWP 2023b). Therefore, no direct or indirect effects during construction or operation would result from the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would require the use of locally available water supplies from 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.

Assuming that all Project elements were constructed concurrently, construction of the Build Alternative would require up to 63,000 gallons of water per day or 70.5 AFY (HDR 2016). Based on this anticipated water demand, and in the context of the supplies available to LADWP (up to 642,600 AF in 2025 and 678,800 AF in 2035),[2] water demand for construction of the Build Alternative would represent a nominal 0.011 and 0.010 percentage of LADWP's available supply in 2025 and 2035, respectively.[3] Additionally, the contractor would be required to implement Metro's General Management Water Use and Conservation Policy, which outlines guidance for potable water use during construction. Construction activities, although occurring over a multiyear period, would be temporary in nature.

During construction of the Build Alternative, several LADWP water utility lines in Segments 1 and 3 of the Project study area would be abandoned, relocated, or extended to accommodate proposed infrastructure. Abandonment, relocation, or extension of water utility lines would not decrease service capacity in the Project study area because other water utility lines would be made available to support existing land uses. Changes to water utility infrastructure would be designed and constructed to increase capacity and improve service. However, construction of the

[2] The 2020 UMWP for LADWP assessed water supply reliability using three different conditions: single dry year, average year conditions, and multiple dry year conditions. According to the UWMP, the water supply for average year conditions has the highest probability of occurring. The water supply values identified above are for the average year conditions.

[3] 70.5 AFY / 642,600 AF * 100 = 0.011 percent in 2025.

70.5 AFY / 678,800 AF * 100 = 0.010 percent in 2035.

Build Alternative could require the temporary shutdown of water utility lines within the Project study area, which may result in temporary service disruptions to LADWP's industrial, commercial, and residential customers. Construction-related disruptions to utility service providers, including LADWP, would be coordinated with the respective utility providers in advance to distribute public notification prior to temporary service shutdowns and to minimize interruptions to the greatest extent feasible or, if feasible, to avoid interruptions altogether.

Based on the above considerations, sufficient water supplies are expected to be available throughout construction of the Build Alternative. Although impacts on water conveyance infrastructure would occur, they would be intermittent and temporary in nature. No direct adverse effect would occur.

Direct Effects – Operations

Potable water throughout operations would be provided by LADWP. Projected water demand was determined based on the increase in demand over existing conditions and the anticipated increase in train volumes and associated passenger demand from implementation of new run-through track infrastructure. The incremental increase in water demand associated with operation of the Build Alternative would occur over at least 20 years in correlation to the forecasted increase in train trips and associated ridership at LAUS.

The projected total water usage from new Metrolink, Amtrak, and HSR passengers is estimated to be approximately 30 AFY in the full build-out condition (2031) and approximately 47 AFY in 2040, both of which represent an increase above the 2016 baseline conditions of approximately 20 AFY. The water usage estimate for 2026, 2031, and 2040 is shown in Table 3.11-6.

Table 3.11-6. Forecast Project Operational Water Demand Through 2040

Year	Project Phase	Anticipated Total Operational Water Demand (AFY)	LADWP Projected Water Supply (AFY)	Forecast Project Water Demand as a Proportion of LADWP's Projected Total Supply
2026	Interim Condition	25	642,600	0.0039 percent[a]
2031	Full Build-Out Condition	30	660,200	0.0045 percent[b]
2040	2040 (horizon year)	47	697,800	0.0067 percent[c]

Notes:
[a] Projected water demand as a percentage of LADWP's total projected supply was calculated using the LADWP's 2025 supply forecast of 642,600 AF.
[b] Projected water demand as a percentage of LADWP's total projected supply was calculated using the LADWP's 2030 supply forecast of 660,200 AF.
[c] Projected water demand as a percentage of LADWP's total projected supply was calculated using the LADWP's 2040 supply forecast of 697,800 AF.

As shown in Table 3.11-6, operation of the Build Alternative would require 25 AFY, 30 AFY, and 47 AFY of water in 2026, 2031, and 2040, respectively. However, the LADWP's water supply forecast through the 2040 planning horizon estimates approximately 642,600 AF, 660,200 AF, and 697,800 AF of available water in 2025, 2030, and 2040, respectively. As such, water demand for the operation of the Build Alternative would represent a nominal proportion of LADWP's available water supplies through 2040. [4]

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, and concourse-related improvements would be designed to comply with the Metro Energy and Sustainability policy to achieve at least a LEED® Silver rating. The Build Alternative would be consistent with existing and planned land uses (Section 3.2, Land Use and Planning) and, as such, is also anticipated to have been accommodated for within the LADWP's UWMP projections for water supply and demand through 2040.

Based on these considerations, sufficient water supplies are available from existing LADWP entitlements and resources to support operation of the Build Alternative. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The water demand estimates provided above include all direct and indirect water demands that would be required to implement the Build Alternative (Construction and Operation). The Build Alternative accommodates future train movements that operators have envisioned as part of the SCORE Program and 2018 California State Rail Plan. Metrolink and Amtrak's maintenance program, which includes train washing, would occur off-site. The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional water demand may occur; however, LADWP is anticipated to be able to accommodate future demand through 2040. No indirect adverse effect would occur.

TOPIC 3.11-B	Drainage capacity and infrastructure

No Action Alternative

As discussed in Section 3.11.4 above, there are existing drainage infrastructure within the Project study area. The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-

[4] Train washing operations would be conducted off site at an existing separate facility and would not measurably increase water usage compared to existing conditions. This type of water use is not included in this estimate.

related improvements, therefore there would be no grading and excavation activities that could have direct impacts on drainage capacity and infrastructure. There would also be no increase in impervious surfaces that could cause a decrease in infiltration and increase to the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure.

The Project study area is within the City of Los Angeles' Downtown DCP area. As described in the Final EIR for the DCP, reasonably anticipated growth under the DCP would not cause a substantial increase in peak flow rates or volumes that would exceed the capacity of existing stormwater facilities. In addition, compliance to the City's LID Ordinance would ensure that any future development resulting from implementation of the DCP would not require construction of new stormwater drainage facilities and or expansion of existing facilities beyond specific improvements needed for individual development projects (Los Angeles Department of City Planning 2022a).

Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad ROW. Changes to drainage capacity and infrastructure from other proposed projects could incrementally affect drainage, depending on the proposed project type and volume of stormwater. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which stormwater infrastructure and drainage are disrupted in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable. In addition, most new construction within the City of Los Angeles would need to obtain a General Permit for Discharges of Storm Water and submit project documents for review to the City of Los Angeles through the LID Plan Check Portal, for approval to ensure that new development complies with the city's stormwater management strategy (City of Los Angeles 2023). Therefore, no direct or indirect effects during construction or operation would result from the No Action Alternative.

Build Alternative

Direct Effects – Construction

As described in Section 3.8, Floodplains, Hydrology, and Water Quality, the Build Alternative would require substantial amounts of grading and excavation, which could have direct impacts on prevailing drainage patterns, as well as on the rate and volume of stormwater runoff entering the public storm drain system. Construction-related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. Effects could be adverse if not properly managed. Implementation of Mitigation Measure HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) requires the preparation and implementation of a SWPPP by a Qualified SWPPP Developer. The SWPPP will include construction site BMP to reduce the volume and velocity of stormwater runoff. Construction site BMPs designated for soil stabilization and sediment control, including, but not limited to, temporary measures such as stabilized construction

entrances/exits, a move in/move out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures, required as part of the SWPPP would actively control sediments and stormwater discharges to the public storm drain system during construction of the Build Alternative. Upon implementation of Mitigation Measure HWQ-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

As stated in Section 3.8, Floodplains, Hydrology, and Water Quality, operation of the Build Alternative would result in a 5.44-acre increase in the total area of impervious surfaces within the Project study area. An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. This is considered an adverse effect. Mitigation Measures HWQ-2, HWQ 3, and HWQ 4 (described in Section 3.8 and summarized below) include provisions for post construction BMPs to minimize the potential for adverse operations effects on storm drain systems.

- Mitigation Measure HWQ-2 requires Metro to comply with the provisions of the Caltrans MS4 Permit (Order Number 2022-0033-DWQ) and Time Schedule Order (Order Number 2022-0089-DWQ), and any applicable provisions of the Caltrans SWMP for long-term BMPs.

- Mitigation Measure HWQ-3 requires Metro to comply with the NPDES General Permit for Waste Discharge Requirements for Stormwater Discharges from Small MS4 (Order No. 2013-0001-DWQ, NPDES No. CAS000004), (known as the Phase II permit), for the portion of the project outside Caltrans ROW.

- Mitigation Measure HWQ-4 requires Metro to comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004) (known as the Phase I Permit). Metro will be required to 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.

The Build Alternative includes capture and use BMPs (cistern), bioretention BMPs and impermeable liners to convey the underdrains, and structural BMPs (Contech Jellyfish Filter) that would provide permanent stormwater control and treatment. These BMPs are described in detail in Section 4.0 of the *Link US Water Quality Assessment Report* (Appendix J of this EIS).

Post-construction BMPs incorporated into the design are outlined in detail in Section 3.8, Floodplains, Hydrology, and Water Quality. Additionally, 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. Implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) would minimize potential stormwater runoff resulting from an increase in impervious surface area by implementing BMPs to capture or divert stormwater resulting from the Build Alternative (see Section 3.8, Floodplains, Hydrology, and Water Quality, for details). Upon implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4, no direct adverse effects would occur during operation.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional demand for drainage capacity may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed drainage capacity. Furthermore, proposed infrastructure would be constructed in accordance with standard engineering practices, including the 2019 CBC and compliance to NPDES Waste Discharge Requirements. Therefore, no indirect effects related to exceeding the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff are anticipated to occur during construction or operations. No indirect adverse effect would occur.

TOPIC 3.11-C	Wastewater capacity and infrastructure

No Action Alternative

As discussed in Section 3.11.4 above, there is existing sewer infrastructure within the Project study area. The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-related improvements; therefore, it would not require the relocation, reconfiguration, and/or replacement of sanitary sewer pipelines and there would not be any disruption to current sewer service. The No Action Alternative would result in slight increases in demand for wastewater service at LAUS as an increase in passengers is expected through 2040. However, the Hyperion Treatment Plant has additional treatment capacity during normal and dry conditions and adequate wastewater services would be available to support the No Action Alternative.

The Project study area is within the City of Los Angeles' Downtown DCP area. As described in the Final EIR for the DCP, implementation of the DCP would increase demand for wastewater collection and treatment. However, it was noted that the Hyperion WRP would be able to adequately treat sewage and the treatment requirements of the RWQCB would not be exceeded. In addition, the City of Los Angeles is proactively undertaking capital improvement projects to enhance and expand capacity of treatment plants in the City (Los Angeles Department of City Planning 2022a).

Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad ROW. Changes to wastewater capacity and infrastructure from other proposed projects could incrementally affect wastewater, depending on the proposed project type and level of disturbance. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which wastewater infrastructure is disrupted in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill would be subject to CEQA and NEPA reviews, as applicable. Therefore, no direct or indirect effects during construction or operation would result from the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would involve relocation, reconfiguration, and/or replacement of sanitary sewer pipelines within the limits of the Project footprint. Prior to temporary interruption of sewer service, existing sanitary sewer lines would be redirected so that service can be continued and maintained during construction. Existing utilities within the platform area would be relocated and placed within access roads and utility tunnels to provide more efficient access for future maintenance. Additionally, Metro would coordinate potential service disruptions with the applicable service providers, including LASAN and the LABOE, to avoid or minimize disruptions to surrounding customers. No direct adverse effect would occur during construction.

Direct Effects – Operations

Operation of the Build Alternative would result in slight increases in wastewater generation rates at LAUS as an increase in passengers is expected through 2040 (as discussed in Chapter 1.0, Purpose and Need). However, operation of the Build Alternative would not increase the demand for wastewater treatment facilities. The Build Alternative does not include construction of any habitable, residential structures that would contribute to significant increases in local demand for wastewater treatment services and infrastructure. Passengers use LAUS for transportation and are not expected to contribute substantial increases in wastewater to the public sewer system above existing conditions. Additionally, the Hyperion Treatment Plant currently treats an average of 275 mgd of wastewater (LASAN 2016b) and has the capacity to treat 450 mgd of wastewater in dry months and 850 mgd of wastewater in peak wet weather flows (LASAN 2020). As such, the Hyperion Treatment Plant has sufficient additional capacity to treat approximately 175 mgd of wastewater in dry months and 575 mgd in wet months under existing conditions. Therefore, because the Build Alternative would not increase the demand of wastewater treatment facilities and the Hyperion Treatment Plant has additional treatment capacity during normal and dry conditions, adequate wastewater services would be available throughout operation of the Build Alternative. No direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional demand for sanitary sewer capacity may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed sanitary sewer capacity. No indirect adverse effects would occur during construction or operation.

TOPIC 3.11-D	Solid waste collection and landfill capacity

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. LASAN would continue to collect solid waste at LAUS. The No Action Alternative would not include construction of any Project-related improvements; therefore, no construction waste would be generated. Railway passengers at LAUS are expected to continue to generate a negligible amount of solid waste. Solid waste would continue to be disposed of at the Scholl Canyon Landfill (until it closes in December 2025) or Burbank Landfill Site No. 3. Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad ROW. Changes to solid waste collection and landfill capacity and infrastructure from other proposed projects could incrementally affect solid waste collection and landfill capacity, depending on the proposed project type and solid waste generation. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which solid waste collection and landfill capacity are disrupted in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill would be subject to CEQA and NEPA reviews, as applicable. In addition, new development within the City of Los Angeles would be required to comply with applicable ordinances to divert solid waste from landfills including the Los Angeles C&D Waste Recycling Ordinance and CALGreen. Therefore, no direct or indirect effects would result from the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would generate construction waste from the removal of existing infrastructure (e.g., roadways, track work, concrete, etc.), including concrete, brick, asphalt, railway basalt, and other construction waste. The Build Alternative is estimated to generate approximately 300,319 cubic yards of construction solid waste (HDR 2023). During construction of the Build Alternative, the contractor would be required to adhere to federal, state,

and local regulations for solid waste disposal, such as Senate Bill (SB) 1374, the Los Angeles C&D Waste Recycling Ordinance and CALGreen regarding solid waste materials and resource efficiency. After recyclable materials are removed from the C&D waste, non-recyclable materials from construction would be transferred to either the Scholl Canyon Landfill or Burbank Landfill Site No. 3. The contractor is required to divert up to 75 percent of all C&D waste from the Scholl Canyon or Burbank Site No. 3 landfills.

The Scholl Canyon Landfill is a Class III landfill that has an estimated closure date in December 2025 (Glendale News-Press 2022). Due to Scholl Canyon Landfill's projected closure date in 2025 (during Project construction), the remainder of C&D waste and non-recyclable materials from construction would be transferred to the Burbank Landfill Site No. 3. The Burbank Landfill Site No. 3 is also a Class III landfill that has a daily tonnage limit of 240 tons per day, a remaining capacity of 5,000,000 cubic yards, and an expected closure date of 2053 (County of Los Angeles Health Agency 2020; CalRecycle 2010). It is estimated that the total volume of construction waste would be approximately 300,319 cubic yards before recycling (approximately 6 percent of the total remaining capacity of the Burbank Landfill Site No. 3). After diversion, construction waste would occupy approximately 4.5 percent of the total remaining capacity of the Burbank Landfill Site No. 3. Solid waste produced during construction of the Build Alternative could be accommodated by existing landfills. No direct adverse effect would occur during construction.

Direct Effects – Operations

Proposed infrastructure associated with the Build Alternative would not generate a substantial amount of solid waste throughout operations. Solid waste generated throughout operations would typically include household waste (such as paper, cardboard, and plastics) and other debris that would be disposed of by rail passengers or that may accumulate along the railroad ROW. Railway passengers are expected to generate a negligible amount of solid waste as compared to existing conditions.

Disposal of solid waste would occur during ongoing maintenance activities and in accordance with applicable federal, state, and local regulations for solid waste disposal. As standard practice during ongoing operations, materials would be segregated prior to disposal at a certified recycling facility. Additionally, the existing landfill capacity through the Horizon Year (2040) would be adequate for the solid waste generated from ongoing maintenance activities along the railroad ROW. No direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional solid waste capacity may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the

needed solid waste capacity. No direct or indirect adverse effect would occur during construction or operation.

TOPIC 3.11-E	Telecommunications Infrastructure

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-related improvements; therefore, it would not require the relocation of telecommunication infrastructure and there would not be any disruption to current service.

The Project study area is within the City of Los Angeles' Downtown DCP area. As described in the Final EIR of the DCP, implementation of the DCP would generate telecommunications demand and telecommunication requirements for the DCP are expected to evolve as development increases and technologies change. Additional telecommunications facilities or upgrades to existing facilities to meet DCP area demands would be undertaken by private service providers in accordance with applicable federal, state, and local regulations (Los Angeles Department of City Planning 2022a).

Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad ROW. Changes to telecommunications infrastructure from other proposed projects could incrementally affect telecommunications infrastructure, depending on the proposed project type and level of disturbance. The context and intensity of effects would vary based on the location of other proposed developments and the extent to which telecommunications infrastructure are disrupted in the Project study area. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill would be subject to CEQA and NEPA reviews, as applicable. Therefore, no direct or indirect adverse effect would result from the No Action Alternative.

Build Alternative

Direct Effects – Construction

Existing telecommunication infrastructure within the Project study area is located underground or overhead, generally co-located on poles with electrical lines. During construction of the Build Alternative, existing telecommunications infrastructure would be protected in place to the greatest extent feasible or temporarily relocated to accommodate construction activities. Where infeasible to maintain telecommunication service during the construction period, disruptions may occur for a temporary duration. Coordination with the respective telecommunication providers would occur during final engineering design to avoid and/or reduce potential conflicts during construction. No direct adverse effect would occur during construction.

Direct Effects – Operations

Telecommunications infrastructure is present throughout the Project study area, and long-term operation of the Build Alternative would not result in operational impacts to telecommunications companies because telecommunication lines would be buried under access roads and placed within utility tunnels to protect the facilities and provide for future maintenance. No direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional telecommunications infrastructure may be required. However, coordination with telecommunication companies would take place prior to, and during, construction. No indirect adverse effect would occur.

TOPIC 3.11-F	Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency

No Action Alternative

As discussed in Section 3.11.4 above, there are existing electricity and natural gas infrastructure in the Project Study Area. The No Action Alternative would not include any Project-related changes to existing environmental conditions. LADWP would continue to provide electricity service and SoCalGas would continue to provide natural gas service to LAUS. Reasonably foreseeable projects, as described in Section 3.16, Cumulative Effects, would still occur under the No Action Alternative along with the other maintenance activities in the railroad ROW. Changes related to energy demand and infrastructure from other proposed projects could incrementally affect energy demand and infrastructure, depending on the proposed project type and energy demand.

As discussed in Chapter 1.0, Purpose and Need, population in Los Angeles County is projected to grow. An increase in population would increase the demand for energy. Peak- and base-period electricity demand would increase and require additional generation and transmission capacity. According to the CEC Demand Analysis Office (CEC 2018a), the average annual growth rate for statewide electricity demand between 2017 and 2030 is forecast to increase between 0.30 percent (low energy demand) and 1.52 percent (high energy demand). The CEC analysis included forecasts that considered impacts (beneficial and adverse) of approved efficiency programs, climate change, electric vehicle use, other electrification projects (including port projects and HSR), and demand response (time-of-use pricing) programs.

The context and intensity of effects would vary based on the location of other proposed developments and the extent to which energy demand and infrastructure are disrupted in the Project study area. Although other projects within the Project study area and within the City of Los Angeles would continue to be constructed, each project would be required to undergo separate environmental review to adhere to increasingly stringent operational energy efficiency standards and legislation as jurisdictions strive to meet their respective sustainability goals. Therefore, no direct or indirect adverse effects would occur from the No Action Alternative.

Build Alternative

Direct Effects – Construction

During construction of the Build Alternative, consumption of energy would occur in two general forms: fuel energy consumed by construction vehicles and other 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 activities, including transporting construction materials and supporting majoring staging areas, field offices, and security lighting. The Build Alternative would require approximately 495,238 gallons of gasoline and 3,832,698 gallons of diesel in total. In Section 3.5, Air Quality and Greenhouse Gas, *Table 3.5-5. Annual Construction Emissions After Mitigation,* details the air quality impacts associated with operating construction equipment. From a consumption perspective, the use of diesel and gasoline for construction are comparable to other urban construction projects, would be temporary in nature, and would not represent a substantial, permanent, or unnecessary use of energy. Further, as described in Section 3.2, Land Use and Planning, Section 3.2.5 *Topic D Conflict with Land Use Plans and Policies or Local Lan Use Controls*, the Build Alternative is generally consistent with the federal, regional, state, and local plans, policies, and controls relative to expansion of transportation options and increased rail service, by reducing energy demand from taking commuters off the road. In addition to supporting Metrolink's implementation of the SCORE Program, the Build Alternative is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the following:

- 2050 California Transportation Plan (Caltrans 2021)
- 2020-2045 RTP/SCS: Connect SoCal (SCAG 2020)
- 2018 California State Rail Plan (Caltrans 2018)
- 2022 Business Plan (CHSRA 2022)

To minimize energy consumption, as standard practice on all Metro projects, the construction contractor would be required to implement standard BMPs in accordance with Metro's Green Construction Policy. The Green Construction Policy was updated in 2018, requiring contractors to use renewable diesel for all diesel engines to reduce the negative health impacts from diesel exhaust. Additionally, implementation of Mitigation Measure AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) also requires the use of bulk renewable diesel fuel to reduce

energy consumption. 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; and
- 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. Construction activities would not affect the availability of energy resources or conflict with initiatives for renewable energy or energy efficiency.

Existing utility services would be maintained throughout construction by relocating facilities into access roads and utility tunnels to protect the facility during construction and to provide for increased efficiency for future maintenance activities. Modifications to utility infrastructure would be limited to relocations, and no new substations would be required to construct the Build Alternative. However, during construction, one natural gas/petroleum fuel pipeline would be impacted along Commercial Street going north under US-101. This pipeline is proposed to be lowered in place and encased within the Project footprint and the run-through track ROW limits. Undergrounding and trenching activities involved in the lowering of this pipeline would not result in substantial disruptions or affect the service of the existing infrastructure as all services would be maintained throughout the construction period. Furthermore, any disruptions of utility service would be temporary and minimized to the maximum extent feasible through coordination with public utility providers. Coordination with LADWP and SoCalGas would be required during final engineering design to avoid and/or reduce potential conflicts during construction. Therefore, energy use would increase temporarily during construction, but a substantial demand on regional energy supply and new infrastructure would not be required. No direct adverse effect would occur during construction.

Direct Effects – Operations

Operation of the track improvements as part of the Build Alternative would efficiently utilize energy resources and would not conflict with initiatives for renewable energy or energy efficiency. Electricity would be required throughout operations to provide lighting along the track alignment, at the concourse, and under bridges for safety purposes. In context with all of Metro's facilities systemwide, proposed transportation infrastructure as part of the Build Alternative is not expected to result in a substantial increase in demand for energy that would require construction of new gas or electric facilities or expansion of existing facilities.

The concourse-related improvements would be designed to comply with applicable mandatory provisions of the most recent CALGreen Code, in accordance with the City of Los Angeles Green

Building Code. CALGreen 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 concourse-related improvements would be designed to comply with the Metro Energy and Sustainability policy and achieve at least a Leadership in LEED® Silver rating. The LEED® rating accounts for sustainable sites, energy efficiency, water efficiency, materials and resource use, indoor environmental quality, emissions, and environmental management.

Proposed design features, such as reflective roofing and skylights, would also assist in the reduction of energy demands. The sustainability framework of the concourse-related improvements targets energy efficiency, water conservation, well-being, site planning, and resource management. Given the sustainability initiatives that are planned to be incorporated into concourse design, a negligible effect on energy resources is expected. Operation of the concourse would not result in unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency. No direct adverse effect would occur during operations.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and the 2020 RTP/SCS. Over time, additional energy demand may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed energy demand.

The Build Alternative would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources. Additionally, 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 Section 3.5, Air Quality and Global Climate Change, the Build Alternative is necessary to implement the goals and objectives of multiple planning documents such as the SCORE Program that guide future growth in the region. Further, capacity enhancements associated with the Build Alternative would indirectly reduce the number of vehicles on the road and indirectly alter regional on-road motor vehicle travel. This would reduce gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits. As discussed in Section 3.5, Air Quality and Global Climate Change, the increase in passenger transit use over vehicles and increased rail system efficiency would contribute to achieving state and regional air quality and GHG reduction goals. Indirect effects of the Build Alternative relative to energy resources would be beneficial.

3.11.6 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on public utilities and energy.

AQ-2 **Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment.** See Section 3.5, Air Quality and Global Climate Change, for details.

HWQ-1 **Prepare and Implement a SWPPP**. See Section 3.8, Floodplains, Hydrology, and Water Quality, for details.

HWQ-2 **Final Water Quality BMP Selection (Caltrans ROW).** See Section 3.8, Floodplains, Hydrology, and Water Quality, for details.

HWQ-3 **Final Water Quality BMP Selection (Railroad ROW).** See Section 3.8, Floodplains, Hydrology, and Water Quality, for details.

HWQ-4 **Final Water Quality BMP Selection (City of Los Angeles).** See Section 3.8, Floodplains, Hydrology, and Water Quality, for details.

3.11.7 NEPA Impact Summary

This section summarizes the effects related to public utilities and energy of the No Action Alternative and compares them with the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topics 3.11-A through 3.11-F, under the No Action Alternative, other infrastructure and utility-related projects would be implemented. As previously noted, the Project study area is within the City of Los Angeles' Downtown DCP area. The Final EIR for the DCP describes how water supply, drainage capacity, wastewater capacity, and associated infrastructure would be accounted for in the area. Demand for water supply and wastewater treatment would increase, however, current water supplies will be adequate to enable LADWP to provide water through 2040 and the Hyperion WRP would be able to adequately treat sewage. Reasonably anticipated growth under the DCP would not cause a substantial increase in peak flow rates or volumes that would exceed the capacity of existing stormwater facilities. Additionally, implementation of the DCP would also involve additional telecommunications facilities or upgrades to existing facilities to meet DCP area demands as development increases in the surrounding area. Furthermore, each project would be subject to separate environmental review and preconstruction coordination requirements with utility providers. Peak- and base-period electricity demand would increase and require additional generation and transmission capacity over time. No adverse effects related to public utilities and energy would occur under the No Action Alternative.

Build Alternative

As discussed under Topic 3.11-A, sufficient water supplies are expected to be available, and water demand would represent a nominal proportion of LADWP's available water supplies through 2040 to support construction and operation of the Build Alternative. During construction, temporary shutdown of water utility lines may result in service disruptions. However, any construction-related disruptions would be coordinated with the respective utility providers in advance and the affected public would be notified. The impacts of other projects would be addressed during CEQA and NEPA environmental reviews and entitlement processes, and measures may be required to avoid, minimize, and/or mitigate the potential for adverse effects.

As discussed under Topic 3.11-B, the Build Alternative would result in substantial grading and excavation during construction and would increase the total area of impervious surfaces during operations. As such, adverse impacts on the capacity of the existing storm drain infrastructure would occur if not properly managed. Capture and use, bioretention, and structural BMPs would provide stormwater control and treatment to minimize adverse effects during operation of the Build Alternative. Upon implementation of the following mitigation measures, no adverse direct effect would occur during construction and operation:

- Mitigation Measure HWQ-1 requires that a SWPPP be prepared and implemented.
- Mitigation Measure HWQ-2 requires post-construction BMPs within Caltrans ROW.
- Mitigation Measure HWQ-3 requires post-construction BMPs within railroad ROW.
- Mitigation Measure HWQ-4 requires post-construction BMPs within the City of Los Angeles ROW.

As discussed under Topic 3.11-C, relocation, reconfiguration, and/or replacement of sanitary sewer pipelines in the Project study area would occur during construction. In addition, operations would result in slight increase in wastewater generation rates. However, Metro would coordinate potential service disruptions with service providers, and the Build Alternative does not include construction of habitable or residential structure that could contribute to significant increases to wastewater treatment service demands. As such, no direct adverse effects on wastewater treatment capacity and infrastructure would occur during construction of the Build Alternative.

As described under Topic 3.11-D, construction activities would generate construction waste, such as concrete, brick, asphalt, and railway basalt. Operations would generate negligible amounts of solid waste (such as paper, cardboard, and plastics). All waste generated during construction and operations could be accommodated by existing landfills, and no adverse effects related to soil waste collection or landfill capacity would occur.

As discussed under Topic 3.11-E, construction activities may result in temporary disruptions to telecommunication infrastructure. However, coordination with telecommunication providers would reduce potential conflicts and no operational impacts to telecommunication lines would occur once constructed. As such, no adverse effects on telecommunications infrastructure during construction or operation would occur.

As discussed under Topic 3.11-F, the Build Alternative would require fuel energy for vehicles and equipment and bound energy for manufacturing and processing of construction material. However, standard BMPs and the use of bulk renewable diesel fuel (as required under Mitigation Measure AQ-2) would minimize energy consumption. No new substations would be required, and utility service disruptions would be minimal. The use of fuel during construction would be comparable to other urban construction projects and would not represent a substantial, permanent, or unnecessary use of energy. Operation of the track improvements and concourse related improvements would comply with sustainability initiatives, resulting in a negligible effect on energy resources. The Build Alternative would accommodate future increases in rail/transit, reduce personal vehicles on the road, and reduce gasoline and diesel fuel consumption, resulting in beneficial effects.

Table 3.11-7 provides an impact summary for the Build Alternative.

Table 3.11-7. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.11-A: Water supply and infrastructure	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect	*Construction* **HWQ-1 Prepare and Implement an SWPPP**	*Construction* No Adverse Effect
	Operations Adverse Effect	*Operations* **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)**	*Operations* No Adverse Effect

Table 3.11-7. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.11-C: Wastewater treatment capacity and infrastructure	*Construction* No Adverse Effect	*Construction* No mitigation is required.	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required.	*Indirect* No Adverse Effect
Topic 3.11-D: Solid waste collection and landfill capacity	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.11-E: Telecommunications Infrastructure	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect

Table 3.11-7. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.11-F: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Beneficial Effect	*Indirect* No mitigation is required	*Indirect* Beneficial Effect

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3.12 Cultural and Paleontological Resources

3.12.1 Introduction

This section provides an evaluation of potential effects to historic properties (within the portion of the area of potential effect [APE] in the City of Los Angeles) and paleontological resources that may result from the No Action Alternative and the Build Alternative. While the California SHPO has commented on the APE and concurred with the identification, evaluation, and assessment of effects for cultural resources identified within the APE, mitigation measures for historic properties presented in this chapter are still pending SHPO concurrence, which is expected in summer 2024.

The information about cultural resources contained in this section is summarized from the *Link US Historic Property Survey Report* (July 2018), *Link US Supplemental Cultural Resource Report* (December 2020), *Link US Second Supplemental Cultural Resource Report* (May 2023), and *Link US Finding of Effect Report* (August 2023) (Appendix M of this EIS). The information about paleontological resources contained in this section is summarized from the *Link US Paleontological Identification Report and Paleontological Evaluation Report* (Appendix N of this EIS).

3.12.2 Regulatory Framework

Table 3.12-1 identifies and summarizes applicable federal laws, regulations, and plans relevant to cultural and paleontological resources.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
Federal	
National Environmental Policy Act (42 United States Code Section 4321 et seq.)	NEPA, as amended, establishes the federal policy of protecting important historic, cultural, and natural aspects of our national heritage during federal project planning. All federal or federally assisted projects requiring action pursuant to Section 102 of NEPA must take into account the effects on cultural resources. According to the NEPA regulations (40 CFR Part 1500 et seq.), in considering whether an action may "significantly affect the quality of the human environment," an agency must consider, among other things, unique characteristics of the geographic area such as proximity to historic or cultural resources and the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP. The NEPA regulations also require that, to the fullest extent possible, agencies shall prepare Draft EISs concurrently with and integrated with environmental impact analyses and related surveys and studies required by the NHPA. When Section 106 of the NHPA

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
	and NEPA are integrated, project impacts that cause adverse effects under Section 106 are described in the EIS.
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(21),* 64 *Federal Register* 28545-28556 (1999)[1]	These FRA procedures require the Draft and Final EIS to identify any significant changes likely to occur in sites of historical, archeological, architectural, or cultural significance.
National Historic Preservation Act (54 United States Code Section 300101, et seq.) including Section 106 of the NHPA (54 United States Code Section 306108) Implementing Regulations for Section 106 of the National Historic Preservation Act (36 Code of Federal Regulations 800)	Section 106 of the NHPA of 1966, as amended, established a national policy of historic preservation, and encourages such preservation. The NHPA established the Advisory Council on Historic Preservation and provides procedures for the agency to follow if a proposed action affects a property that is included, or that may be eligible for inclusion, in the NHRP. The NRHP was developed as a direct result of the NHPA. Section 106 requires that the head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or Federally assisted undertaking in any state, and the head of any Federal department or independent agency having authority to license any undertaking, shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, take into account the impact of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.
Section 4(f) of the Department of Transportation Act (49 United States Code Section 303)	Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 USC 303, prohibits use of a publicly owned park, recreation area, wildlife or waterfowl refuge, or publicly or privately owned historic site of national, state, or local significance listed or found eligible for listing in the NRHP for a transportation project unless the Secretary of Transportation has made a finding of *de minimis* impact, or has determined that there is no feasible and prudent alternative to such use and the project includes all possible planning to minimize harm to the property resulting in such use. Collectively, the properties protected by Section 4(f) are known as "Section 4(f) resources."
Archaeological and Historic Preservation Act (54 United States Code Sections 312501 to 312508)	This act provides for preserving significant historic or archaeological data that may otherwise be irreparably lost or destroyed by construction of a project by a federal agency or under a federally licensed activity or program. This includes relics and specimens.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
American Indian Religious Freedom Act (42 United States Code Section 1996)	The American Indian Religious Freedom Act protects and preserves the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians. The act requires policies of all governmental agencies to respect the free exercise of native religion and to accommodate access to and use of religious sites to the extent that the use is practicable and is not inconsistent with an agency's essential functions. If a place of religious importance to American Indians may be affected by a project, the American Indian Religious Freedom Act promotes consultation with Indian religious practitioners, which may be coordinated with Section 106 consultation.
Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments, April 29, 1994	Directed to the heads of executive departments and agencies, this memorandum outlines the principles that are to be followed in interactions with the governments of federally recognized Native American tribes. It includes provisions for government-to-government relations and consultation and requires assessment of the impact of federal government plans, projects, programs, and activities on tribal trust resources and assurance that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities.
Executive Order 13175, Consultation with Indian Tribal Governments	This order establishes regular and meaningful consultation and collaboration with officials of federally recognized Indian tribes in the development of federal policies that have tribal implications, to strengthen the government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes. It sets forth guiding principles for government-to-government relations with Indian tribes, along with criteria for formulating and implementing policies that have tribal implications.
United States Department of Transportation Tribal Consultation Plan (Order 5301.1)	In response to EO 13175, this plan states that as an executive agency, the USDOT has a responsibility to, and is committed to working with, the governments of federally recognized Indian tribes in a unique relationship, respecting tribal sovereignty and self-determination. The plan identifies specific goals, including establishing direct contact with Indian tribal governments at reservations and tribal communities and seeking tribal government representation in meetings, conferences, summits, advisory committees, and review boards concerning issues with tribal implications.
48 Code of Federal Regulations 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

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
	the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's cultural heritage.
36 Code of Federal Regulations 67 The Secretary of the Interior's Standards for Rehabilitation	These standards were established by the Secretary of the Interior in 1986 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 Code of Federal Regulations 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 regarding whether a historic property should be saved, but to provide consistency in conservation and restoration practices.
16 United States Code § 470aaa 1-11 Paleontological Resources Preservation Act of 2009	With the passage of the Paleontological Resources Preservation Act of 2009, paleontological resources are a significant resource, and it is now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible effect.
State	
California Environmental Quality Act, Title 14 California Code of Regulations § 15064.5	Section 15064.5 directs lead agencies to determine whether cultural resources are historically significant resources.
California Environmental Quality Act, Title 14 California Code of Regulations § 21084.1	A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.
California Register of Historical Resources	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" (PRC § 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 § 5024.1(d)).
Assembly Bill 4239 (1976)	AB 4239 established the NAHC as the primary state government agency responsible for identifying and cataloging Native American cultural resources.
Assembly Bill 52 (2014)	AB 52 amended the California Public Resources Code to require 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

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
	Native American Tribes prior to the release of the EIR. If a project has the potential to affect a tribal cultural resource, as defined by PRC § 21074, 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.
Public Resources Code § 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.
Public Resources Code § 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.
Public Resources Code § 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 most likely descendant 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.
Public Resources Code § 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 § 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.
Public Resources Code § 30244	This section requires reasonable mitigation for impacts on paleontological resources that occur as a result of development.
Public Resources Code § 5024 (f)	This section requires that state agencies (Caltrans) must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List of State-Owned Properties. Under this provision, for

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
	state-owned historical resources, the state agency requests the SHPO comments on the project.
Local	
City of Los Angeles Cultural Heritage Ordinance (2018)	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 (2001)	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.
County of Los Angeles General Plan Conservation and Open Space Element (1980)	The County of Los Angeles General Plan Conservation and Open Space Element 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; and • Promote public awareness of cultural resources. Encourage private owners to protect cultural resources
City of Los Angeles Alameda District Specific Plan (1996)	The ADSP includes policies regarding historic preservation requirements pertaining to the planning area. The plan also includes

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law, Regulation, or Plan	Description
	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 pre-inspection, 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.

Notes:

AB=Assembly Bill; ADSP=Alameda District Specific Plan; Caltrans=California Department of Transportation; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CHC=Cultural Heritage Commission; CRHR=California Register of Historical Resources; EIR=environmental impact report; EIS=environmental impact statement; HCM=Historic-Cultural Monument; MLD=most likely descendant; NAHC=Native American Heritage Commission; NHPA=National Historic Preservation Act; NRHP=National Register of Historic Places; PRC=Public Resource Code; TCR=Tribal Cultural Resource; U.S.=United States

3.12.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Built environment historic properties;
- Known or unknown archaeological historic properties; and
- Paleontological Resources.

Geographic Area Considered

Cultural Resources

The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16[d]).

In complying with the regulations of Section 106 (36 CFR 800), the following methodology was used to delineate the APE for the undertaking:

- **Project Footprint:** The Project Footprint is used for the identification, evaluation, and assessment of effects for archaeological resources. It includes any ground area that would potentially be directly affected by excavation, grading, construction, demolition, temporary access and staging activities, utility relocation, or railroad track reconfiguration. Additional properties that may be directly affected as a result of the Project (e.g., due to the potential alteration of bridges and highways) are also included.
- **APE:** The APE is used for the identification, evaluation, and assessment of effects for built environment resources. The APE for built environment resources includes the parcels encompassed by the Project Footprint. If any portion of a parcel is included in the Project Footprint, the entire parcel is included within the APE. Additionally, the APE includes any adjacent parcels containing built environment resources sensitive to potential visual or noise and vibration effects.

A detailed description of the APE, with accompanying maps, is presented in Appendix M of this EIS.

The SHPO has consulted on the delineation of the APE for the Project:

- In a letter to the FRA dated September 27, 2018, SHPO concurred with the adequacy of FRA's APE delineation and efforts to identify historic properties, as documented in the *Link US Historic Property Survey Report* (July 2018) and supporting documents.
- On February 10, 2021, SHPO concurred with the CHSRA's supplemental efforts to identify historic properties and had no comments regarding the updated APE, as documented in the *Link US Supplemental Cultural Resource Report* (December 2020).
- On June 28, 2023, SHPO concurred with the CHSRA's supplemental efforts to identify historic properties and had no comments regarding the updated APE, as documented in the *Link US Second Supplemental Cultural Resource Report* (May 2023).

The APE for the Section 106 undertaking is discontinuous and comprises a portion in the City of Los Angeles, which corresponds to the Build Alternative discussed in this section, and a portion in the City of Vernon, which corresponds to the Malabar Yard railroad improvements discussed in the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS). For the purposes of this evaluation, the portion of the APE and Section 106 undertaking in the City of Los Angeles, which corresponds to the Build Alternative, is discussed in this section consistent with geographic areas considered in all other resource sections of the EIS.

An overview of the portion of the APE in the City of Los Angeles is depicted on Figure 3.12-1. The subsurface vertical extent of the Project Footprint takes into account the total depth of ground disturbance associated with construction of the Build Alternative. The estimated maximum excavation depth in the portion of the APE in the City of Los Angeles is depicted on Figure 3.12-2

for the Build Alternative; Table 3.12-2 summarizes the estimated maximum excavation depths associated with major Project components.

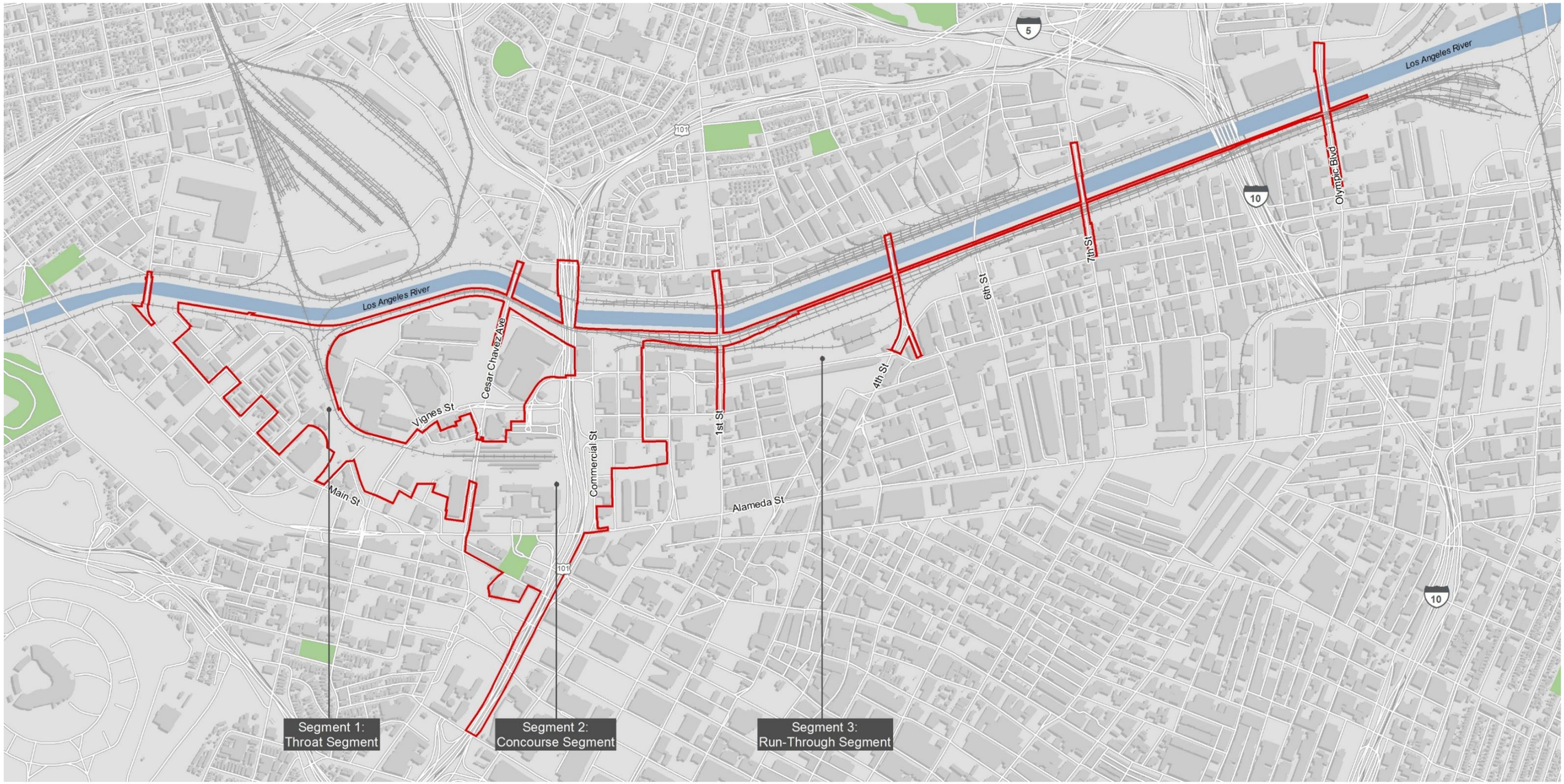
Table 3.12-2. Estimated Maximum Excavation Depths

Major Project Component	Ground-Disturbing Construction Activity	Maximum Depth Associated with Ground Disturbance
Throat reconstruction	Utility relocations	Up to 20 feet
	Track widening	Up to 5 feet
	Throat reconstruction (over excavation only)	Up to 5 feet
	Vignes Street and Cesar Chavez Avenue bridge supports	Up to 100 feet
	Drainage improvements (cistern)	Up to 20 feet
	North Main Street Bridge safety improvements	Up to 5 feet
Elevated rail yard/concourse-related improvements	Expanded passageway	Up to 20 feet
	East Plaza/West Plaza	Up to 10 feet
	Utility relocations	Up to 20 feet
	Drainage improvements (cisterns)	Up to 20 feet
Run-through tracks	Support piers/bents	Up to 100 feet
	Utility relocations	Up to 20 feet
	Berms	Up to 5 feet
Main line connection	Support piers	Up to 100 feet
	Track reconstruction (over excavation only)	Up to 5 feet
	BNSF West Bank Yard track work	Up to 5 feet

Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
Anticipated depths of disturbance are for Project-related infrastructure only and do not account for additional excavation required for potentially hazardous materials.

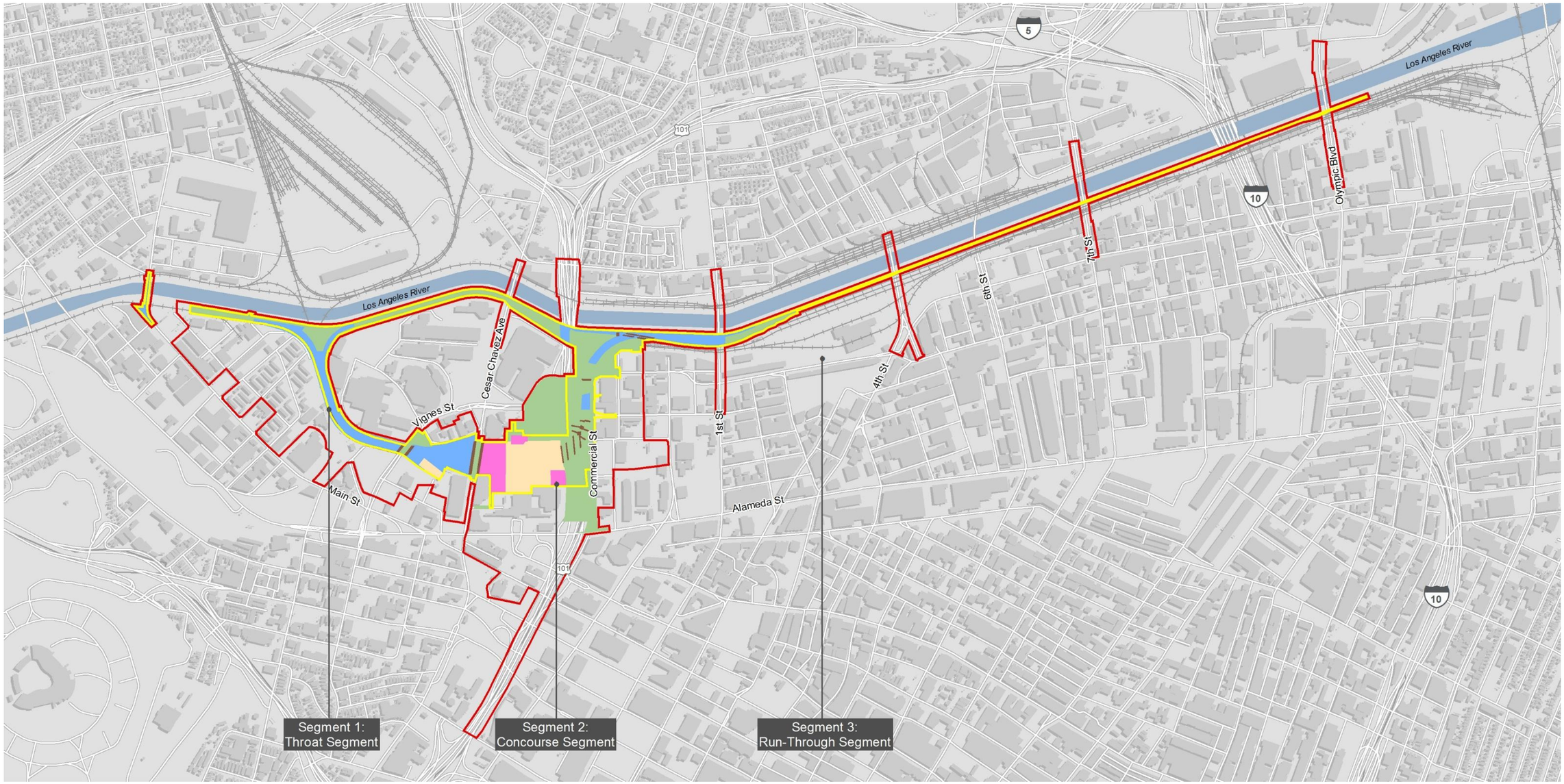
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Figure 3.12-1. Portion of the Area of Potential Effects in the City of Los Angeles



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Figure 3.12-2. Estimated Maximum Vertical Excavation Depths of the Build Alternative



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Paleontological Resources

The paleontological resource study area (RSA) corresponds to the Project footprint where disturbance within geologic units that have a high sensitivity are located and where potential impacts on paleontological resources may occur.

Methodology

Cultural Resources

Coordination of Section 106 Process with NEPA Compliance

Title 36 CFR Part 800 defines the Section 106 process and documentation requirements. The Advisory Council on Historic Preservation advises federal agencies to coordinate compliance with Section 106 of the NHPA and the procedures in the regulations implementing Section 106, with steps taken to meet the requirements of NEPA so they can meet the purposes and requirements of both statutes in a timely and efficient manner. When NEPA review and Section 106 are integrated, measures to avoid, minimize, or mitigate adverse effects while identifying alternatives and preparing NEPA documentation can be assessed. Such measures are binding commitments documented in the EIS, as well as in compliance with Section 106 through the preparation of a Programmatic Agreement (PA).

The Section 106 undertaking comprises the Build Alternative discussed in the present section and the Malabar Yard railroad improvements discussed in the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS).

Section 106 Technical Studies Prepared for the Project

The following technical studies were prepared to support the EIS and document compliance with Section 106 of the NHPA:

- ***Link US Historic Property Survey Report* (July 2018)**, including an *Archaeological Survey Report*, *Historical Resources Evaluation Report*, and other supporting documents that detail efforts to identify historic properties. The findings of these studies received concurrence from SHPO on September 27, 2018.
- ***Link US Supplemental Cultural Resource Report* (December 2020)**, which updates the identification of historic properties in response to changes to the Project design. The findings of this study received concurrence from SHPO on February 10, 2021.
- ***Link US Second Supplemental Cultural Resource Report* (May 2023)**, which documents additional updates to the identification of historic properties due to the time elapsed since previous studies and to changes to the Project design and alternatives considered. The findings of this study received concurrence from SHPO on June 28, 2023.
- ***Link US Finding of Effect Report* (August 2023)**, which analyzes the effects of the Project on archaeological and built environment historic properties and provides draft

mitigation measures to support Section 106 consultation regarding the resolution of adverse effects. The findings of this study received concurrence from SHPO on November 20, 2023.

The above technical studies inform the findings described in this section. The documents are available in Appendix M of this EIS, in redacted form to protect locational information of sensitive resources.

Identification of Historic Properties

- **Archaeological Resources -** Record searches encompassing the Project Footprint and a 0.25-mile radius beyond were conducted at the South Central Coastal Information Center on November 17 and 19, 2014, August 4, 2016, February 6, 2019, and February 8, 2023. The review included previously documented resources and listings in the NRHP, CRHR, 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 and the potential for the discovery of unanticipated resources within the Project Footprint. On June 15, 2016, an intensive archaeological pedestrian survey was completed within the Project Footprint. Parallel transects spaced 15 meters apart were consistently employed across the entire Project Footprint in areas unpaved or likely to contain evidence of archaeological resources. Areas that were visually or windshield surveyed included active train tracks and rail yards. Visibility was obscured by the current built environment, paved roads, and existing infrastructure covering the majority of the Project Footprint in and around LAUS. 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 Historic Property Survey Report* (Appendix M of this EIS).
- **Built Environment Resources -** The results of the historical and architectural resources survey are documented in the *Link US Historic Property Survey Report* (July 2018), the *Link US Supplemental Cultural Resource Report* (December 2020), and the *Link US Second Supplemental Cultural Resource Report* (May 2023) (Appendix M of this EIS).

  The following standard sources of information were reviewed in the process of compiling this report (Appendix M of this EIS):

  - 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, August 4, 2016, February 6, 2019, and again on February 8, 2023, 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 APE and existing cultural resource reports pertaining to the general vicinity of the APE. Additional background information was provided by Metro for their projects conducted in the vicinity of LAUS.

The following resources were also consulted for further background research (Appendix M of this EIS):

- City of Los Angeles Historic Resources Survey (SurveyLA)
- Caltrans As-Built Drawing Archives
- Caltrans Historic Bridge Inventory (HBI)
- 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 (circa [ca.] 1987)

National Register of Historic Places Eligibility Criteria

The NRHP eligibility criteria (36 CFR 60.4) were applied to evaluate the historic significance of cultural resources identified. Properties eligible for listing in the NRHP are districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. 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 value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Outreach Efforts to Agencies, Native American Tribes, Interested Parties, and the Public

The NEPA process has included an extensive public outreach effort, including formal and informal outreach methods such as public meetings, key stakeholder and community group briefings, project development team and agency coordination meetings, advertisements, email blasts, mailings, pamphlet distribution, website updates, and social media engagement. Scoping meetings were held in 2016 and 2020.

In accordance with applicable requirements of NEPA and the NHPA, FRA, the previous federal lead agency for Link US, initiated Section 106 consultation for the Project in 2016 and identified a wide range of consulting parties in support of FRA's consultation with interested Native American tribes, federal, state, and local government agencies, special interest groups and local historical societies, and the SHPO, as documented in the 2018 *Link US Historic Property Survey Report* (Appendix M of this EIS).

With FRA's delegation of the NEPA lead agency role to CHSRA, the responsibility for Section 106 compliance is with CHSRA. In 2019, CHSRA notified Tribes and other consulting parties of the NEPA delegation. Consulting parties were re-engaged in 2020 regarding the findings of the *Link US Supplemental Cultural Resource Report* and in 2023 regarding the *Link US Second Supplemental Cultural Resource Report,* as documented in both technical studies (Appendix M of this EIS). Section 106 consultation is currently ongoing with federal, state, and local government agencies, Native American tribes, and other interested groups. In June 2023, consulting parties were provided the opportunity to review the *Link US Finding of Effect Report* and participate in development of measures to avoid, minimize, and mitigate adverse effects on historic properties.

Assessing Effects

A project that causes a substantial adverse change in the significance of a historic property is a project that may have an adverse effect under NEPA. To comply with Section 106 of the NHPA, any Project-related effects on properties listed in or determined eligible for inclusion in the NRHP must be analyzed by applying the criteria of adverse effect (36 CFR § 800.5[a]), as described below.

> *An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the project that may occur later in time, be farther removed in distance, or be cumulative.*

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property, which causes its deterioration except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Paleontological Resources

Based on the results of the geologic map review and literature and museum records searches for the paleontological RSA, the paleontological sensitivity of the geologic units within the paleontological RSA were ranked using the Caltrans' tripartite scale, and effects that may result from implementation of the Build Alternative were evaluated based on available 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 described below.

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 woodrat (*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 strata. 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, monitoring and mitigation plans 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 Affected Environment

Historical and Cultural Setting

In-depth contexts for the pre-contact and historic periods are included in the *Link US Historic Property Survey Report* (July 2018) (Appendix M of this EIS). To provide context of the richness and high sensitivity for cultural resources of the area, this section briefly summarizes the different time periods and people who used and settled the area around LAUS. The area has a complex cultural background that begins with Native American occupation and use going back at least 10,000 years.

Pre-Contact Period

Several chronologies based on archaeological finds are used to divide different periods of Native American cultural habitation and development. The most commonly used cultural chronology divides human occupation of southern California into five broad periods: the Paleoindian Period (10,000 before present [BP] to 8000 BP), the Early Period or Millingstone Horizon (8000 BP to 3000 BP), the Middle Period or Intermediate Horizon (3000 BP to anno domini [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).

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. 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.

During the Late Prehistoric Period, Native American groups that were later known as the Gabrieleño, Juaneño, and 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 Gabrieleño village south of present-day LAUS. At this time, trade networks linking the coast, Channel Islands, mountains, and inland valleys became more complex and significant in shaping cultural practices.

Gabrieleño Ancestors

The portion of the APE in the City of Los Angeles is on lands that were once inhabited by the Gabrieleño people. The Gabrieleño 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.

LAUS is located north of the historically documented village of Yangna (or group of villages forming the village community of Yangna). Today, the Gabrieleño continue their traditions in Southern California, with an approximate representation of 2,000 individuals.

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. The location was identified 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.

Historic Period

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 the 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. The settlement of Europeans in California brought many conflicts and

disease to the Gabrieleño, 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 American populations, the Gabrieleño people, along with other groups, saw their populations and cultural traditions drastically decimated.

Spanish and 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 Rodríguez Cabrillo. Cabrillo sailed into San Pedro Harbor and called it Bahía de los Fumos (Bay of the Smokes) due to the Native American campfires he observed along the shores. It is estimated that the Gabrieleño people numbered approximately 5,000 individuals at this time, spread across hundreds of villages throughout the Los Angeles Basin and the Channel Islands, although the Native American population may have been as large as 10,000. Cabrillo reported passing by a large Gabrieleño 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 Gabrieleño people.

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 renewed Spanish presence in California followed the 1769 expedition led by Captain Gaspar de Portolá. 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 Gabrieleño 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.

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. 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 present)

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. Remains of Keller's sherry house were found during excavations for the Metropolitan Water District Headquarters adjacent to the portion of the APE in the City of Los Angeles.

In the 1870s, residential lots were sold along Aliso Street by entrepreneurs like Matthew Keller. Initially they were 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 occupants. 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.

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 also immigrants from all over the world. By this time, Los Angeles had a sizeable Chinese presence numbering approximately 600 people, mostly congregated within the boundaries of the current site of the LAUS. Here, the Chinese set up restaurants, laundries, general goods stores, vegetable markets, and other establishments within a rapidly growing metropolis.

More than half of the Chinese population in 1880 lived along a narrow street called Negro Alley, 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 portion of the APE in the City of Los Angeles (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 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 school for children of Chinese descent. The area immediately surrounding the portion of the APE in the City of Los Angeles, 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.

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, ranging from 1 to 3 feet in the southwest portion of the site to as much as 24 feet of fill under the track yard.

Cultural Resources

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 substantial evidence of human activity.

The record searches indicated 50 previous investigations have been performed in the Project Footprint, and 3 archaeological resources are mapped within the Project Footprint. These resources consist of:

1. A multicomponent site reported as the original site of Los Angeles Chinatown and early Los Angeles, including precontact Native American remains and Spanish/Mexican period remains (P-19-001575 / Archaeological Site CA-LAN-1575/H)
2. Two segments of an abandoned railroad siding (P-19-003169)
3. A segment of the Mojave Road (P-19-187085)

The archaeological field survey 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 Project Footprint. This resource is discussed in detail below.

Archaeological Site P-19-001575 (CA-LAN-1575/H)

Archaeological Site P-19-001575 (herein CA-LAN-1575/H) is a large multicomponent archaeological site located in downtown Los Angeles, California. 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 Historic Property Survey Report* (Appendix M of this EIS). 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 Project Footprint. Artifacts and features uncovered during past projects include Native American 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 Precontact/Early Historic Native American Period (AD 1000–1848)
- The Spanish-Mexican Period (1781–1850)
- The American Period – Historic Los Angeles Chinatown (1850–1966)

Detailed information regarding Archaeological Site CA-LAN-1575/H, including the results of previous and ongoing investigations for construction projects at or near LAUS, is documented in the *Link US Historic Property Survey Report* (July 2018), *Link US Supplemental Cultural Resource Report* (December 2020), and *Link US Second Supplemental Cultural Resource Report* (May 2023) (Appendix M of this EIS).

Prior to the CHSRA assuming its responsibilities under the NEPA Assignment MOU, 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 eligible for listing in the NRHP under Criterion D, as the site yielded and still has the potential to yield significant information regarding the Precontact/Early Historic Native American Period and American Period. As documented in the 2023 *Link US Second Supplemental Cultural Resource Report,* recent investigations in support of the Metro Patsaouras Plaza Busway Project have resulted in the recommendation that the Spanish-Mexican Period also be included as a period of significance of CA-LAN-1575/H. SHPO concurred with this recommendation on July 19, 2023 (Appendix M of this EIS).

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 M of this EIS) 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 Project Footprint.

P-19-187085

The alignment of the Mojave Road (also known as Mojave Trail) was recorded solely based on historical descriptions and maps and is represented by a commemorative State Historical Landmark (No. 963), located a considerable distance from the Project. The landmark monument was erected in 1988 at the Midway Rest Area along Interstate 15 North (the Mojave Freeway), approximately 30 miles northeast of Barstow. No physical features associated with the Mojave Road have been recorded in or near Los Angeles. 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. The resource may have crossed the Project Footprint, but its actual historical alignment within the vicinity of the Project Footprint is not known, and no remnants or signs of the resource exist within or near the Project Footprint.

Built Environment Resources

Built environment resources include recognizable human-made historical architectural 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.

The portion of the APE in the City of Los Angeles is centered primarily around LAUS, an NRHP-listed property located in an urban setting with industrial properties and railroad tracks. The built environment resource survey resulted in the identification of 16 historic properties in the portion of the APE in the City of Los Angeles (Table 3.12-3). Summary descriptions of each resource are provided below. Further detail on these resources can be found in the *Link US Historic Property Survey Report* (July 2018), *Link US Supplemental Cultural Resource Report* (December 2020), and *Link US Second Supplemental Cultural Resource Report* (May 2023) (Appendix M of this EIS). All resources are displayed on Figure 3.12-3, which shows the portion of the APE in the City of Los Angeles and has corresponding map reference numbers that identify each resource.

Table 3.12-3. Built Environment Historic Properties in the Portion of the Area of Potential Effects in the City of Los Angeles

Name (Map Reference No.[a])	Address/Location	Community	OHP Status Code[b]
Los Angeles Union Passenger Terminal (LAUS) and associated contributing resources (#1)	800 Alameda Street	Los Angeles, California	1S
U.S. Post Office Los Angeles Terminal Annex (#2)	900 Alameda Street	Los Angeles, California	1S

Table 3.12-3. Built Environment Historic Properties in the Portion of the Area of Potential Effects in the City of Los Angeles

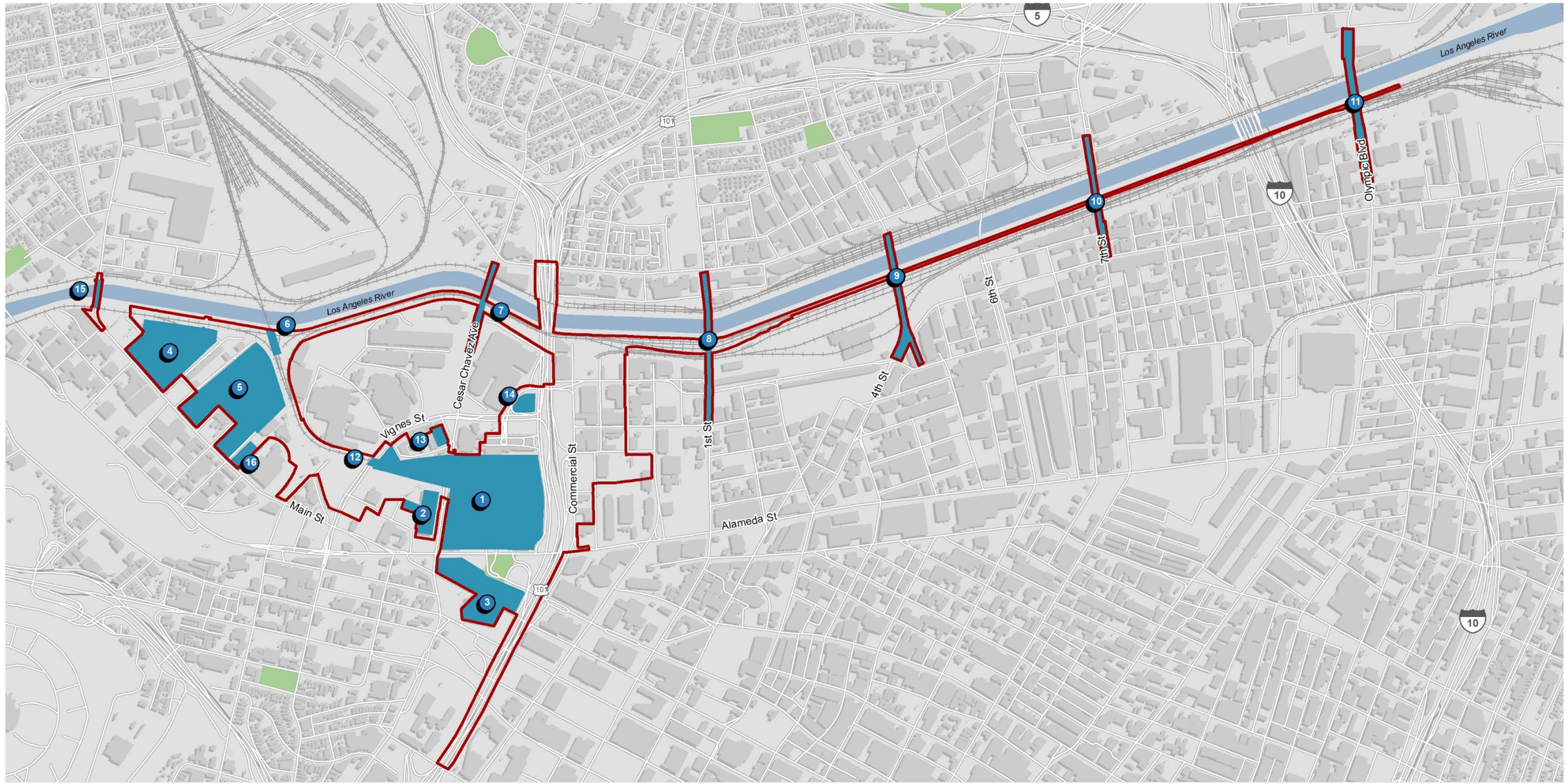
Name (Map Reference No.[a])	Address/Location	Community	OHP Status Code[b]
Los Angeles Plaza Historic District (#3)	Roughly bounded by Cesar Chavez Avenue to the north, Alameda and Los Angeles Streets to the east, Arcadia Street to the south, and Spring Street to the west	Los Angeles, California	1S
LADWP - Main Street Center (#4)	1630 Main Street	Los Angeles, California	2D2
William Mead Homes (#5)	1300 Cardinal Street	Los Angeles, California	2S2
Mission Tower (#6)	800 Alameda Street	Los Angeles, California	2S2
Cesar Chavez Avenue (formerly Macy Street) Viaduct; Bridge #53C 0130) (#7)	Cesar Chavez Avenue over the Los Angeles River, 0.12 mile north of US-101	Los Angeles, California	2S2
First Street Viaduct (Bridge #53C 1166) (#8)	First Street over the Los Angeles River, 0.6 mile west of US-101	Los Angeles, California	2S2
Fourth Street Viaduct (Bridge #53C 0044) (#9)	Fourth Street over the Los Angeles River	Los Angeles, California	2S2
Seventh Street Viaduct (Bridge #53C 1321) (#10)	Seventh Street over the Los Angeles River	Los Angeles, California	2S2
Olympic Boulevard (Ninth Street) Viaduct (Bridge #53C 0163) (#11)	Olympic Boulevard over the Los Angeles River	Los Angeles, California	2S2
Vignes Street Undercrossing (Bridge #53C 1764) (#12)	0.2 miles northwest of Cesar Chavez Avenue	Los Angeles, California	2D2
Macy Street School (#13)	900 Avila Street	Los Angeles, California	2S2
Denny's Restaurant (#14)	530 Ramirez Street	Los Angeles, California	2S2
North Main Street Bridge (Bridge #53C 1010) (#15)	Main Street over the Los Angeles River	Los Angeles, California	2S2

Table 3.12-3. Built Environment Historic Properties in the Portion of the Area of Potential Effects in the City of Los Angeles

Name (Map Reference No.[a])	Address/Location	Community	OHP Status Code[b]
Kelite Factory Plant No. 1 (#16)	1250 Main Street	Los Angeles, California	2S2

Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
[a] *This map reference code corresponds to Figure 3.12-3.*
[b] *OHP Status Codes: 1S = Individual property listed in NRHP by the Keeper; 2D2 = Contributor to a district determined eligible for NRHP by consensus through Section 106 process; 2S2 = Individual property determined eligible for NRHP by consensus through Section 106 process.*
LADWP=Los Angeles Department of Water and Power; LAUS=Los Angeles Union Station; No.=number; OHP=Office of Historic Preservation; U.S.=United States

Figure 3.12-3. Portion of the Area of Potential Effects in the City of Los Angeles and Location of Built Environment Historic Properties



LEGEND

- Area of Potential Effects
- Historic Property

1. Los Angeles Union Passenger Terminal (LAUS) and associated contributing resources
2. U.S. Post Office Los Angeles Terminal Annex
3. Los Angeles Plaza Historic District
4. Los Angeles Department of Water and Power - Main Street Center
5. William Mead Homes
6. Mission Tower
7. Cesar Chavez Avenue Viaduct (Macy Street Viaduct; Bridge #53C 0130)
8. First Street Viaduct (Bridge #53C 1166)
9. Fourth Street Viaduct (Bridge #53C 0044)
10. Seventh Street Viaduct (Bridge #53C 1321)
11. Olympic Boulevard (Ninth Street) Viaduct (Bridge #53C 0163)
12. Vignes Street Undercrossing (Bridge #53C 1764)
13. Macy Street School
14. Denny's Restaurant
15. North Main Street Bridge (Bridge #53C 1010)
16. Kelite Factory Plant No. 1

0 Feet 1,000

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Properties Listed in the National Register of Historic Places

The following three historic properties were identified within the portion of the APE in the City of Los Angeles (Appendix M of this EIS):

- ***Los Angeles Union Passenger Terminal*** **(LAUS, Union Station)** and associated contributing resources (Map Reference #1), 800 Alameda Street, Los Angeles, was constructed from 1934 to 1939 and was designed in the Spanish Colonial Revival and Streamline Moderne styles. This property was listed in the NRHP on November 13, 1980, under NRHP Criteria A and C with a period of significance of 1939. LAUS was determined to be of exceptional importance. Therefore, at the time of listing, it met NRHP Criteria Consideration G, applied to properties that achieve significance before they are 50 years old. LAUS was declared City of Los Angeles Historic-Cultural Monument (LAHCM) #101 on August 2, 1972.
- **U.S. Post Office Los Angeles Terminal Annex** (Map Reference #2), 900 Alameda Street, Los Angeles, was the central mail processing facility for Los Angeles from 1940 to 1989. Constructed in Mission/Spanish Colonial Revival architectural style, it was intentionally designed to be consistent in style with LAUS. This property was listed in the NRHP on January 11, 1985, as part of the United States Post Office Thematic Resource nomination. The Terminal Annex qualified under NRHP Criterion C with a period of significance of 1938. It also met NRHP Criteria Consideration G.
- **Los Angeles Plaza Historic District** (El Pueblo de Los Angeles Historic District/El Pueblo, Map Reference #3), 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. The buildings feature an extensive range of nineteenth and early twentieth century architectural styles, including some from the Spanish Colonial and Mexican eras. The oldest extant resources remaining in the district were constructed in 1822: Nuestra Señora La Reina de Los Angeles (Old Plaza Church), and the Plaza Church Cemetery, site of the first cemetery of Los Angeles. 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 comprises 20 contributing buildings, 2 contributing sites, 6 noncontributing buildings, and 1 noncontributing structure. Many of the individual resources have been designated at the national, state, and local level, including Los Angeles Plaza itself, which is California Historical Landmark No. 156 and was identified as a contributing site in the amended NRHP district.

Properties Previously Determined Eligible for the National Register of Historic Places

Properties previously determined eligible for the NRHP as a result of a consensus between a federal agency and SHPO did not require re-evaluation by the Link US Project, unless field survey investigation revealed their NRHP eligibility status was compromised. The following ten historic

properties were identified within the portion of the APE in the City of Los Angeles (Appendix M of this EIS):

- ***LADWP Main Street Center*** (Map Reference #4), 1630 North Main Street, Los Angeles, is a substantially scaled, multi-building yard owned and operated by the LADWP. On the property are numerous shops, test labs, warehouses, repair facilities, garages, crane aisles, and offices designed in the industrial style. A determination of eligibility prepared by the Federal Emergency Management Agency in 1994 found the eight earliest buildings on the property to be contributors to an NRHP-eligible historic district under NRHP Criteria A and B, with a period of significance of 1923–1944. SHPO concurred with the Federal Emergency Management Agency's determination on May 6, 1995. As part of the Link US Project, the 1995 finding was confirmed and updated to clarify current conditions. The period of significance was extended from 1944 to 1965 and four additional buildings were added as contributors to the district, for a total of 12 contributing buildings located on the property. SHPO concurred with this determination on September 27, 2018.
- ***William Mead Homes*** (Map Reference #5), 1300 Cardinal Street, Los Angeles, is a 17-acre multiple family public housing complex designed in the Modern "garden apartments" style. The property was determined eligible for listing in the NRHP on June 3, 2002, at the local level of significance through the United States Department of Housing and Urban Development Section 106 PA for the City of Los Angeles. SHPO concurred with this determination. The property qualified under Criterion A for its association with the development of public and defense worker housing in Los Angeles during the Second World War. It also qualified under 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.
- ***Mission Tower*** (Map Reference #6), 1436 Alhambra Avenue, Los Angeles, was constructed in 1916 and enlarged in 1938. Its design was influenced by the Spanish Colonial Revival style. The property was determined eligible for inclusion in the NRHP by FRA with SHPO concurrence on January 15, 2004, as a result of the Run-Through Tracks Project's intensive-level survey. Mission Tower qualified under NRHP Criteria A and C, at the local level of significance, with a period of significance of 1938.
- ***Cesar Chavez Avenue (formerly Macy Street) Viaduct over the Los Angeles River*** (Bridge #53C 0130, Map Reference #7) was designed in the Spanish Colonial Revival architectural style. The structure was determined eligible for inclusion in the NRHP in 1986 as a result of the Caltrans HBI. The bridge is eligible at the local level of significance under Criteria A and C, with a period of significance of 1926. The bridge was designated LAHCM #224 on August 1, 1979.
- ***First Street Viaduct over the Los Angeles River*** (Bridge #53C 1166, Map Reference #8) was designed in the Neo-Classical architectural style. The structure was determined eligible for inclusion in the NRHP in 1986 as a result of the Caltrans HBI. 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 designated LAHCM #909 on January 30, 2008.

- ***Fourth Street Viaduct over the Los Angeles River*** (Bridge #53C 0044, Map Reference #9) was designed in the Beaux Arts and Gothic Revival architectural styles. The structure 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 designated LAHCM #906 on January 30, 2008.
- ***Seventh Street Viaduct over the Los Angeles River*** (Bridge #53C 1321, Map Reference #10) was originally designed in the Beaux Arts style. The structure 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 designated LAHCM #904 on January 30, 2008.
- ***Olympic Boulevard (Ninth Street) Viaduct over the Los Angeles River*** (Bridge #53C 0163, Map Reference #11) was constructed in 1925 as the Ninth Street Viaduct and was re-named in commemoration of the 1932 Olympic Games. Its design features Classical style structural elements combining Doric and Corinthian orders. The structure 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 Viaduct was designated LAHCM #902 on January 30, 2008.
- ***North Main Street Bridge*** (Bridge #53C 1010, Map Reference #15) is a pioneering example of a three-hinge bridge design that originated in Europe and one of the earliest of its kind in the western United States. The bridge was determined eligible for the NRHP under Criterion C in 1986 for its engineering as a result of the Caltrans HBI, with a period of significance of 1910. In 2008, the bridge was designated LAHCM #901.
- ***Kelite Factory Plant No. 1*** (Map Reference #16), 1250 Main Street, Los Angeles, is an industrial loft with Art Deco–style elements. The property was evaluated for the California High Speed Rail System – Burbank to Los Angeles Project Section and determined eligible for inclusion in the NRHP under Criterion C at the local level of significance. SHPO concurred with the CHSRA's determination on May 2, 2019. The period of significance is 1918 to 1930. The historic property boundaries are limited to the northernmost portion of the parcel, which contains the Plant No. 1 building and its immediate setting, and excludes the southern portion, which contains two later buildings (Plant No. 2 and Plant No. 3) that were found not to contribute to the significance of the property.

Properties Determined Eligible for the National Register of Historic Places

Three additional architectural resources within the portion of the APE in the City of Los Angeles were determined eligible for inclusion in the NRHP by FRA, the previous federal lead agency for the Link US Project, as documented in the *Link US Historical Resources Evaluation Report* (July 2018) (Appendix M of this EIS). SHPO concurred with FRA's eligibility determinations for these properties on September 27, 2018. The properties are:

- ***Vignes Street Undercrossing*** (Bridge #53C 1764, Map Reference #12) allows for vehicular traffic under the LAUS tracks. It was constructed from 1933 to 1939 as part of LAUS but is just outside that property's NRHP boundary. It was designed essentially in the Streamline Moderne style with Spanish Colonial Revival influence. The Vignes Street Undercrossing contributes to the significance of LAUS and was determined eligible for inclusion in the NRHP under Criterion A at the local level of significance, with a period of significance of 1937.
- ***Macy Street School*** (Map Reference #13), 900 Avila Street (505 Clara Street), Los Angeles, was constructed in 1915 and designed in the English Renaissance Revival style. The property was determined eligible for listing in the NRHP at the local level of significance under Criteria A and B with a period of significance of 1915–1930. The Macy Street School 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.
- ***Denny's Restaurant*** (Map Reference #14), 530 Ramirez Street, Los Angeles, is a Googie-style coffee shop designed by architect Larry A. Ray, based on the Armet & Davis prototype design from 1958. The property was determined eligible for the NRHP at the local level of significance under Criterion C, with a period of significance of 1966.

Properties Determined Not Eligible for the National Register of Historic Places

All other resources in the portion of the APE in the City of Los Angeles were determined not to be historic properties or were not evaluated because they have not achieved significance within the past 50 years and do not have exceptional importance.

As documented in the 2018 *Link US Historic Property Survey Report* and the 2023 *Link US Second Supplemental Cultural Resource Report* , nine properties in the portion of the APE in the City of Los Angeles were evaluated for the Link US Project and determined not eligible for the NRHP (Appendix M of this EIS). SHPO concurrence for FRA's 2018 eligibility determinations was received on September 27, 2018. SHPO concurrence on the CHSRA's 2023 eligibility determination was received on June 28, 2023. These resources have been assigned a California Office of Historic Preservation (OHP) status code of 6Y, as shown in Table 3.12-4. This status code identifies a resource that has been determined ineligible for the NRHP by consensus through the Section 106 process.

Table 3.12-4. Properties Determined Not Eligible for the National Register of Historical Places as a Result of Evaluation for the Link Union Station Project

Name	Address/Location	Community	OHP Status Code[a]
Gonzalez Candle Shop manufacturing building	940 Avila Street	Los Angeles, California	6Y
Interstate Rubber Company	908 Avila Street	Los Angeles, California	6Y
US-101 segment, Santa Ana Freeway (also known as "the slot")	US-101, PM 0.3–0.7 Approximately between Grand Avenue and Vignes Street	Los Angeles, California	6Y
American Warehouse and Realty Company	430 Commercial Street	Los Angeles, California	6Y
Maier Brewing Company	620 Commercial Street	Los Angeles, California	6Y
Friedman Bag Company, Polyethylene Division, North Building	711 Ducommun Street	Los Angeles, California	6Y
Friedman Bag Company, Polyethylene Division, South Building	706 Ducommun Street	Los Angeles, California	6Y
Manley Oil Company/ Southern California Gas Company	410 Center Street	Los Angeles, California	6Y
Industrial warehouse building	934 Avila Street	Los Angeles, California	6Y

Source: Link US Historic Property Survey Report and Link US Second Supplemental Cultural Resource Report (Appendix M of this EIS)
Notes:
[a] OHP Status Codes: 6Y = Determined ineligible for NRHP by consensus through Section 106 process.
OHP=Office of Historic Preservation; PM=post mile

As documented in the 2018 *Link US Historic Property Survey Report* (Appendix M of this EIS), eight additional properties were determined ineligible for listing in the NRHP as a result of previous studies (Table 3.12-5). Two of these properties, Thomas R. Barabee Store and Warehouse and Friedman Bag Company—Textile Division Building (Magellan Storage), are considered historical resources under CEQA, as is reflected in their OHP status codes.

Table 3.12-5. Properties Determined Not Eligible for National Register of Historical Places in Previous Studies

Name	Address/Location	Community	OHP Status Code[a]
US-101 Bridge #53-0405	US-101 over the Los Angeles River	Los Angeles, California	6Y
Thomas R. Barabee Store and Warehouse	611–615 Ducommun Street	Los Angeles, California	6Y; 5S3
Friedman Bag Company—Textile Division Building (Magellan Storage)	801 E. Commercial Street	Los Angeles, California	6Y; 3CS
Freidman Bag Company—Storage Building	500 Garey Street	Los Angeles, California	6Y
LAUSD District H Facilities Services and Maintenance Operations	611 Jackson Street	Los Angeles, California	6Y
Los Angeles Casing Company	710–714 Ducommun Street	Los Angeles, California	6Y
New York Junk Company	622 Frontage Road (825 Commercial Street)	Los Angeles, California	6Y
Amay's Bakery and Noodle Company	837 Commercial Street	Los Angeles, California	6Y

Source: Link US Historic Property Survey Report (Appendix M of this EIS)
Notes:
[a] OHP Status Codes: 6Y = Determined ineligible for NRHP by consensus through Section 106 process; 3CS = Appears eligible for the California Register of Historical Resources as an individual property through survey evaluation; 5S3=Appears to be individually eligible for local listing or designation through survey evaluation.

LAUSD=Los Angeles Unified School District; OHP=Office of Historic Preservation.

Paleontological Resources

The paleontological 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 extends from southwestern California into Mexico (Appendix N of this EIS). 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 EIS). While the Los Angeles Basin is traditionally considered to be part of the Peninsular Ranges Geomorphic Province, it is more tectonically related to the Transverse Ranges Geomorphic Province. The Los Angeles Basin is one of the largest and deepest valleys in southern California and is filled with over 5,500 meters of sediments that accumulated over the past 4 million years as a result of uplift of the mountains

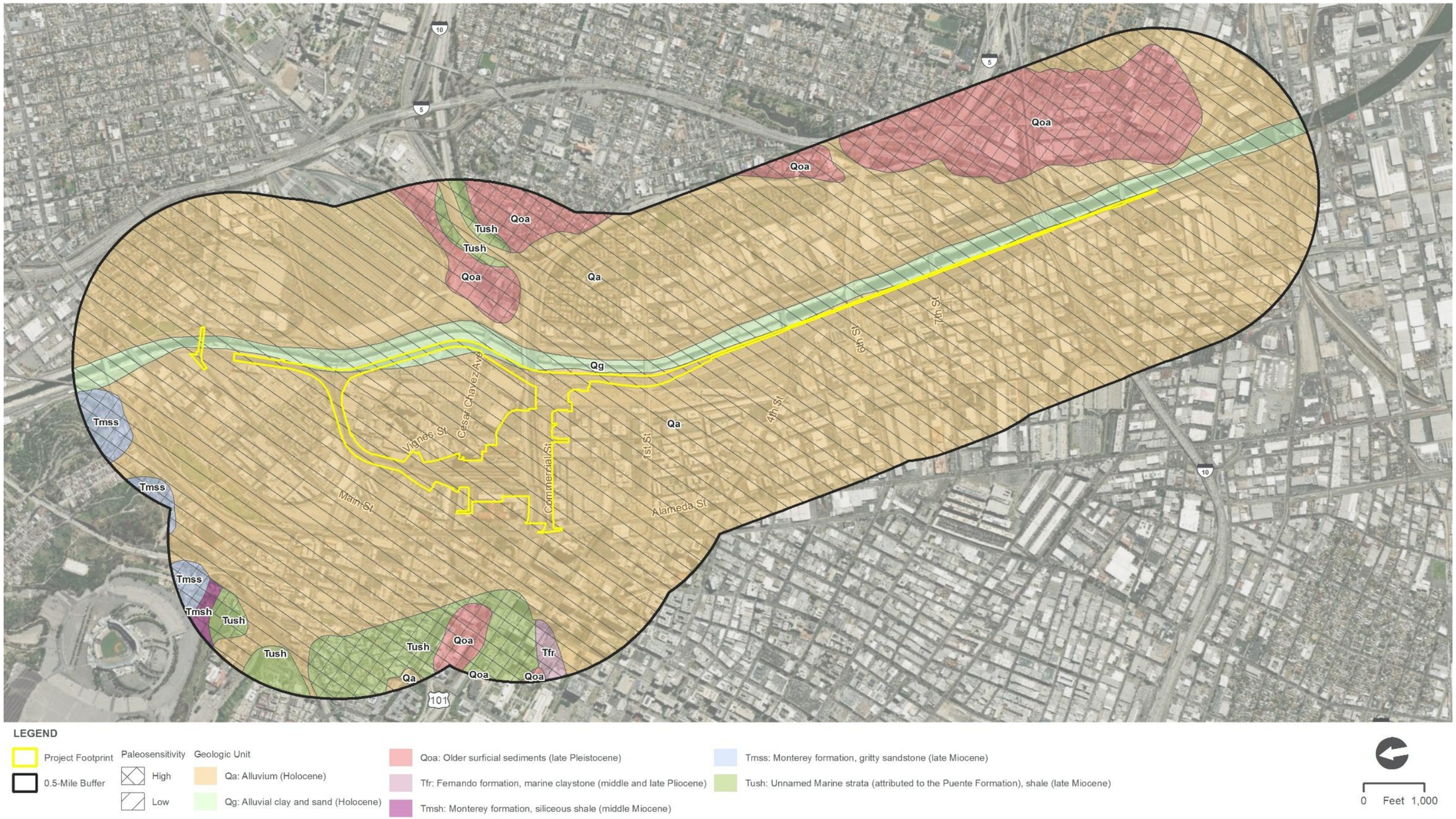
of the western Transverse Ranges and contemporaneous sinking of the basin associated with the rotation of the Transverse Ranges (Appendix N of this EIS).

Geologic Units

As illustrated on Figure 3.12-4, geologic mapping by Dibblee and Ehrenspeck (1989) indicates that the entirety of the paleontological RSA surface is underlain by Quaternary alluvial gravel and sand. Quaternary older alluvium deposits are mapped at the surface near the paleontological 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 paleontological RSA. The distribution of the geologic units within the vicinity of the paleontological RSA is discussed in detail in the *Link US Paleontological Identification Report and Paleontological Evaluation Report* (Appendix N of this EIS). The *Link US Preliminary Geotechnical Report* (Appendix K of this EIS) states that the paleontological RSA is underlain by artificial fill, Quaternary alluvium, Quaternary older alluvium, and Miocene Puente Formation.

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Figure 3.12-4. Geologic Units Within the Vicinity of the Paleontological Resource Study Area



Source: Link US Paleontological Identification Report and Paleontological Evaluation Report (Appendix N of this EIS)

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Paleontological Resources

A paleontological search of records maintained by the Natural History Museum of Los Angeles County was conducted for the paleontological RSA. On June 20, 2016, the Natural History Museum noted it does not have any vertebrate fossil localities within the paleontological RSA, but there were recorded localities nearby from the same older Quaternary units that occur as subsurface deposits within the paleontological RSA. Literature searches and online database reviews were also negative for fossils within the paleontological RSA, although fossils were recorded from Quaternary older alluvium and Puente Formation in the vicinity and throughout Los Angeles County, as detailed in the *Link US Paleontological Identification Report and Paleontological Evaluation Report* (Appendix N of this EIS) and in Table 3.12-6.

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 N of this EIS), as indicated in the *Link US Preliminary Geotechnical Report* (Appendix K of this EIS).

Table 3.12-6. Fossil Localities in the Project Vicinity

Locality No.	Common Name	Scientific Name	Depth	Reference
LACM 1023	Turkey	*Meleagris californicus*	Not Reported	Appendix N
	Saber-toothed cat	*Smilodon fatalis*		
	Horse	*Equus* sp.		
	Deer	*Odocoileus* sp.		
LACM 2032	Pond turtle	*Clemmys marmorata*	20 to 35 feet	Appendix N
	Ground sloth	*Paramylodon harlani*		
	Mastodon	*Mammut americanum*		
	Mammoth	*Mammuthus imperator*		
	Horse	*Equus* sp.		
	Camel	*Camelops* sp.		
LACM 1755	Horse	*Equus* sp.	43 feet	Appendix N
LACM 7701-7702	Threespine stickleback	*Gasterosteus aculeatus*	11 to 34 feet	Appendix N
	Salamander	*Batrachoseps* sp.		
	Lizard	*Lacertilia* sp.		

Table 3.12-6. Fossil Localities in the Project Vicinity

Locality No.	Common Name	Scientific Name	Depth	Reference
	Snake	Colubridae		
	Rabbit	*Sylvilagus* sp.		
	Pocket mouse	*Microtus* sp.		
	Harvest mouse	*Reithrodontomys* sp.		
	Pocket gopher	*Thomomys* sp.		
LACM 7758	Threespine stickleback	*Gasterosteus aculeatus*	16 feet	Appendix N
	Meadow vole	*Microtus* sp.		
	Deer mouse	*Peromyscus* sp.		
	Pocket gopher	*Thomomys* sp.		
	Pocket mouse	*Perognathus* sp.		
LACM 6202	Anglerfish	*Chaenophyryne melanorhabdus* *Leptacanthichthys gracilispinis* *Oneirodes* sp. *Borophryne apogon* *Linophryne indica*	Not reported	Appendix N

Source: Link US Paleontological Identification Report and Paleontological Evaluation Report (Appendix N of this EIS)
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 paleontological 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 *Link US Preliminary Geotechnical Report* (Appendix K of this EIS) and record search results (Appendix N of this EIS), the Quaternary alluvium in the majority of the paleontological RSA is underlain by Quaternary older (Pleistocene) deposits at depths between 40 and 70 feet but can be encountered at depths as shallow as 6 feet below the natural ground surface. There is also high-sensitivity Puente Formation at depths between 20 to 50 feet in the northwestern portion of LAUS, 92 feet in the

center portion of the LAUS, and 90 to 100 feet on the southwest side of LAUS within the paleontological RSA. Significant vertebrate fossils have been recorded from the Quaternary older (Pleistocene) deposits and the Puente Formation in proximity to the paleontological RSA (Appendix N of this EIS), resulting in a high paleontological potential.

3.12.5 Environmental Consequences

TOPIC 3.12-A	Built environment and known or unknown archaeological historic properties

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Under the No Action Alternative, no construction activities would occur that would impact any archaeological historic properties or built environment historic properties. Existing conditions would remain the same. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Changes related to other projects could cause physical destruction of, damage to, or alteration of built environment and known or unknown archaeological historic properties depending on the proposed project type, location, footprint, and design. Reasonably foreseeable projects may also change the character of use or diminish the integrity of setting of historic properties. The context and intensity of effects would vary based on the location of other proposed developments. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, an adverse effect could still occur because cultural resources are non-renewable.

Build Alternative

Direct Effects – Construction

Impacts for the 17 historic properties (16 built environment and 1 archeological site) in the portion of the APE in the City of Los Angeles are summarized below, based on the analysis in the *Link US Finding of Effect Report* (Appendix M of this EIS):

- No effect on five viaducts over the Los Angeles River.
- No adverse effect on eight historic properties (LADWP Main Street Center, Mission Tower, William Mead Homes, United States Post Office Los Angeles Terminal Annex, Macy Street School, Los Angeles Plaza Historic District, Denny's Restaurant, and Kelite Factory Plant No. 1).
- Adverse effect on four historic properties (archaeological site CA-LAN-1575/H, the Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and the North Main Street Bridge).

SHPO concurrence on these findings was received on November 20, 2023.

Historic Properties with No Effect

No effect would occur for the following five historic properties, as documented in the *Link US Finding of Effect Report* (Appendix M of this EIS):

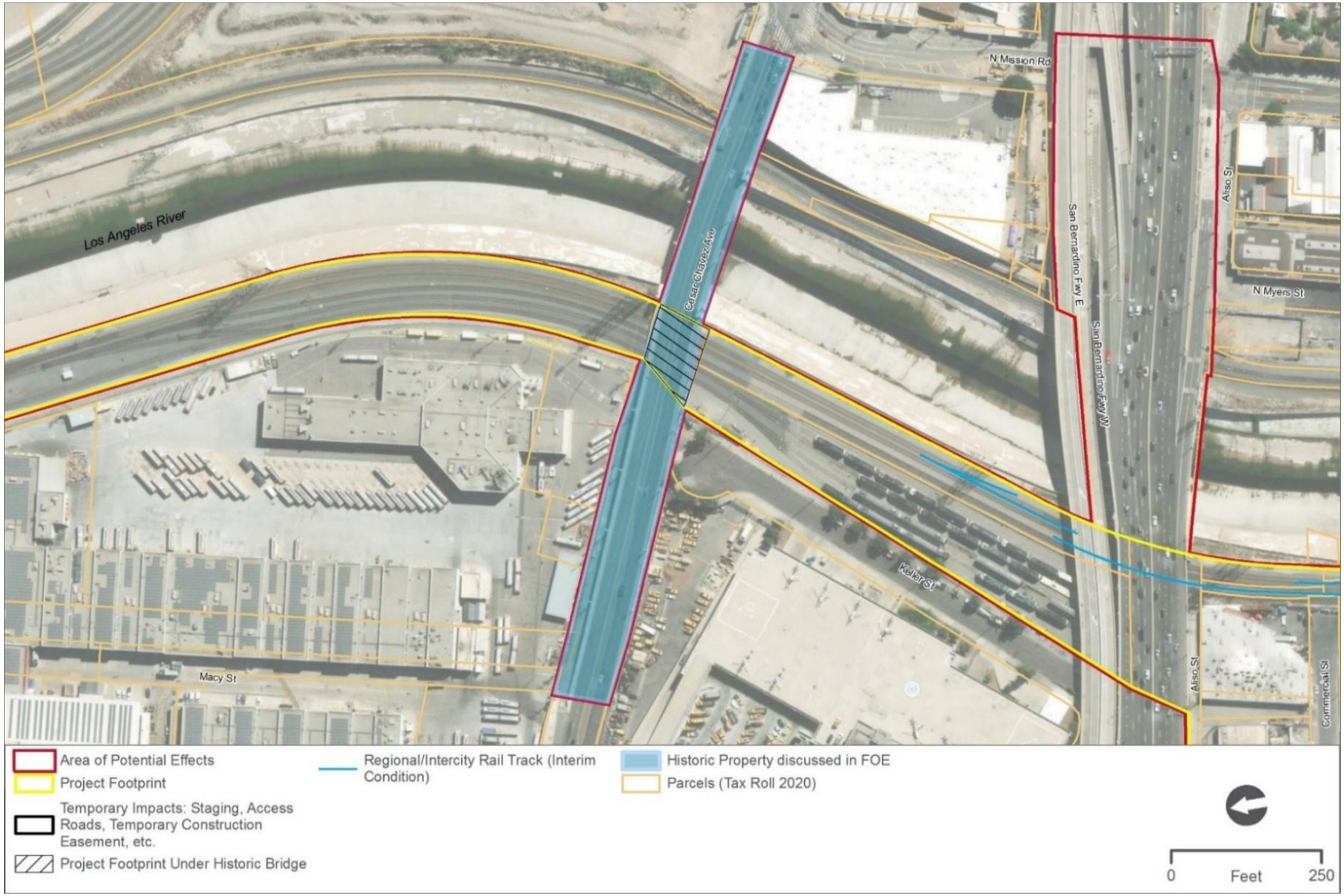
- Cesar Chavez Avenue Viaduct over the Los Angeles River (Figure 3.12-5)
- First Street Viaduct over the Los Angeles River (Figure 3.12-6)
- Fourth Street Viaduct over the Los Angeles River (Figure 3.12-7)
- Seventh Street Viaduct over the Los Angeles River (Figure 3.12-8)
- Olympic Boulevard (Ninth Street) Viaduct over the Los Angeles River (Figure 3.12-9)

The Build Alternative would not encroach upon the boundaries of these historic properties, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of these historic properties. Track work would occur where the BNSF tracks pass under each bridge structure; however, in all cases the Project Footprint would be outside the vertical boundary of the historic properties.

The Build Alternative would not change the character of the use or physical setting of these historic properties in a manner that would diminish their integrity, nor would the Build Alternative affect the use of the historic properties as bridges used to carry vehicular traffic over rail traffic. The proposed track work along the main line would pass through the same piers of each bridge at the same elevation as the existing tracks. The BNSF tracks, ties, and ballast constitute “physical features within the setting” of the bridges, but 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. The elevated rail yard and either rail yard canopy design option would not be visible from the bridges due to the distance and intervening buildings.

Trucks, bulldozers, excavators, and other construction equipment would be used for work in railroad ROW, but there would be no high-intensity activities, including pile driving, at these locations. Although construction would take place in the general vicinity of these historic properties, there is not a potential for vibration damage during construction due to the intervening distance, the structure type of the historic properties (reinforced concrete), and the nature of the proposed activities.

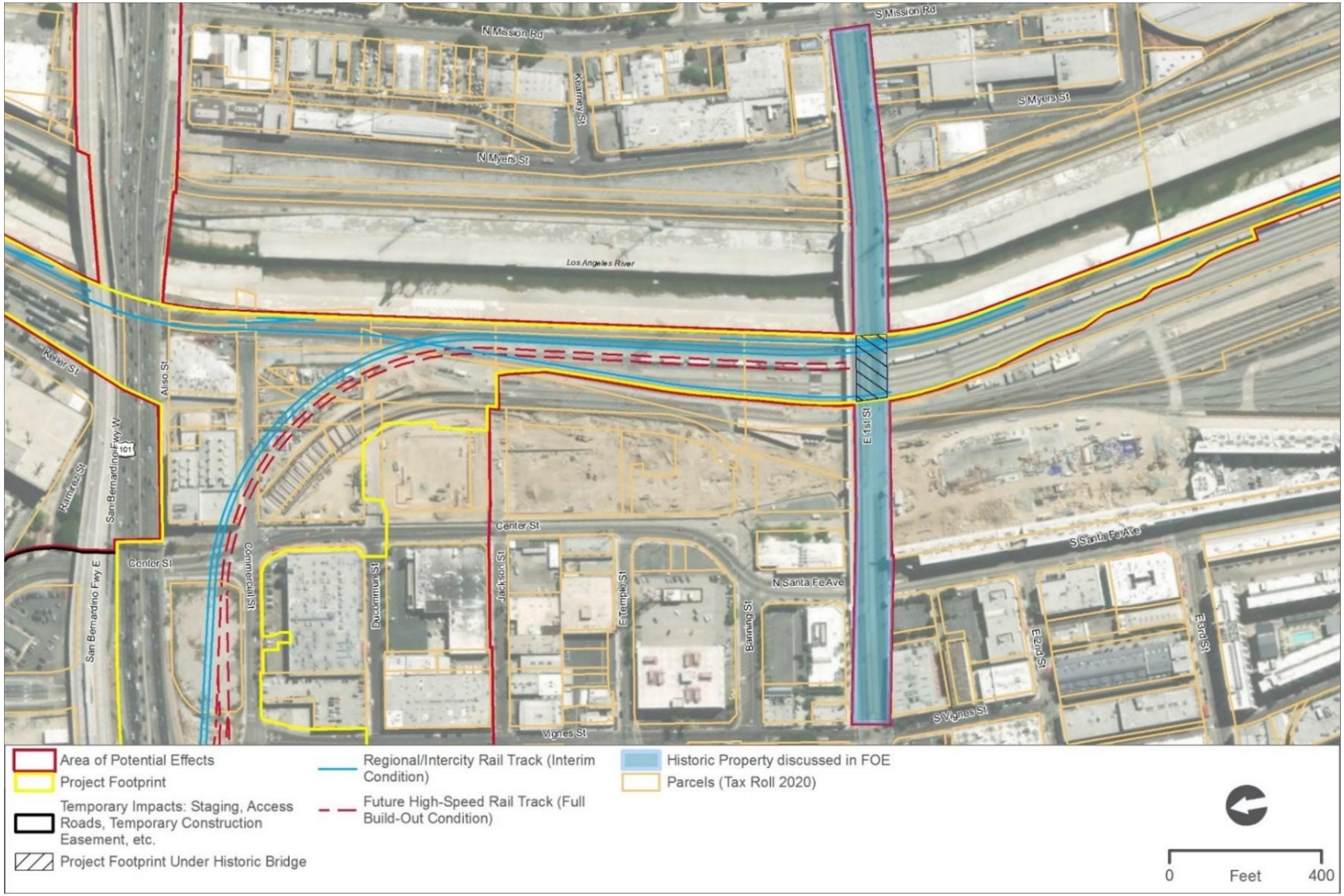
Figure 3.12-5. Cesar Chavez Avenue Viaduct (Map Reference #7) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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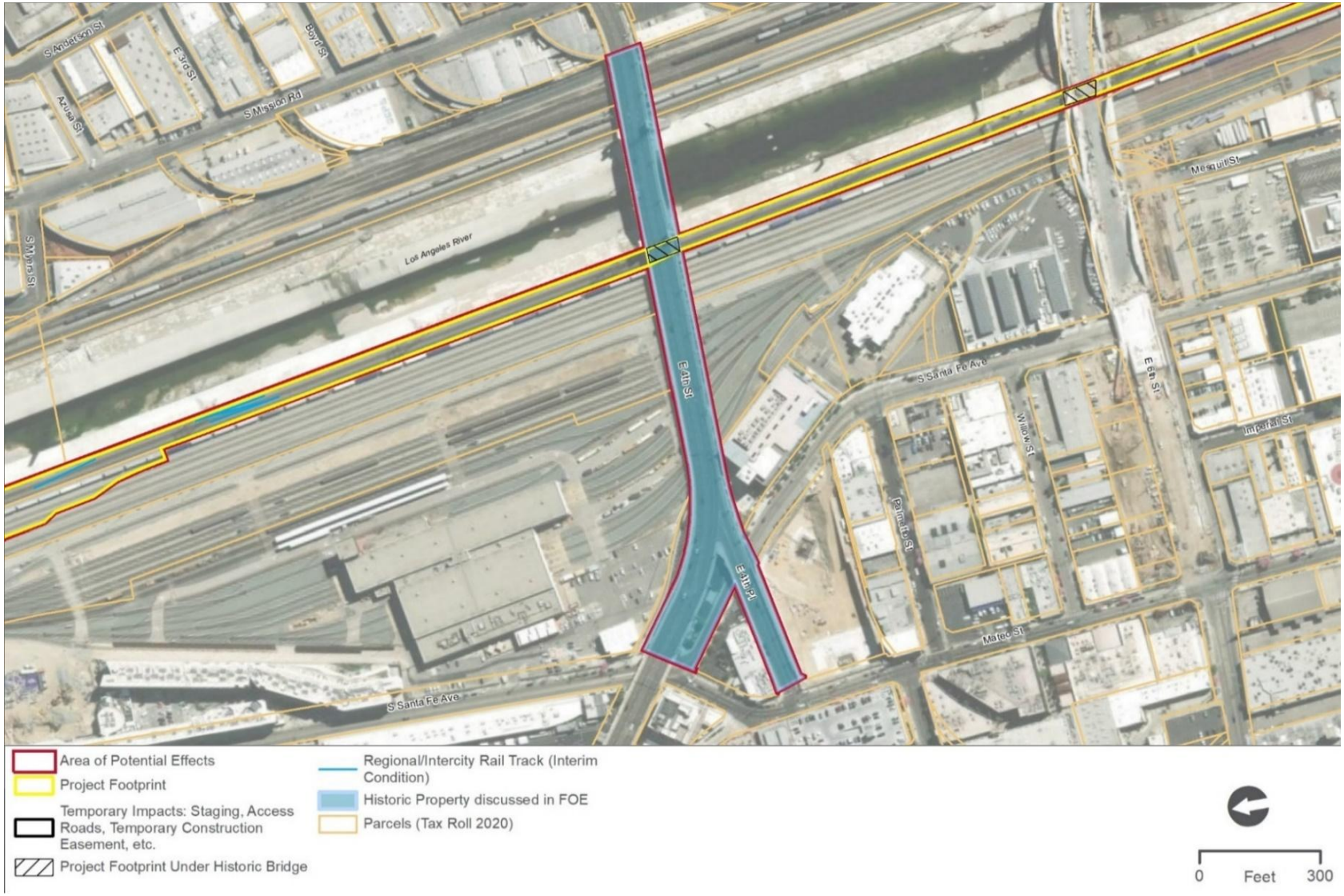
Figure 3.12-6. First Street Viaduct (Map Reference #8) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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Figure 3.12-7. Fourth Street Viaduct (Map Reference #9) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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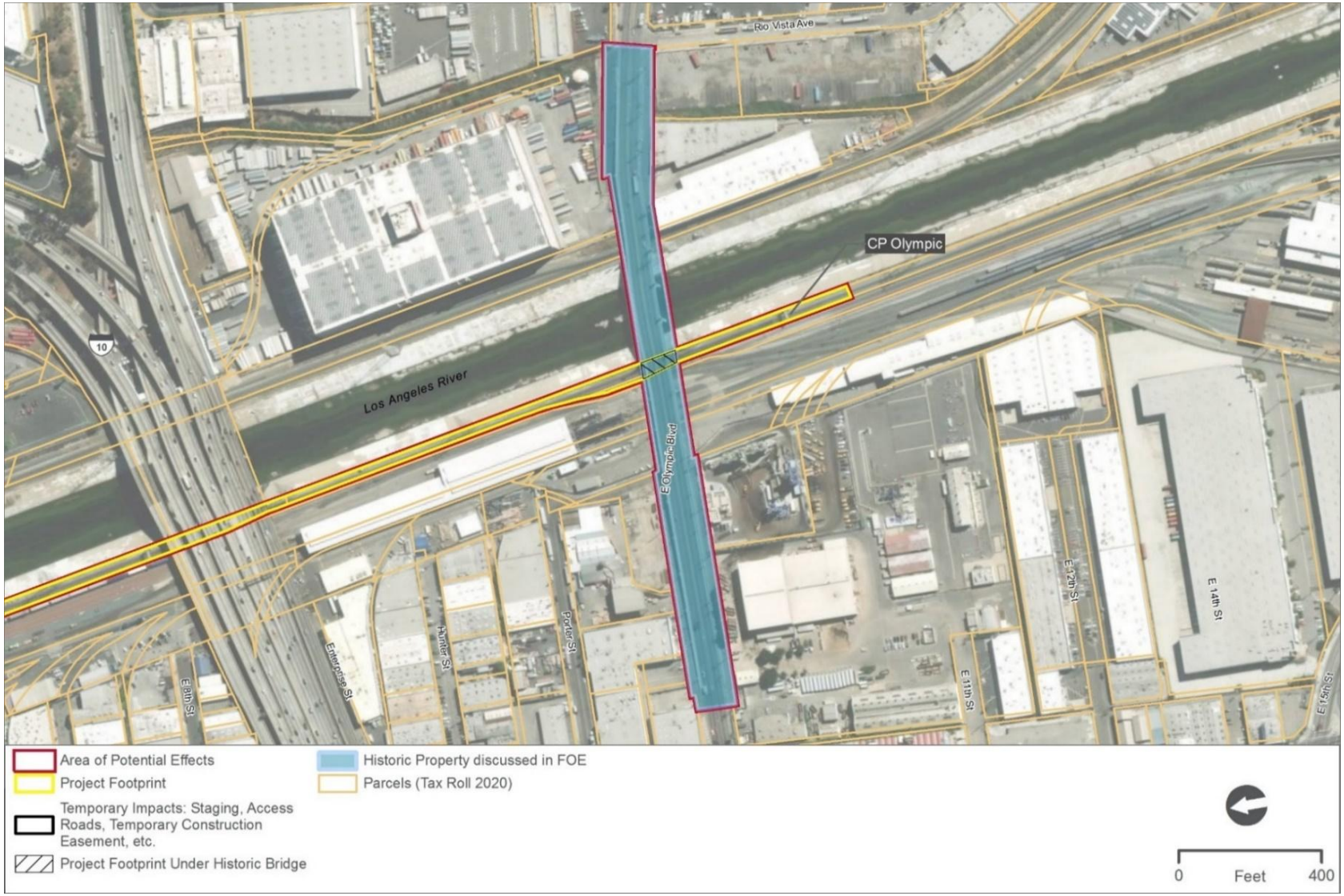
Figure 3.12-8. Seventh Street Viaduct (Map Reference #10) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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Figure 3.12-9. Olympic Boulevard Viaduct (Map Reference #11) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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Historic Properties with No Adverse Effect

No adverse effect on the following eight historic properties would occur, as documented in the *Link US Finding of Effect Report* (Appendix M of this EIS).

Los Angeles Department of Water and Power Main Street Center

The Build Alternative would not encroach upon the boundaries of this historic property, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The property is located adjacent to the main line railroad tracks in the Throat Segment. The Build Alternative would introduce a retaining wall within the railroad ROW adjacent to the property boundary, facing the rear of nearby contributing buildings, but it would not require acquisition of any portion of the historic property nor any of the contributing buildings (Figure 3.12-10). To prevent accidental damage to historic properties during construction, Mitigation Measure CUL-2, discussed in Section 3.12.6, requires protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the industrial use of the historic property. The LADWP Main Street Center property has a utilitarian/industrial character, and the visual elements associated with the new retaining wall supporting railroad tracks at the same general location within the property's setting would not alter this character or affect the physical features of the property that contribute to its historic significance. The elevated rail yard and either rail yard canopy design option would not be visible from the property because of intervening buildings, including William Mead Homes and United States Post Office Los Angeles Terminal Annex.

Construction activities would be limited to the railroad ROW and would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the type of the contributing buildings (reinforced concrete) and the nature of the proposed construction activity.

Mission Tower

The Build Alternative would not encroach upon the boundaries of this historic property, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. Mission Tower is surrounded by railroad infrastructure at Mission Junction, in the Throat Segment. Approximately 120 feet north of the property, the Build Alternative would include construction of an additional lead track and realign and elevate the existing tracks to accommodate the elevated rail yard, but it would not require acquisition of any portion of the historic property (Figure 3.12-11). Mitigation Measure CUL-2 is proposed to prevent accidental damage to historic properties during construction.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the use of the historic property. The historic property is not currently in use, and no new use is proposed. The elevated tracks would be visible from the north façade of the historic property and would also appear in the background of the Mission Tower when viewed from the historic property's south elevation. The newly elevated rail yard and either rail yard canopy design option would not be visible from Mission Tower. Views of or from Mission Tower are not character-defining and no physical changes associated with proposed infrastructure would affect the characteristics that qualify Mission Tower for listing in the NRHP. The elevated tracks would be recognizable as new but generally perceived as similar in form to existing rail infrastructure and supporting rail activities similar to those that define the physical context of the resource. As a rail signal tower, rail lines and associated infrastructure have always been part of the setting of this historic property.

Construction activities near the Mission Tower property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (engineered concrete) and the nature of the proposed construction activity.

William Mead Homes

Although the Build Alternative would require a temporary encroachment upon the boundary of the William Mead Homes property, it would not require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The property is located adjacent to the main line railroad tracks in the Throat Segment. The Build Alternative would replace an existing modern fence with a new retaining wall adjacent to the rear of the historic property, within the existing rail ROW, but would not require acquisition of any portion of the historic property (Figure 3.12-12). The proposed new retaining wall would be taller than the existing fence and would additionally function as a sound wall. Construction of the new retaining wall would require a TCE to allow excavation of wall footings and equipment staging. Although character-defining hardscape features such as streets, sidewalks, and parking lots may be temporarily affected due to the TCE, no permanent encroachment or effects on the character-defining features of the property are anticipated. To prevent accidental damage to historic properties during construction, Mitigation Measure CUL-2 is proposed to prevent accidental damage to historic properties during construction.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the residential use of the historic property. The introduction of a new retaining wall at the rear of the property would not alter the residential character of the contributing buildings on the property. The physical setting at the rear of the property, currently delimited by a metal fence, consists of railroad infrastructure. The new retaining wall would be higher than the existing fence and act as a visual screen that would shield the railroad infrastructure—including the elevated rail yard and either rail

yard canopy design option—from view. The existing fence and intervening buildings slightly obscure the view of downtown Los Angeles from portions of the property along Bolero Lane and near the baseball field. Due to the increased height of the proposed retaining wall, the view of downtown Los Angeles in the distance would be further obscured. Views of downtown Los Angeles have changed substantially since the property's period of significance in 1943–1952 and the character-defining features of the William Mead Homes property are unrelated to the setting. The proposed changes in the setting of the historic property would not affect the physical features of the property that contribute to its historic significance.

Construction activities in the railroad ROW near the property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place approximately 60 feet from the closest building and would require a TCE at the rear of the property, there is not a potential for vibration damage during construction due to the type of the contributing buildings (reinforced masonry) and the nature of the proposed construction activity.

United States Post Office Los Angeles Terminal Annex

The Build Alternative would not encroach upon the boundaries of this historic property, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The southeastern corner of the Terminal Annex is adjacent to the Cesar Chavez Avenue Undercrossing and its rear elevation faces the LAUS rail yard, in the Concourse Segment. The Build Alternative would replace the Cesar Chavez Avenue Undercrossing with a new railroad bridge and construct the elevated LAUS rail yard adjacent to the rear of the Terminal Annex property, but it would not require acquisition of any portion of the historic property (Figure 3.12-13). Mitigation Measure CUL-2 is proposed to prevent accidental damage to historic properties during construction.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the present adaptive reuse of the historic property as a data center. The new undercrossing would be constructed in the same location as the existing bridge to support tracks that would be elevated 10 to 15 feet higher than the existing top of rail at this location, and new retaining walls built to support the elevated rail yard would reach a similar height as the bridge. The new bridge, elevated rail yard, and Rail Yard Canopy Design Option 2 (grand canopy) would be visible from the side and rear elevations of the building, but they would not be visible when a viewer stands in front of its primary elevation due to the considerable height and length of the building. Similar to the present condition, the individual canopies of Rail Yard Canopy Design Option 1 would only be visible from the rear of the Terminal Annex property but not from its front or side elevations. The elevated rail yard, new bridge, and rail yard canopy design options would be recognizable as new but generally perceived as similar in form to existing rail infrastructure and supporting rail activities similar to those that define the physical context of the resource. Since construction of the Terminal Annex, the LAUS rail yard and associated infrastructure have always been part of the setting of

this historic property. Moreover, the significance of the historic property is due to its architectural quality, and the character-defining features of the building are unrelated to the setting.

Construction activities near the Terminal Annex property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (reinforced concrete) and the nature of the proposed construction activity.

Macy Street School

The Build Alternative would not encroach upon the boundaries of this historic property, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The property is near the LAUS rail yard, with its side elevation facing the rear of the car supply building, retaining wall, and Vignes Street Undercrossing, in the Concourse Segment. The Build Alternative includes construction of the elevated LAUS rail yard, demolition of the car supply building, and replacement of the Vignes Street Undercrossing with a new bridge, but it would not require acquisition of any portion of the historic property (Figure 3.12-14). Mitigation Measure CUL-2 is proposed to prevent accidental damage to historic properties during construction.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the present adaptive reuse of the historic property as a commercial building. The new undercrossing would be constructed in the same location as the existing bridge to support tracks that would be elevated 10 to 15 feet higher than the existing top of rail at this location, and new retaining walls built to support the elevated rail yard would reach a similar height as the bridge. Primary views toward Macy Street School are toward the north from Cesar Chavez Avenue. The new bridge, elevated rail yard, and both rail yard canopy design options would be visible from the front and side elevations of the building. While the setting to the west of Macy Street School would change with new infrastructure elements proposed, the setting does not contribute to the historic significance of the property under Criterion A for ethnic heritage or Criterion B for association with Principal Sterry. The proposed changes in the setting of the historic property would not affect the physical features of the property that contribute to its historic significance.

Construction activities near the Macy Street School property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (reinforced masonry) and the nature of the proposed construction activity.

Los Angeles Plaza Historic District

The Build Alternative would not encroach upon the boundaries of the Los Angeles Plaza Historic District, nor would it require any construction activities that would cause physical destruction of,

damage to, or alteration of this historic property. The property is located west of Alameda Street and Los Angeles Street, opposite the LAUS terminal building. The Build Alternative includes construction of the expanded passageway and elevated rail yard approximately 600 and 900 feet from the closest contributors of the Los Angeles Plaza Historic District, respectively (Figure 3.12-15). Given the considerable distance, there is not a potential for accidental damage to occur to any portion of the property.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the cultural, recreational, commercial, and other uses of the historic property. Proposed infrastructure may be visible from the Plaza kiosk area of the district, facing east. If individual canopies are constructed over the rail yard (Rail Yard Canopy Design Option 1), the canopies would not be visible from the historic property. If the grand canopy is constructed (Rail Yard Canopy Design Option 2), the canopy would be up to 70 feet above the elevated rail yard, and a portion of it may be visible from the Plaza area between and behind the two existing buildings, LAUS and the Metropolitan Water District Headquarters. Direct views of LAUS are often obscured from the Plaza due to the presence of buildings and trees, depending on the location. The Los Angeles Plaza Historic District has a primarily cultural/recreational character, and the visual elements associated with the proposed infrastructure would not result in changes to the physical features of the property that contribute to its historic significance. While the grand canopy structure may be visible from the Los Angeles Plaza Historic District, the change in view from this historic property would not be considered adverse because none of the characteristics that qualify the Los Angeles Plaza Historic District for the NRHP would have their integrity diminished, and the views east from the Plaza have changed substantially since the end of the period of significance in 1932 due to the construction of LAUS, modernization of Alameda and Los Angeles Streets, and construction of US-101, the El Monte Busway, high-rise condominium buildings, Gateway Plaza, and the Metropolitan Water District Headquarters.

Construction activities would be limited to the railroad ROW and would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place in the general vicinity of the historic property, there is not a potential for vibration damage during construction due to the distance from the construction area (about 600 feet) and the nature of the proposed construction activity.

Denny's Restaurant

Although the Build Alternative would temporarily encroach upon the parcel boundaries of the Denny's Restaurant, it would not require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The property is located north of the El Monte Busway and east of LAUS. The Build Alternative includes construction of a new viaduct over US-101, a run-through track embankment between US-101 and Commercial Street, and the elevated rail yard approximately 400 and 500 feet from the property, respectively (Figure 3.12-16). The Build Alternative would require use of the parking lot in the Denny's

Restaurant parcel as a temporary staging area; however, the Denny's Restaurant building itself would not be physically disturbed or altered. Mitigation Measure CUL-2 is proposed to prevent accidental damage to historic properties during construction.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the use of the historic property as a restaurant. The physical setting of the property would be unchanged after construction is completed. Views from Denny's Restaurant toward the LAUS rail yard and either canopy design option would be largely obscured by Patsaouras Plaza, the LAUS east portal, and the Gateway Plaza tower, and views toward the new viaduct would be blocked by the El Monte Busway and US-101. Moreover, the significance of the historic property is due to its architectural quality, and the character-defining features of the building are unrelated to the setting. The proposed changes in the setting of the historic property would not affect the physical features of the property that contribute to its historic significance.

Construction activities would be limited to the rail yard, the US-101 ROW, and the Commercial Street corridor. Construction of the run-through track viaduct would include high-intensity activities such as pile driving. Although pile driving would take place in the general vicinity of the historic property, there is not a potential for vibration damage during construction due to the distance from the construction area (about 400 feet) and the building type (reinforced concrete).

Kelite Factory Plant No. 1

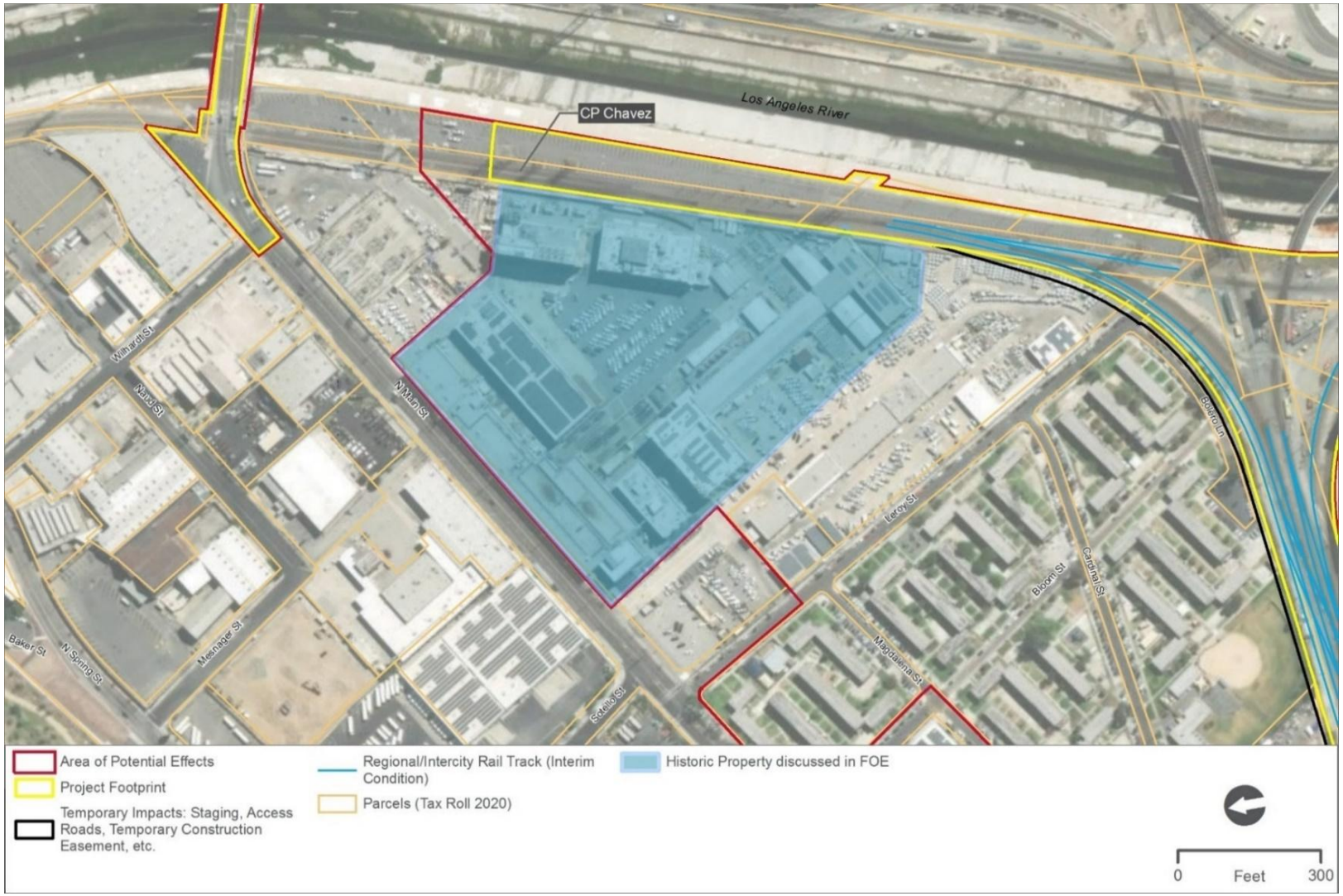
The Build Alternative would not encroach upon the boundaries of this historic property, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. The legal parcel of the property is adjacent to the railroad ROW in the Throat Segment, but the eligible Kelite Factory Plant No. 1 building, which faces Main Street and Elmyra Street, is at least 500 feet from the Project Footprint (Figure 3.12-17). The Build Alternative would require replacement of an existing fence with a new retaining wall adjacent to the parcel, within the existing rail ROW, but would not require acquisition of any portion of the parcel. Given the considerable distance, there is not a potential for accidental damage to occur to any portion of the property.

The Build Alternative would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Build Alternative affect the use of the historic property. The historic property is not currently in use, and no new use is proposed. The new retaining wall and concourse-related improvements, elevated rail yard, and either canopy design option would not be visible from the property because of intervening buildings (Kelite Factory Plants No. 2 and 3) located on the same parcel. The physical setting of the property includes equipment storage and other industrial uses on the same parcel and residential uses at William Mead Homes, facing the property across Elmyra Street. The Build Alternative would not result in any changes to the physical setting of the Kelite Factory Plant No. 1 building.

Construction activities would be limited to the railroad ROW and would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place in the general vicinity of the historic property, there is not a potential for vibration damage during construction due to the distance from the construction area (about 500 feet), the building type (reinforced masonry), and the nature of the proposed construction activity.

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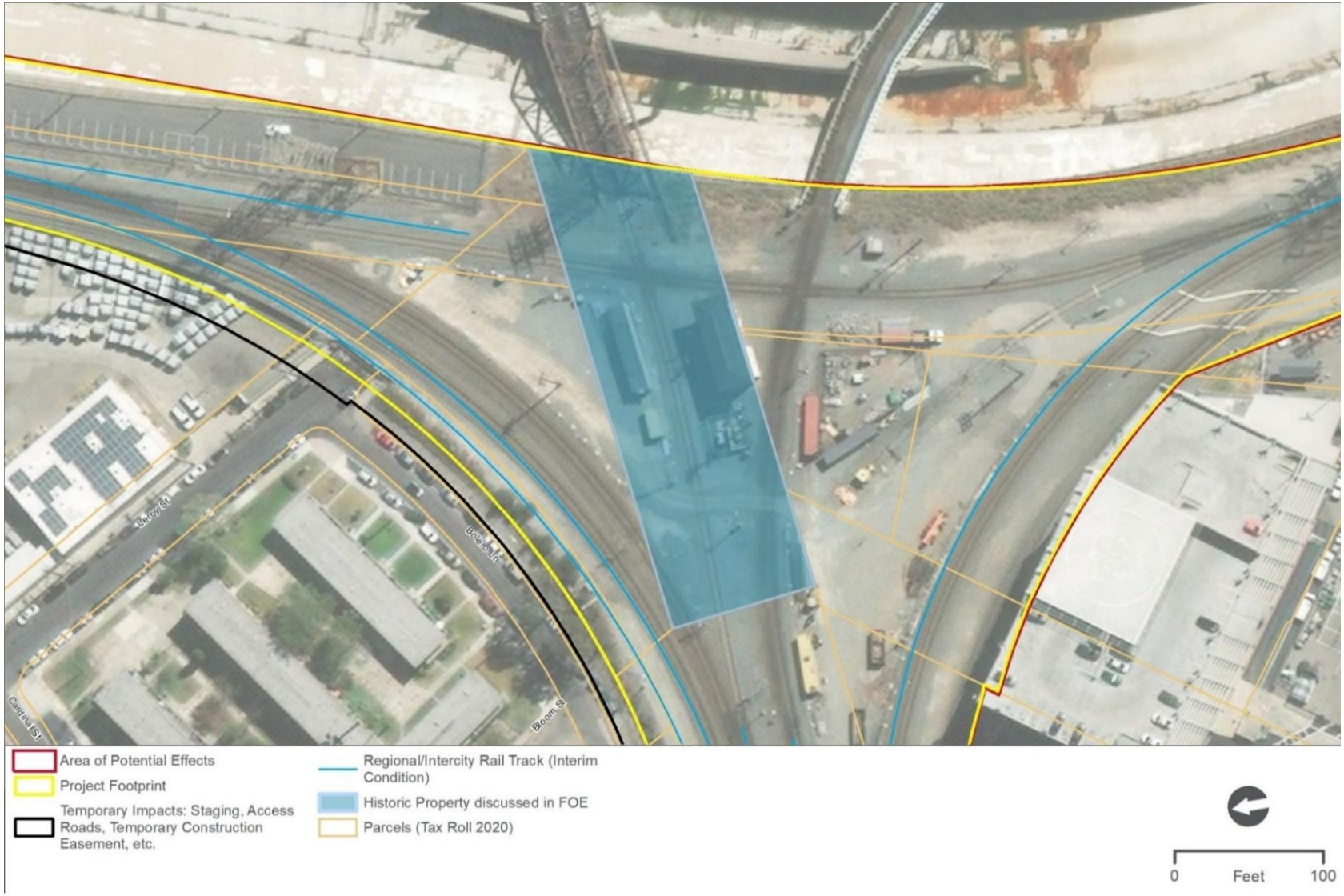
Figure 3.12-10. Los Angeles Department of Water and Power Main Street Center (Map Reference #4) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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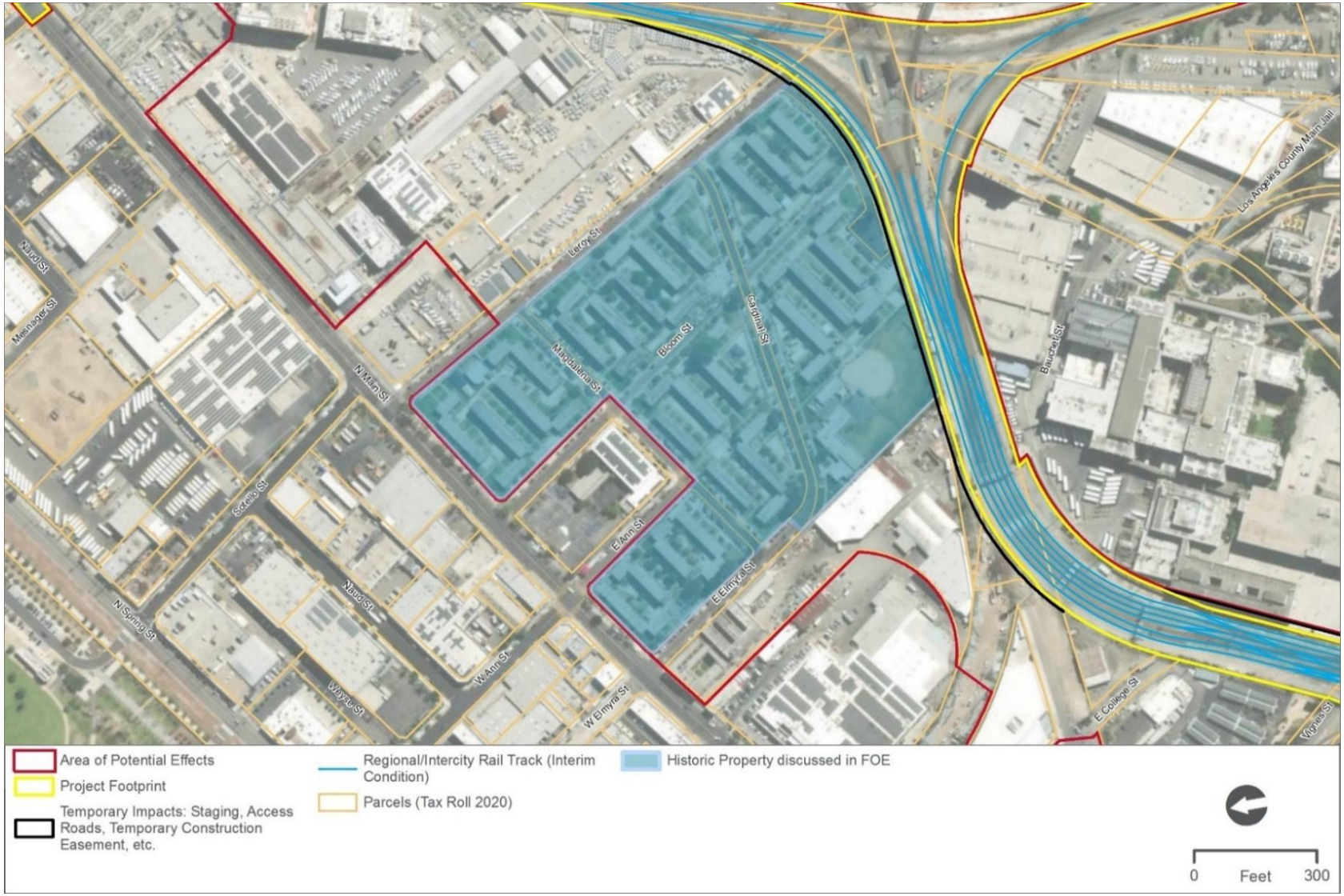
Figure 3.12-11. Mission Tower Historic (Map Reference #6) Property Boundary and the Build Alternative



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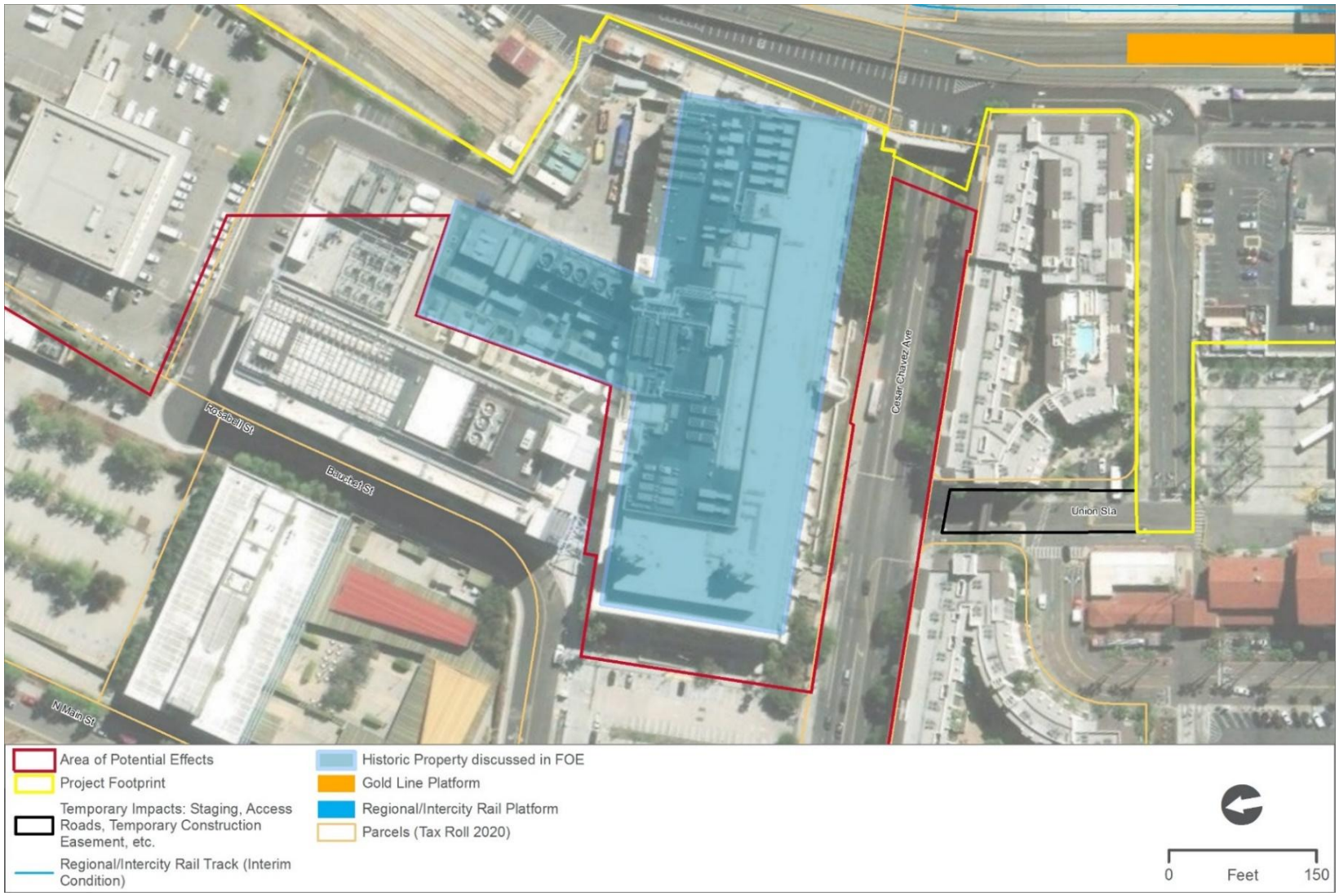
Figure 3.12-12. William Mead Homes (Map Reference #5) Historic Property Boundary and the Build Alternative



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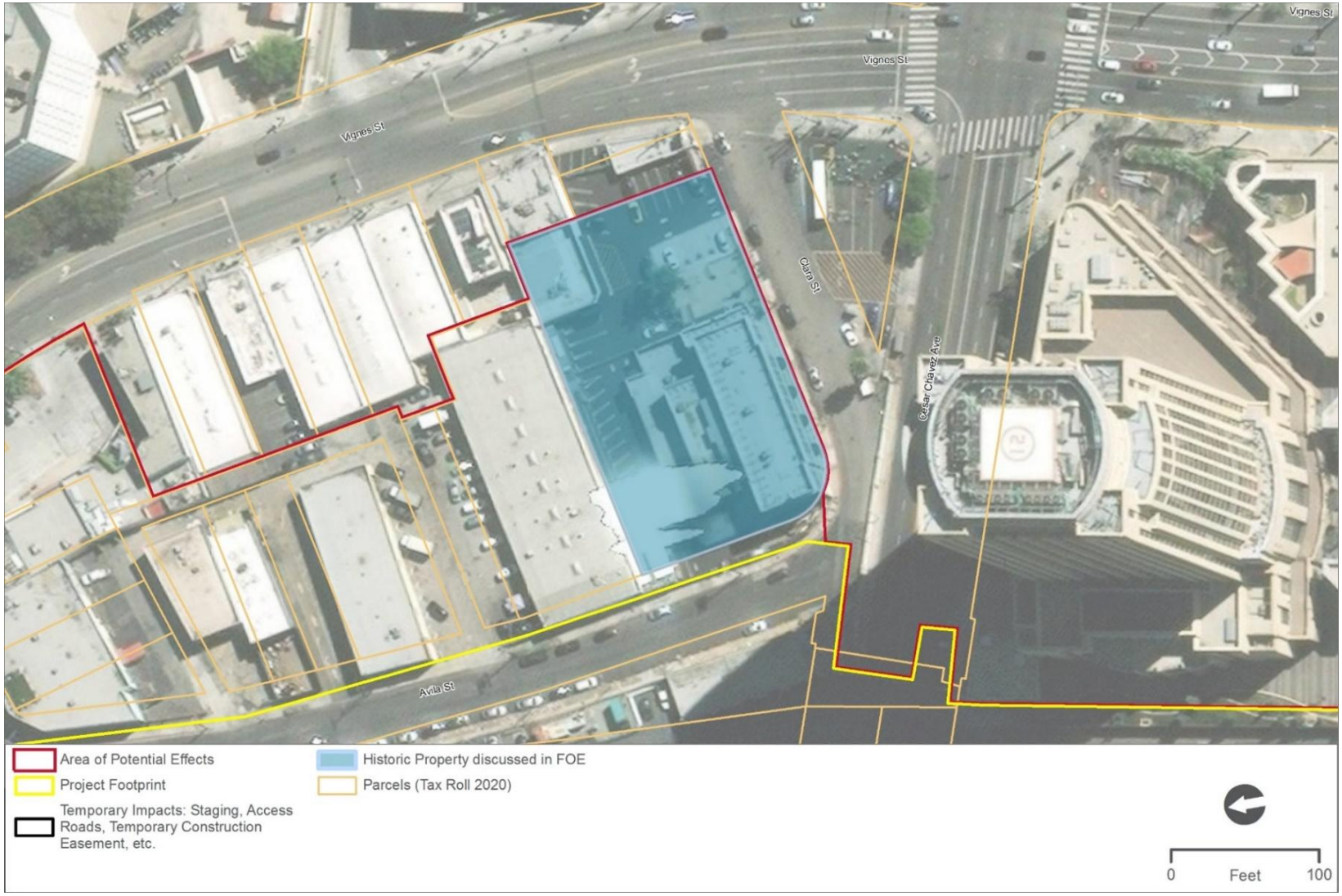
Figure 3.12-13. United States Post Office Terminal Annex (Map Reference #2) Historic Property Boundary and the Build Alternative



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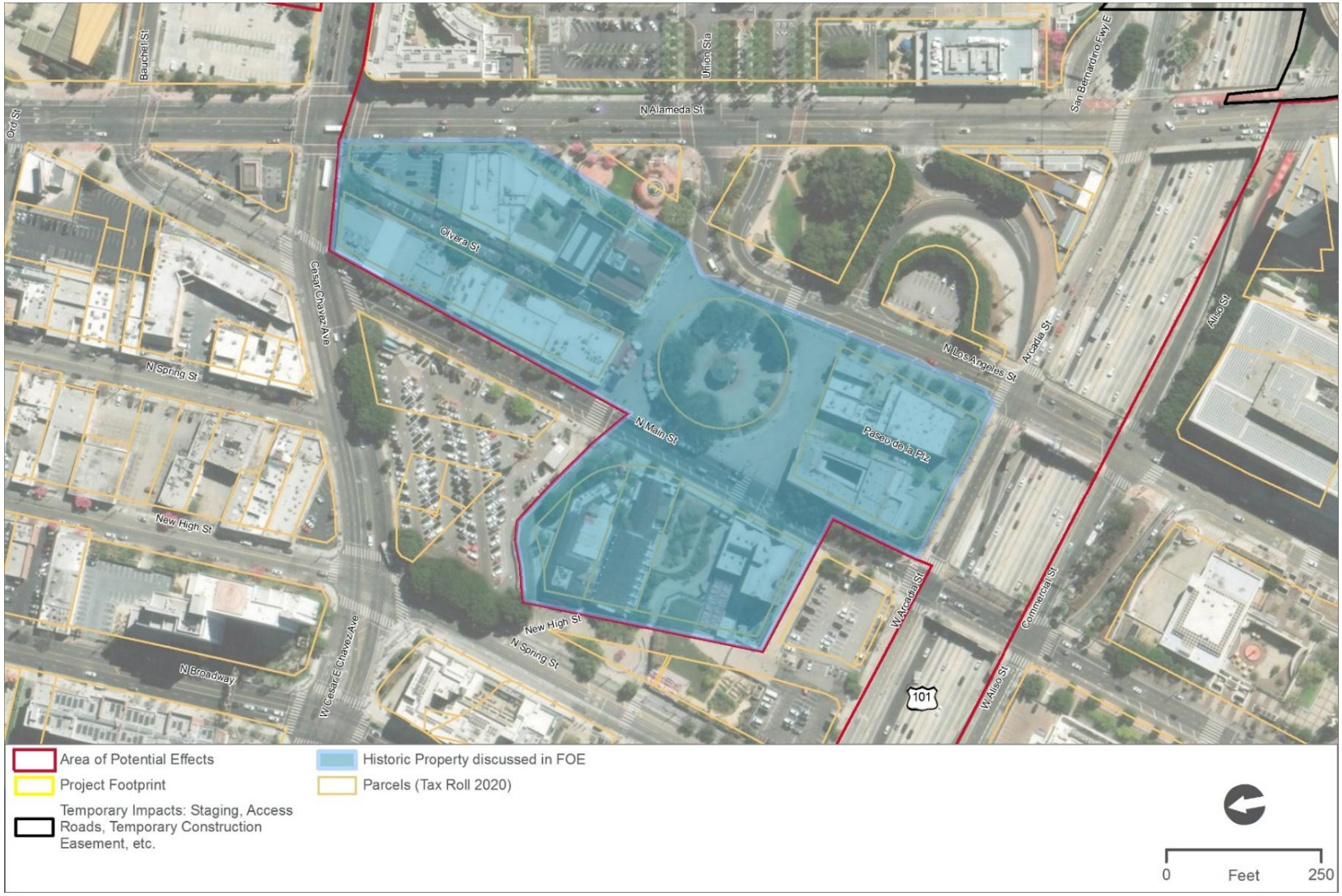
Figure 3.12-14. Macy Street School (Map Reference #13) Historic Property Boundary and the Build Alternative



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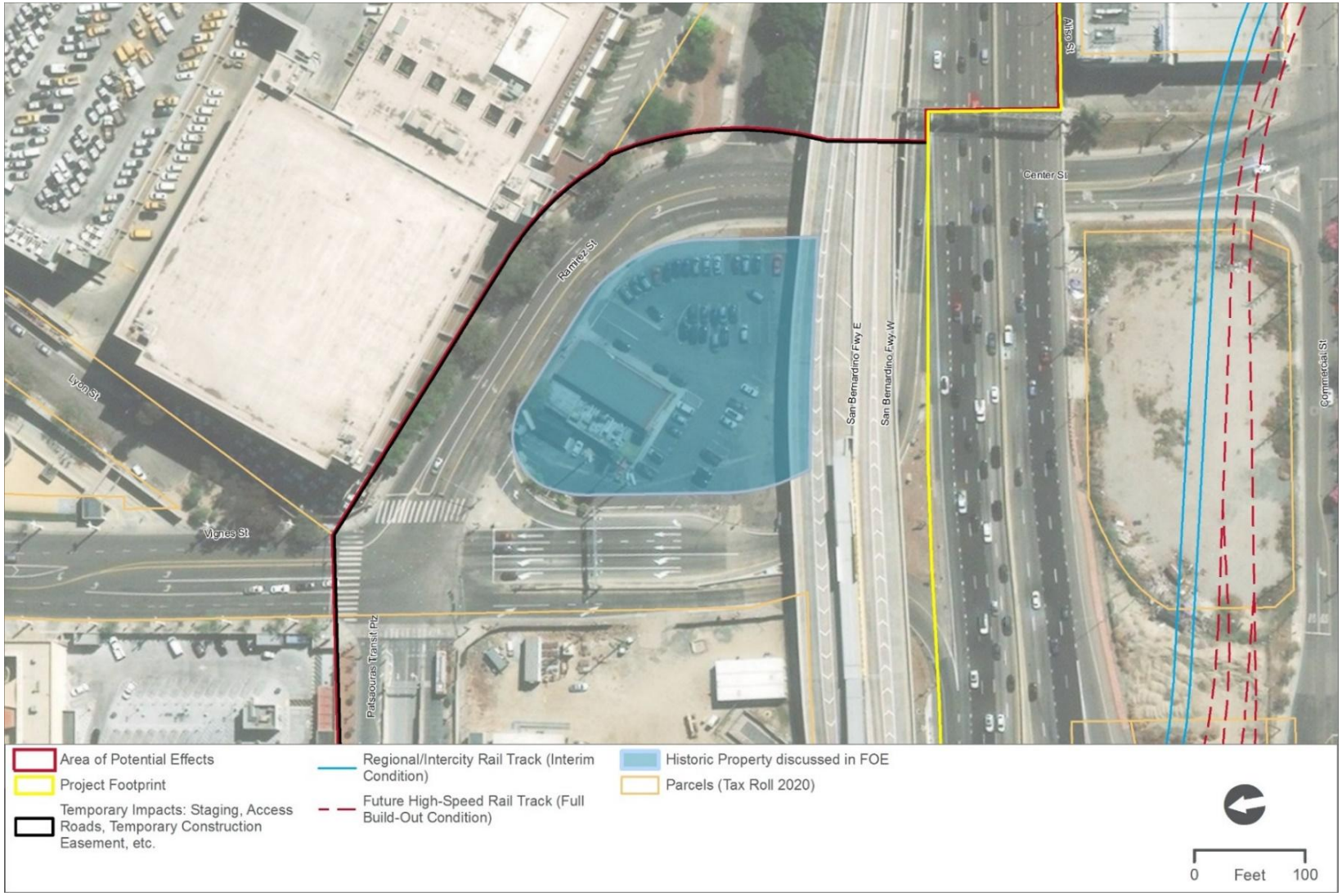
Figure 3.12-15. Los Angeles Plaza Historic District (Map Reference #3) Historic Property Boundary and the Build Alternative



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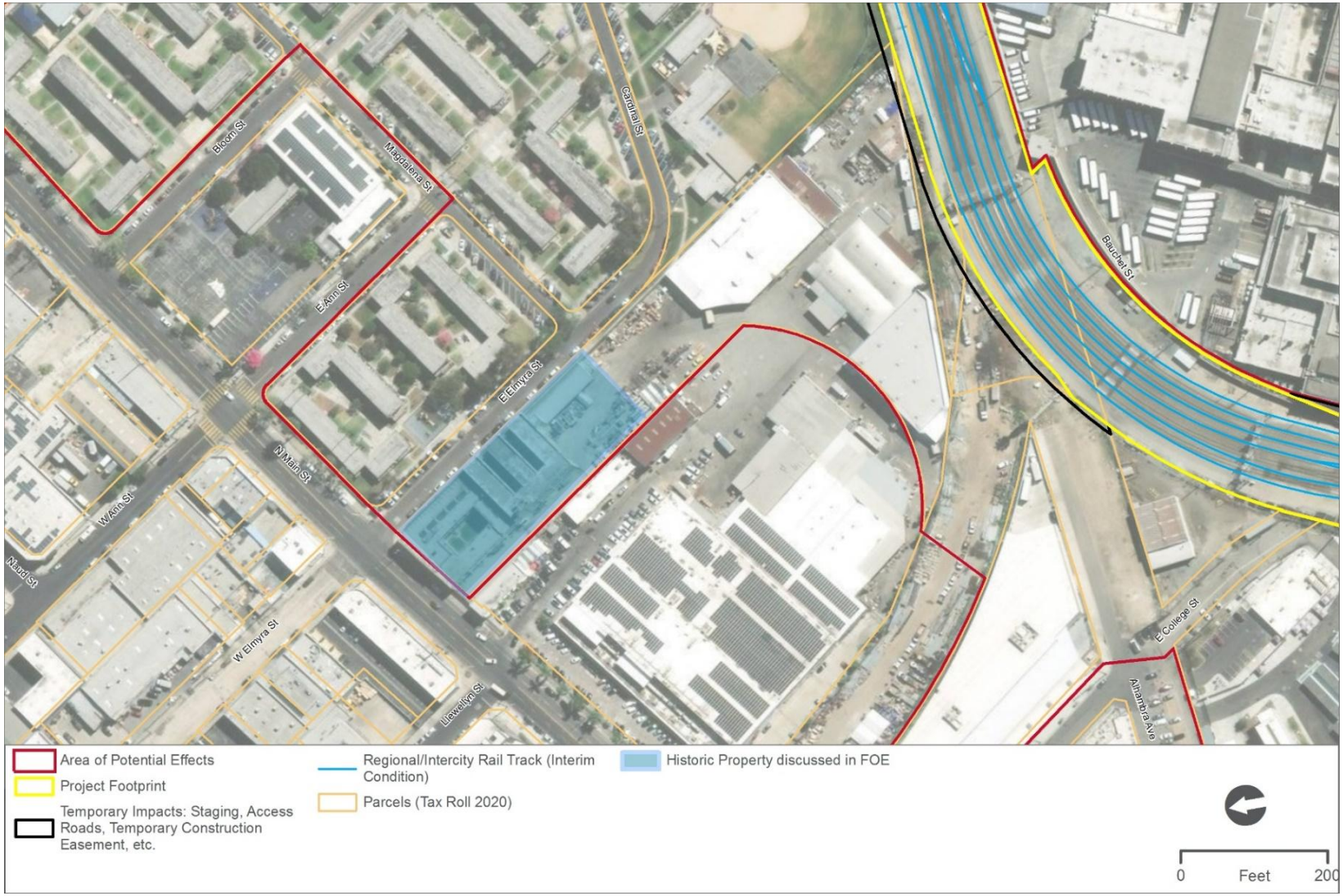
Figure 3.12-16. Denny's Restaurant (Map Reference #14) Historic Property Boundary and the Build Alternative



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Figure 3.12-17. Kelite Factory Plant No. 1 (Map Reference #16) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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Historic Properties with an Adverse Effect

Based on the criteria of adverse effect at 36 CFR § 800.5 and, based on impacts associated with the Build Alternative and rail yard canopy design options considered, a direct adverse effect would occur on one archaeological historic property and three built environment historic properties, as detailed below and documented in the *Link US Finding of Effect Report* (Appendix M of this EIS). Section 3.12.6 contains measures proposed to avoid, minimize, or mitigate adverse effects the Build Alternative may have on these four historic properties. These proposed mitigation measures are provided as a starting point for discussion and would be fully developed through Section 106 consultation and memorialized in a PA.

Archaeological Site CA-LAN-1575/H

The Build Alternative would result in an adverse effect on archaeological site CA-LAN-1575/H, which has been determined eligible for listing in the NRHP (Table 3.12-7). Although a large percentage of the known site has been covered in artificial fill, Table 3.12-2 shows that the proposed depth of construction activities ranges between 5 and 100 feet below the present ground surface. Many activities would penetrate below the maximum recorded level of artificial fill and would likely impact intact archaeological deposits.

Table 3.12-7. Application of Criteria of Adverse Effect for CA-LAN-1575/H

Criteria of Adverse Effect (36 CFR § 800.5(a)(2))	Evaluation
(i) Physical destruction of or damage to all or part of the property	Project activities associated with the construction of the elevated rail yard, concourse construction, and structural support components of the Project would include excavations, borings, utility relocation, and drainage improvements that vary in depth, but could extend up to 100 feet below existing ground surface and that may cause the physical destruction of or damage to components of CA-LAN-1575/H.
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (36 CFR 68) and applicable guidelines	**Criterion does not apply.** CA-LAN-1575/H would not undergo any alterations due to restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access.
(iii) Removal of the property from its historic location	**Criterion does not apply.** CA-LAN-1575/H would not be removed from its historic location.
(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance	**Criterion does not apply.** There would be no changes to the character of the property's use or to physical features within the property's setting that contributes to the historic significance of CA-LAN-1575/H. The resource does not retain integrity of setting.

Table 3.12-7. Application of Criteria of Adverse Effect for CA-LAN-1575/H

Criteria of Adverse Effect (36 CFR § 800.5(a)(2))	Evaluation
(v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features	**Criterion does not apply.** The introduction of visual, atmospheric, or audible elements would not affect the NRHP-eligible components of CA-LAN-1575/H. The resource does not retain integrity of setting and the introduction of visual, atmospheric, and audible elements from the Project would be consistent with the existing setting.
(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization	**Criterion does not apply.**
(vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance	**Criterion does not apply.**

Source: Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
CFR=Code of Federal Regulations; NRHP=National Register of Historic Places

Mitigation Measure CUL-1 (described in Section 3.12.6) is proposed to minimize adverse effects from the Build Alternative on CA-LAN-1575/H.

Mitigation Measure CUL-1 requires preparation of an Archaeological Treatment Plan (ATP) prior to construction that details the actions to be taken to resolve adverse effects on historic property CA-LAN-1575/H and the procedures to address accidental discoveries, and would include, at a minimum, the following elements:

- A research design for evaluating the significance of any archaeological features or deposits that may be encountered during construction
- A site-specific sensitivity model to guide efforts to avoid or minimize adverse effects on known portions of CA-LAN-1575/H
- Protocols for phased testing, significance evaluation, and data recovery of known features and deposits
- Protocols for archaeological and Native American monitoring
- Provisions for the accidental discovery of archaeological features or deposits during construction

- Provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony
- Provisions for the development of a public participation or outreach plan for CA-LAN-1575/H
- Provisions for the development of cultural resource WEAP training
- Standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities
- Guidelines for the ownership and curation of archaeological data and collections

Los Angeles Union Passenger Terminal

Physical Effects on Qualifying Characteristics

Architecturally significant buildings and spaces that comprise the west side of the station, including the passenger waiting area, former ticketing room, Harvey House restaurant, and courtyards, would not be altered; however, the Build Alternative would destroy or substantially alter some of the character-defining features that represent the interface of passengers between the station and tracks (Figure 3.12-18). In the interim condition (as early as 2026), demolition of Platform 4 and the associated butterfly shed canopy would occur to implement new run-through service. In the full build-out condition (as early as 2031), the rail yard would be elevated 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 expanded passageway would also be constructed in the full build-out condition, along with either an individual canopy covering each of the platforms (Rail Yard Canopy Design Option 1) or a grand canopy over the entirety of the rail yard (Rail Yard Canopy Design Option 2). A portion of the following character-defining features that qualify LAUS for listing in the NRHP, as identified on Figure 3.12-19, would be destroyed or substantially altered by implementation of the Build Alternative:

- **Pedestrian Passageway (Tunnel):** – The concourse related improvements would include a 140-foot-wide expansion of the passageway, which would require the demolition of the narrow, historic pedestrian passageway to provide additional passenger travel-path convenience and options with new elevators, escalators, and stairs to achieve compliance with CBC egress and ADA standards. The concourse-related improvements associated with the expanded passageway would be of modern design and materials and would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS.
- **Passenger Ramps, Platform Railings, Solid Balustrades** – The passenger ramps, platform railings, and solid balustrades would be demolished to make space for the construction of the expanded passageway and other concourse-related improvements. The concourse-related improvements would include multiple egress routes, with public

areas integrated into the design that also achieve compliance with CBC egress and ADA standards.

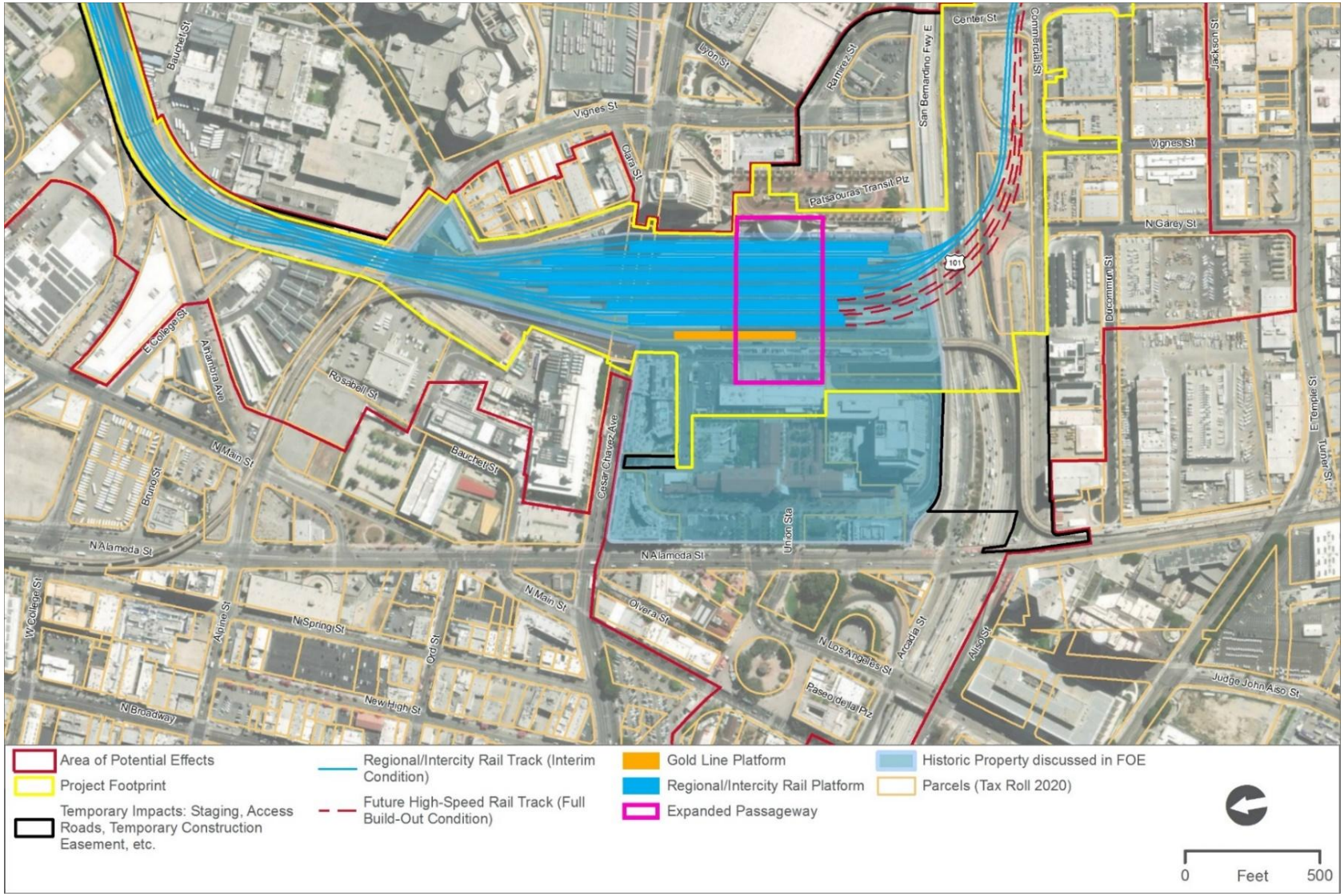
- **Platforms** – The 21-foot-wide concrete platforms would be demolished, and new, longer, wider concrete platforms (29 feet wide) would be constructed to enhance safety; allow space for proposed elevators, stairs, and escalators; and accommodate building code requirements for loading (ramps and railings would not be replaced). The proposed platforms would be lengthened and elevated to approximately 15 feet above their present elevation.
- **Butterfly Shed Canopies** – The butterfly shed canopies would be demolished because they would be too narrow and not long enough to perform their historic function on the widened and lengthened platforms. Additionally, reuse of the butterfly shed canopies does not allow for the design requirements of accommodating multiple operating agencies, each with their own unique needs and train types and each with different design criteria for proximity and clearance of canopies. Newly proposed rail yard canopy design options would be of modern design and materials and would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS within the rail yard.
- **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. However, the south retaining wall would be modified to raise the wall along with the yard (likely with the run-through tracks structure crossing through the upper limits of the new wall elevation). These modifications would be visible from US-101.
- **Terminal Tower** – The Terminal Tower is currently located in an area where the rail yard is proposed to be raised by 15 feet with a new 10 foot-wide access road proposed between the structure and the adjacent tracks. The Terminal Tower is proposed to be moved and either re-oriented at-grade or raised vertically, depending on the final Project design. The Terminal Tower would only be demolished if moving the resource is not feasible.
- **Car Supply Building** – The car supply building, which is built directly into the rail yard retaining wall, would be demolished as a result of elevating the rail yard (15 feet higher) and the need for a 10-foot wide access road in the same location.
- **Cesar Chavez Avenue Undercrossing** – The Cesar Chavez Avenue Undercrossing would be demolished and replaced with a new bridge to accommodate the elevated rail yard and support tracks (15 feet higher) and the egress requirements from the platforms.

LAUS would retain enough integrity to remain listed in the NRHP 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 physical removal of the features described above and substantial alterations to the south retaining wall and potentially the Terminal Tower (depending on the ability in final design to relocate the tower).

Figure 3.12-20 and Figure 3.12-21 show the change in view of the south retaining wall and butterfly sheds that would result from raising the platforms 15 feet and constructing the run-through tracks structure for the Build Alternative. As depicted on Figure 3.12-20, the grand canopy (Rail Yard Canopy Design Option 2) is visible from the viewpoint. Chapter 2 of this EIS contains conceptual-level renderings for the proposed concourse-related improvements associated with the Build Alternative relative to the existing rail yard and pedestrian passageway. Figure 3.12-22 through Figure 3.12-25 show the demolition of Cesar Chavez Avenue Undercrossing and its replacement with a new bridge to support the tracks as they raise approximately 15 feet to the elevation of the proposed rail yard. Figure 3.12-26 and Figure 3.12-27 show the change in view looking southeast from Alameda Street toward LAUS for the grand canopy (Rail Yard Canopy Design Option 2); there is no change to the existing view with the individual canopies (Rail Yard Canopy Design Option 1).

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Figure 3.12-18. Los Angeles Union Passenger Terminal (Map Reference #1) Historic Property Boundary and the Build Alternative



Source: Link US Finding of Effect Report (Appendix M of this EIS); FOE = Finding of Effect Report

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Figure 3.12-19. Character-Defining Features of Los Angeles Union Station with Physical Effects from the Build Alternative



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Figure 3.12-20. Area South of Los Angeles Union Station Platforms and South Retaining Wall, Existing Conditions (View North)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-21. Area South of Los Angeles Union Station Platforms and South Retaining Wall, Visual Simulation of the Build Alternative with Rail Yard Canopy Design Option 2 (View North)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-22. Cesar Chavez Avenue Undercrossing, Existing Conditions (View West)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-23. Cesar Chavez Avenue Undercrossing, Visual Simulation of the Build Alternative with Rail Yard Canopy Design Option 2 (View Looking West)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-24. Cesar Chavez Avenue Bridge, Existing Conditions (View Looking East)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-25. Cesar Chavez Avenue Bridge, Visual Simulation of the Build Alternative with Rail Yard Canopy Design Option 2 (View Looking East)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-26. Los Angeles Union Station Entrance from Alameda Street, Existing Conditions (View Southeast)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-27. Los Angeles Union Station Entrance from Alameda Street, Visual Simulation of the Build Alternative with Rail Yard Canopy Design Option 2 (View Looking Southeast)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Visual Effects on Qualifying Characteristics

Although the expanded passageway associated with the Build Alternative is proposed in the same general location as the present historic pedestrian passageway (at grade and offering a similar pattern of east-to-west circulation across LAUS), it is of non-historic dimensions, design, and materials plus would have new vertical and expanded horizontal circulation elements (see conceptual renderings in Figure 3.12-20 through Figure 3.12-25 in Chapter 2 of this EIS). Therefore, the concourse-related improvements associated with the Build Alternative are incompatible with LAUS as a historic property, resulting in visual effects.

Additionally, at this early stage of Project design, the individual or grand canopy options associated with the Build Alternative include modern design elements over the rail yard (see renderings above) that are incompatible with the historic fabric and other character-defining features of LAUS in the following ways:

- **Rail Yard Canopy Design Option 1 (individual canopies).** Individual canopy structures above each elevated rail yard platform have a maximum height of up to 25 feet. These individual canopies would not be visible behind the historic concourse and outdoor courtyards. While the individual canopies would be roughly similar in form to existing butterfly canopies, they are of non-historic dimensions to fit the widened and lengthened platforms, with modern design and materials.
- **Rail Yard Canopy Design Option 2 (grand canopy).** The grand canopy structure would have a maximum height of up to 75 feet above the elevated rail yard. The grand canopy would be visible behind the historic concourse and outdoor courtyards (Figure 3.12-27). This design option is of non-historic dimensions, design, and materials.

Given the location at grade (beneath the rail yard), the expanded passageway elements would not be visible from the historic courtyards, LAUS, or beyond.

Summary of Effects on Los Angeles Union Station

The most applicable example of Section 106 adverse effects for the Build Alternative would be 36 CFR § 800.5(a)(2)(i), which states: “Physical destruction of or damage to all or part of the property.” As described above, the part of the LAUS property that would be demolished would include the following character-defining features: pedestrian passageway (tunnel); passenger ramps, platform railings, and solid balustrades; platforms; butterfly shed canopies; south retaining wall; Car Supply Building; Cesar Chavez Avenue Undercrossing; and, potentially, the Terminal Tower (depending on the ability in final design to relocate the tower). The physical destruction of these features would meet the criteria of adverse effect, even though LAUS would retain sufficient integrity to be listed in the NRHP. In addition, although they would not be destroyed, the south retaining wall and potentially the Terminal Tower would be altered.

A second applicable example of Section 106 adverse effects would be 36 CFR § 800.5(a)(2)(v), which states: “Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property’s significant historic features.” The contributing features that would be demolished

(i.e., platforms, butterfly shed canopies, pedestrian passageway (tunnel), passenger ramps, platform railings, and solid balustrades, Cesar Chavez Avenue Undercrossing, and Car Supply Building) would be replaced as part of the Build Alternative with new infrastructure elements that are visually different from historic-era features and that would contradict the Spanish Colonial Revival and Streamline Moderne architectural styles of the historic LAUS. While the individual canopies over the rail yard (Rail Yard Canopy Design Option 1) would not be visible behind the historic concourse (as viewed from Alameda Street) and outdoor courtyards, they are of non-historic dimensions to fit the widened and lengthened platforms, with modern design and materials. The grand canopy over the rail yard (Rail Yard Canopy Design Option 2) would introduce visual elements that would be visible behind LAUS' architecturally significant buildings as viewed from Alameda Street and would result in additional adverse effects by diminishing LAUS's integrity of design, setting, feeling, and association.

Therefore, an adverse effect on the Los Angeles Union Passenger Terminal would occur. Mitigation Measure CUL-2 (described in Section 3.12.6) is proposed to minimize direct adverse effects from the Build Alternative on LAUS and other built environment historic properties.

Mitigation Measure CUL-2 requires preparation of a Built Environment Treatment Plan (BETP) prior to construction that details the actions to be taken to resolve adverse effects on built environment historic properties and would include, at a minimum, the following elements:

- Provisions for the documentation to Historic American Buildings Survey (HABS) standards of LAUS character-defining features proposed for demolition or alteration
- Provisions for the restoration of the existing LAUS passenger concourse to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration, where feasible, from an engineering and constructability standpoint
- Provisions for the development of an educational display for LAUS
- Provisions to evaluate the feasibility of reorienting at grade, vertically raising, or relocating the Terminal Tower
- Provisions for the development of design plans for the replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings and alterations to the south retaining wall that are compatible with the historic character of LAUS
- Provisions for the development of design plans for work on the character-defining features of North Main Street Bridge in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible
- Provisions for consultation with appropriate parties during the early design phases
- Requirements for the development of response plans for unanticipated effects and inadvertent damage to historical built environment resources

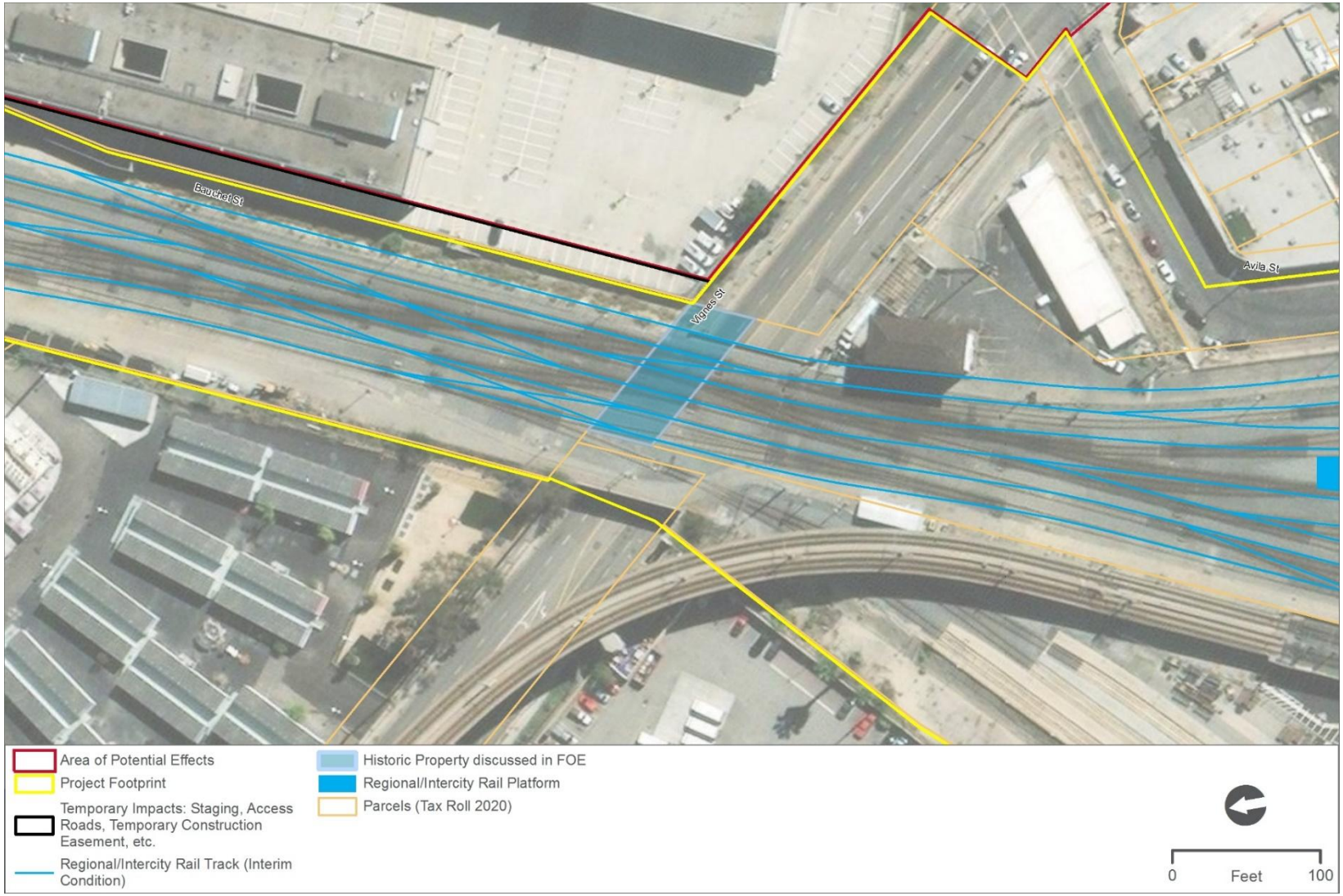
Vignes Street Undercrossing

The Build Alternative would include demolition of the existing Vignes Street Undercrossing and replacement with a new bridge to support the tracks as they transition from the existing grade at Mission Junction up to the approximate 15-foot raised elevation of the proposed rail yard (Figure 3.12-28 through Figure 3.12-30). New canopies would not be visible from this location. The most applicable example of Section 106 adverse effects would be 36 CFR § 800.5(a)(2)(i), which states “Physical destruction of or damage to all or part of the property.” Because of the destruction of the Vignes Street Undercrossing and its association with LAUS that qualifies it for the NRHP, a direct adverse effect on the Vignes Street Undercrossing would occur.

Implementation of Mitigation Measure CUL-2 (described in Section 3.12.6 and summarized above) would minimize adverse effects from the Build Alternative on Vignes Street Undercrossing by requiring that design plans for the replacement of the bridge be compatible with the historic character of LAUS and that feedback from early design review by consulting parties be considered in progressing the design to completion.

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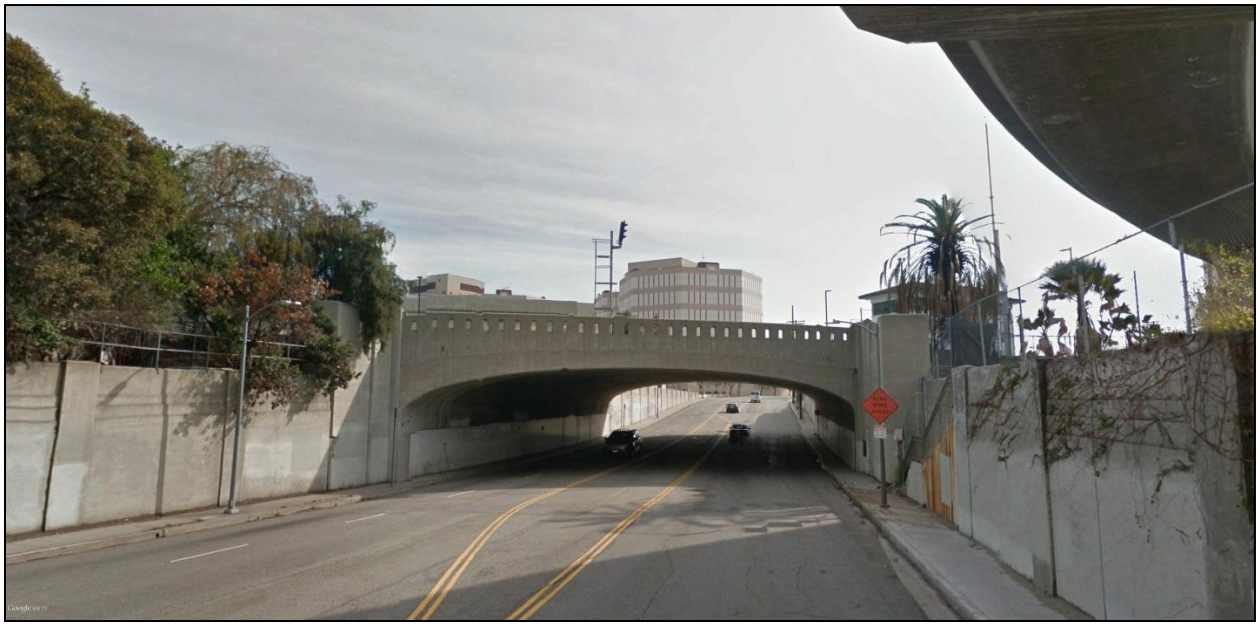
Figure 3.12-28. Vignes Street Undercrossing (Map Reference #12) Historic Property Boundary and the Build Alternative



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Figure 3.12-29. Vignes Avenue Undercrossing, Existing Conditions (View Looking East)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

Figure 3.12-30. Vignes Avenue, Visual Simulation of Post-Project Conditions with the Build Alternative (View Looking East)



Source: Link US Finding of Effect Report (Appendix M of this EIS)

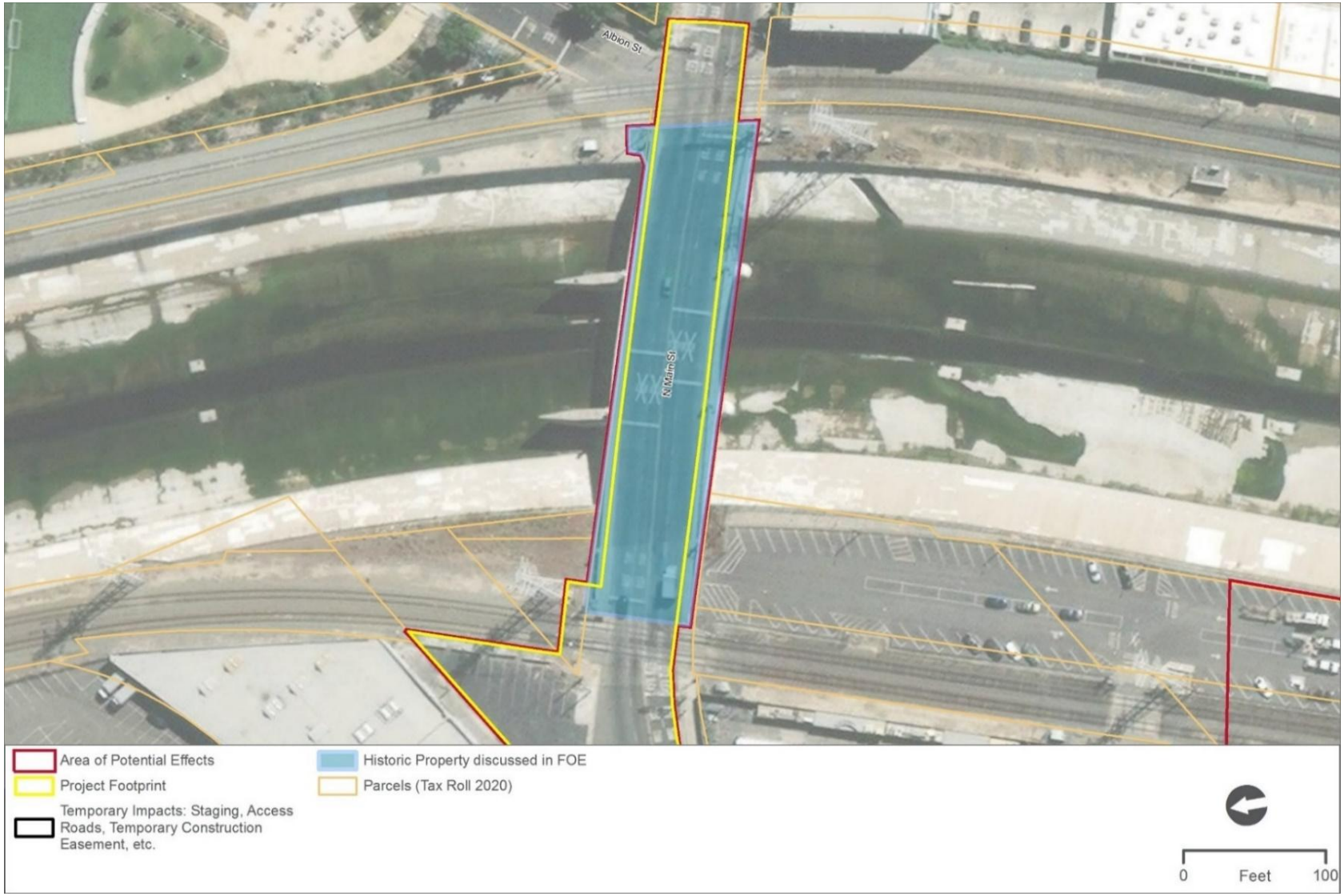
North Main Street Bridge

The Build Alternative includes safety improvements at the western end of the North Main Street Bridge location (Figure 3.12-31) that include: new sidewalks and curb ramps for ADA access; wire mesh fence, gates, and hand railings to keep pedestrians within the sidewalk; modification of the 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 in length); and 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 (Figure 3.12-32).

The bridge's wingwalls are an important character-defining feature that would be altered as a result of the Build Alternative, and there is no historic period precedent for a median upon the bridge's decking where the new median would be constructed. The most applicable example of Section 106 adverse effects would be 36 CFR § 800.5(a)(2)(ii), which states "Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines." Therefore, a direct adverse effect on North Main Street Bridge would occur.

Implementation of Mitigation Measure CUL-2 (described in Section 3.12.6 and summarized above) would minimize adverse effects from the Build Alternative on North Main Street Bridge by requiring that design plans for work on the character-defining features of North Main Street Bridge be developed in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible, and that feedback from early design review by consulting parties be considered in progressing the design to completion.

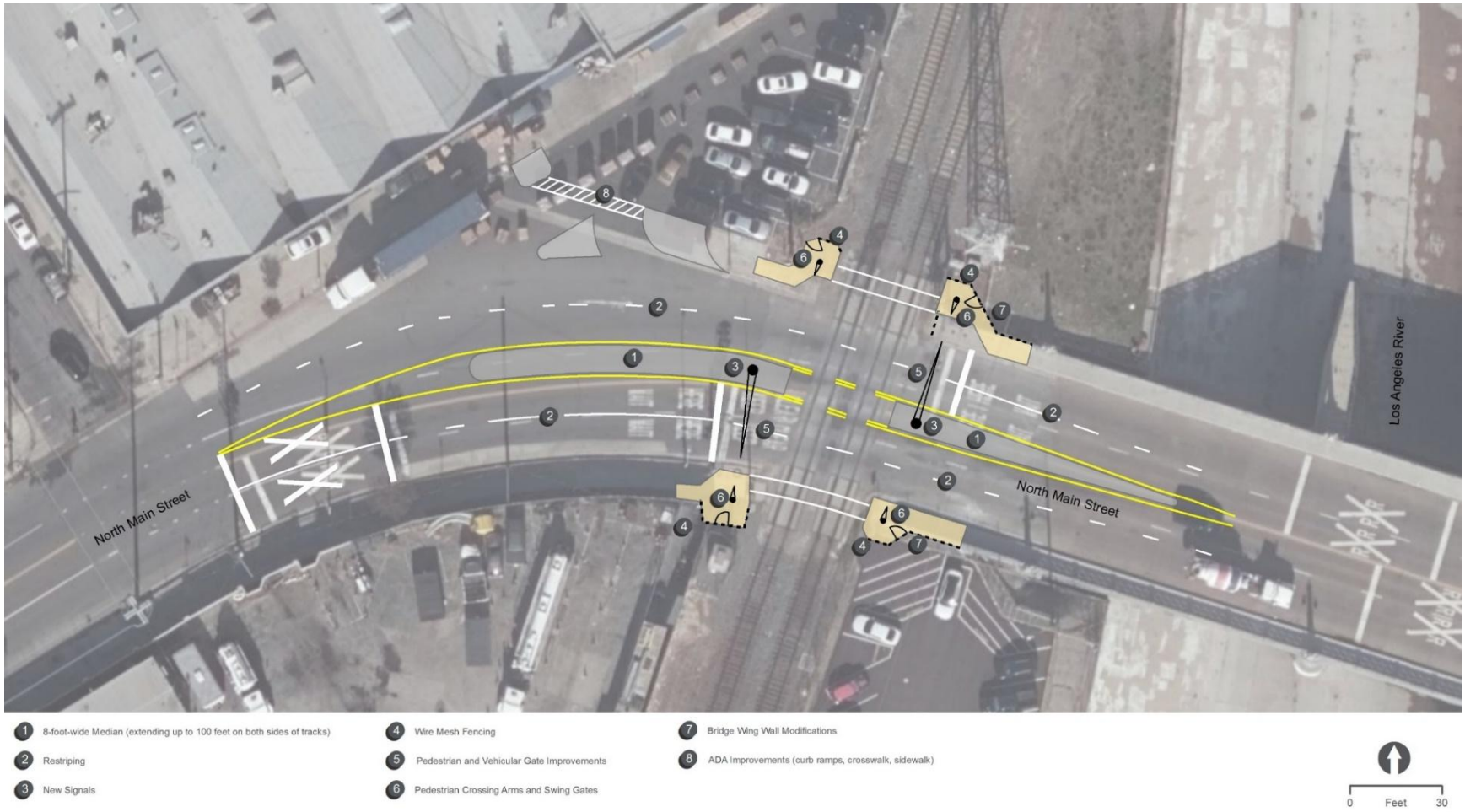
Figure 3.12-31. North Main Street Bridge (Map Reference #15) Historic Property Boundary and the Build Alternative



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Figure 3.12-32. Safety Improvements at the Main Street At-Grade Public Crossing



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Direct Effects - Operations

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 archaeological resources are buried, there would be no anticipated physical effect on archaeological historic properties. Maintenance operations may include in-kind replacement of tracks, ties, ballast, and other components of railroad infrastructure. These materials would have been either newly installed for the Build Alternative or subject to regular replacement over the years as part of routine maintenance, and therefore would not comprise historic materials that could contribute to the significance of any historic properties.

Project operations would not change the character of the use or physical setting of any of the built environment historic properties identified in the portion of the APE in the City of Los Angeles, including LAUS, in a manner that would diminish their integrity of location, design, setting, materials, workmanship, feeling, or association. Regional/intercity rail service would operate at increased levels of service relative to existing conditions. Rail traffic would be restricted to the railroad ROW and would not alter the use or cause changes in the physical setting of any historic property. Existing built environment historic properties would continue to convey their significance.

Potential noise and vibration effects related to operation of the Build Alternative were evaluated and presented in the *Link US Noise and Vibration Study* (Appendix H of this EIS) and summarized in Section 3.6 of this EIS. Although operational noise or vibration levels associated with the Build Alternative would increase from existing conditions, they would remain below the FTA impact criteria for adjacent land uses and would not result in physical damage to any of the historic properties in the portion of the APE in the City of Los Angeles. Operational noise or vibration levels associated with the Build Alternative would not change the character of use or physical setting of any of the significant features of historic properties in the portion of the APE in the City of Los Angeles in a manner that would diminish their integrity. Noise and vibration would not alter any of the characteristics of a historic property that qualify it for inclusion in the NRHP.

Therefore, no direct adverse effects on cultural resources would occur during operation.

Indirect Effects – Construction and Operations

Although the construction site would be off limits to the public, physical damage to archaeological site CA-LAN-1575/H and unknown archaeological resources during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources. This is considered an adverse effect. Implementation of Mitigation Measure CUL-1 (summarized above and described in Section 3.12.6) would minimize adverse indirect effects of the Build Alternative on archaeological historic properties to occur by requiring cultural resource WEAP training that would reduce the occurrence of looting or vandalism by construction personnel.

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to

the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. New transit-oriented infill development at or surrounding LAUS would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Depending on their proposed location, footprint, and design, infill development projects could cause physical destruction of, damage to, or alteration of built environment and known or unknown archaeological historic properties. Growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate may also result in adaptive reuse, infrastructure improvements, and other projects that would incrementally change the character of use or diminish the integrity of setting of historic properties in the portion of the APE in the City of Los Angeles. The context and intensity of effects would vary based on the location of proposed developments. Infill development and other projects would be subject to CEQA and NEPA reviews, as applicable, in addition to local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, an adverse effect to cultural resources could still occur because cultural resources are non-renewable.

TOPIC 3.12-B	Paleontological Resources

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. No construction activities would occur that could potentially impact paleontological resources because deep excavations beneath artificial fill would not be required. Existing conditions would remain the same. Reasonably foreseeable future projects, as described in Section 3.16, Cumulative Effects, and other planned improvements as part of the 2020 RTP/SCS would still occur under the No Action Alternative along with other maintenance activities in the railroad ROW. Ground-disturbing construction activities related to other projects may result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. The context and intensity of effects would vary based on the location of other proposed developments. Maintenance activities in the railroad ROW or on vacant areas would be subject to applicable Metro requirements and all other infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, an adverse effect could still occur because paleontological resources are non-renewable.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Deep excavations beneath artificial fill or recent alluvium for components such as bridge replacements, support bents, and modifications to existing roads and highways may result in effects 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 affect paleontological resources. However, deeper excavations for proposed bridge structures (run-through tracks structure, Cesar Chavez and Vignes Street Undercrossings, etc.) have the potential to affect 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 N of this EIS]) and underlying Puente Formation (reported at depths of approximately 90 to 100 feet in areas around the newly proposed concourse). This is considered an adverse effect. Implementation of Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.6) would minimize adverse effects of the Build Alternative on paleontological resources. Mitigation Measure PAL-1 requires the development and implementation of a Paleontological Mitigation Plan (PMP) including site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery; Mitigation Measure PAL-2 requires provisions that require preparation and implementation of a WEAP training; and Mitigation Measure PAL-3 requires arrangements for curation of significant fossils recovered during construction. With the implementation of Mitigation Measures PAL-1 through PAL-3, a direct adverse effect could still occur during construction because paleontological resources are non-renewable.

Direct Effects – Operations

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 the ground surface and intact paleontological resources, if present in the area, are more deeply buried, there would be no anticipated corresponding effects of these operations on paleontological resources. Therefore, no direct effects would occur during operations under the Build Alternative.

Indirect Effects – Construction and Operations

Even though the construction site would be off-limits to the general public, indirect effects during all phases of work may result from increased accessibility (rather than damage or destruction) by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may occur. This is considered an adverse effect. Implementation of Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.6) would minimize adverse indirect effects of the Build Alternative on paleontological resources to occur by requiring

development and implementation of a PMP, a WEAP training, and arrangements for curation of significant fossils.

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. New transit-oriented infill development at or surrounding LAUS would be consistent with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region including the land use strategies included in the 2020 RTP/SCS aimed to focus most of new housing and job growth in high-quality transit areas such as the area surrounding LAUS. Ground-disturbing construction activities related to infill development may result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. The context and intensity of effects would vary based on the location of other proposed developments. Infill development would be subject to CEQA and NEPA reviews, as applicable, in addition to other local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, an adverse effect could still occur because paleontological resources are non-renewable.

3.12.6 Mitigation Measures

Implementation of the following mitigation measures would minimize potential adverse effects relative to cultural and paleontological resources. Metro adopted an MMRP as part of the Final EIR for the Link US Project, which included Mitigation Measures for cultural and paleontological resources. The mitigation measures below generally follow the mitigation measures adopted in the MMRP for the Link US Project but include minor technical changes where necessary to address site-specific instances or clarify how the measure shall be implemented.

Cultural Resources

The following mitigation measures are proposed in the *Link US Finding of Effect Report* as a starting point for discussion and would be fully developed through Section 106 consultation and memorialized in a PA, which is expected in summer 2024. This section will be updated once Section 106 consultation is complete and the Programmatic Agreement (PA) is executed, prior to the circulation of the environmental document. Mitigation that is proposed in this Final EIS is considered preliminary and is subject to change with input from Section 106–related consultation with the SHPO and with other consulting parties. Implementation of the following mitigation measures may avoid or minimize adverse effects to historic properties identified under NEPA.

CUL-1 **Archaeological Treatment Plan (ATP):** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in the analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the actions to be taken to resolve adverse effects on historic property CA-LAN-1575/H and the procedures to address inadvertent discoveries. The California SHPO, Caltrans, and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence.

The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990).

The ATP shall include, at a minimum, the following elements:

- **Research design** – The ATP shall include a robust research design to be used in evaluating whether archaeological features and deposits that may be encountered contribute to the NRHP eligibility of CA-LAN-1575/H under Criterion D, and in recovering scientific data from those features and deposits that are determined to contribute. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions.
- **Site-specific sensitivity model** – The ATP shall include provisions for the development of a site-specific sensitivity model to guide efforts to avoid or minimize adverse effects on known portions of CA-LAN-1575/H. The sensitivity model shall compare Project-related infrastructure, based on final design, to available information on previous disturbance from as-built plans, historical maps, geotechnical borings, and past archaeological reports that identify fill depth. A three-dimensional model, a series of stratigraphic profiles, or other relatable graphic depiction shall be created to assist in determining the level of sensitivity for encountering buried archaeological features or deposits for each element of the Project design. Consulting tribes shall have an opportunity to review the sensitivity model and provide insight informed by traditional tribal knowledge.
- **Phased testing, evaluation, and data recovery of known features and deposits** – Based on the results of the site-specific sensitivity model, protocols for phased testing, significance evaluation, and data recovery of known features and deposits shall be developed. Due to the extreme constraints posed by the location of the Project (affecting public transportation through closure of roads, transit, etc.),

testing shall occur as part of the preconstruction activities. The ATP shall include a summary of anticipated features and artifacts potentially associated with CA-LAN-1575/H, including references to the pertinent research domains and data requirements contained in the research design, as well as standards for documentation, evaluation, data recovery, and analysis. The ATP shall rely on OSHA requirements regarding the safety of testing, evaluation, and data recovery locations and the potential for encountering contaminated soils or other hazards.

- **Archaeological and Native American monitoring** – The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction and provisions for determining monitoring locations based on final design, potential impacts to archaeological resources as assessed through the site-specific sensitivity model, and the potential to impact tribal resources including human remains that may be contained in both intact and disturbed contexts (e.g., previously disturbed soils or fill). The ATP shall include the requirement that archaeological monitoring take place under the supervision of an Archaeological Field Director meeting the minimum professional qualifications as defined in 2016 by the Society for California Archaeology, along with the demonstrated ability to identify human and non-human remains. The ATP shall also include requirements that all Archaeological Monitors for project construction have completed at least 12 semester units of undergraduate or graduate coursework in archaeology plus 12 months of archaeological-related field experience in California. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards.

- **Provisions for the inadvertent discovery of archaeological features or deposits** – The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant under Criterion D, then data recovery and analysis procedures outlined for known resources shall be implemented.

  Provisions for the inadvertent discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony – The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner as determined through consultation with the Native American tribe identified by the NAHC as the Most Likely Descendant, and in accordance with applicable regulations.

- **Public participation or outreach plan for CA-LAN-1575/H** – The ATP shall include provisions for the development of a public participation or outreach plan for CA-LAN-1575/H that includes continued consultation with Native American tribes, cultural resource professionals, and other potential stakeholders, such as local historical societies. The plan may include preparation of visual/educational exhibits or murals within LAUS and development of an application for handheld electronic devices, 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. Any materials prepared for public distribution shall comply with applicable regulations regarding the confidentiality of culturally sensitive data and information about archaeological resources.
- **Cultural resource WEAP training** – The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas.
- **Standards for reporting** – The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format*.
- **Guidelines for curation** – The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79 and the California Guidelines for the Curation of Archeological Collections (May 7, 1993).
- **Covenant for transfer of responsibilities under Section 5024 of the California Public Resources Code (PRC)** – The ATP shall contain provisions for the negotiation of a covenant between the tribes, Caltrans, Metro and SHPO in order to transfer Caltrans' responsibilities under Section 5024 of the California PRC to Metro for the acquisition of the parcel in Caltrans ROW on the south side of U.S. 101 at Commercial Street, located within the boundary of archaeological site CA-LAN-1575/H. The covenant cannot be completed until the CEQA environmental document and Section 106 agreement documents have received SHPO concurrence, as the final mitigation measures must also be included in the covenant.

CUL-2 **Built Environment Treatment Plan (BETP):** Prior to construction, Metro shall retain a qualified architectural historian, herein defined as a person who meets the Secretary of the Interior's Professional Qualification Standards in Architectural History, to

develop a BETP that details the actions to be taken to resolve adverse effects on the built environment historic properties. The California SHPO and continuing consulting parties with specific interest in the historic properties shall be afforded 30 days to review and comment on the draft BETP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised BETP shall be submitted to SHPO for 30-day review and concurrence.

The BETP shall include, at a minimum, the following elements:

- **HABS documentation** – The BETP shall include provisions for the documentation to HABS standards of LAUS character-defining features proposed for demolition or alteration. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards in History or Architectural History and submitted to the Library of Congress as an addendum to HABS CA-2158. The level of HABS documentation will be selected by the National Park Service Regional Office and shall include, at a minimum, large-format photographic recordation and a written description of character-defining features of LAUS proposed for demolition or alteration that were not included in previous HABS documentation (HABS CA-2158, CA-2158-A, CA-2158-B, CA-2158-C, and CA-2158-D). At a minimum, the following character-defining features shall be reviewed for inclusion 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)
- **Restoration of the existing LAUS passenger concourse** – The BETP shall include provisions for the restoration of the existing LAUS passenger concourse (west of the pedestrian passageway) to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration, where feasible, from an engineering and constructability standpoint. This includes possible redesign of the

entrance to the Metro Red Line to be more compatible with the historic LAUS design. The Secretary of the Interior's Standards for Rehabilitation shall be followed where restoration is not feasible.

- **Educational display for LAUS** – The BETP shall include provisions for the development of an educational display for LAUS that could be viewed by the public to demonstrate the history of LAUS and how it was used by past railroad passengers. Metro shall consider the feasibility of salvaging significant architectural details from LAUS for use in the educational display.
- **Relocation of the Terminal Tower** – The BETP shall include provisions to evaluate the feasibility by a multi-disciplinary team (e.g., architectural historian, structural, civil, geotechnical, and railroad engineers) to reorient at grade, vertically raise, or relocate the Terminal Tower. If all of those preservation methods are determined infeasible by the multi-disciplinary team, the Terminal Tower will be demolished.
- **Cesar Chavez Avenue Undercrossing, Vignes Street Undercrossing, and south retaining wall design plans** – The BETP shall include provisions for the development of design plans for the replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings and alterations to the south retaining wall that are compatible with the historic character of LAUS, including assessing the feasibility of rehabilitation options that preserve historically significant portions of these structures as design progresses.
- **North Main Street Bridge design plans** – The BETP shall include provisions for the development of design plans for work on the character-defining features of North Main Street Bridge, including, but not limited to, its sidewalks, decking, and wingwalls, in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties with the objective of minimizing visual impacts of the proposed safety improvements to the historic character of the bridge, to the extent feasible.
- **Design review** – The BETP shall identify parties—including SHPO, the City of Los Angeles Office of Historic Resources (OHR), and the City of Los Angeles Cultural Heritage Commission—to be consulted during early design phases of the Project regarding the following items:
    - alterations to or demolition of character-defining features of LAUS
    - restoration of the existing LAUS passenger concourse
    - educational display for LAUS
    - alterations to character-defining features of the North Main Street Bridge

  Metro shall take into consideration the feedback received in progressing the design to completion.

- **Response plans** – The BETP shall include requirements for the development of protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources.

Paleontological Resources

The following mitigation measures would avoid or minimize the potential for adverse effects on paleontological resources to occur.

PAL-1 **Paleontological Mitigation Plan (PMP):** It is anticipated that Quaternary older alluvium or Puente Formation, which are geologic units that have a high sensitivity level, would be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. 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. Monitoring is not recommended for excavations that only impact artificial fill and Quaternary younger 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 activities in the immediate area (within a 25-foot radius of the discovery), and Metro's 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 consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in 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 Metro's qualified paleontologist.

PAL-2 **Paleontological WEAP Training:** Metro's qualified paleontologist shall prepare a paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP.

PAL-3 **Curation**: Metro shall make arrangements for the curation in perpetuity of significant fossils recovered during construction 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 consolidates 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.

3.12.7 NEPA Impact Summary

This section summarizes the effects related to cultural resources (built environment and known and unknown archaeological historic properties) and paleontological resources of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.12-A and Topic 3.12-B, no Project-related changes to environmental conditions would occur within the APE and paleontological RSA and the cultural and paleontological resources would remain similar to the existing conditions. Other planned projects and new infill developments within the APE could result in direct and indirect effects to the built environment and known or unknown archaeological historic properties and paleontological resources.

All planned future projects and new developments would require the evaluation of impacts to cultural and paleontological resources during CEQA and NEPA environmental review. However, even if mitigation measures were to be developed to avoid, minimize, or mitigate the potential for adverse effects as a result of these environmental reviews, an adverse effect to both cultural and paleontological resources could still occur because both cultural and paleontological resources are non-renewable.

Build Alternative

As discussed under Topic 3.12-A, direct effects from construction on cultural resources would be adverse. A summary of the finding of effect for individual resources is provided below:

- No effect on five historic properties
    - 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 (Ninth Street) Viaduct over the Los Angeles River

Construction of the Build Alternative would not alter any of the characteristics of these historic properties in a manner that would diminish their historic integrity. Therefore, no adverse effect would occur on these properties.

- No adverse effect on eight historic properties
  - LADWP Main Street Center
  - Mission Tower
  - William Mead Homes
  - United States Post Office Los Angeles Terminal Annex
  - Macy Street School
  - Los Angeles Plaza Historic District
  - Denny's Restaurant
  - Kelite Factory Plant No. 1

  Construction activities associated with the Build Alternative would not result in any physical impacts (including vibrational damage) to these historic properties. Construction of the Build Alternative would introduce visual elements that would cause minor alterations to the physical setting of the properties, but not to a degree that would diminish the historic integrity of the properties. Mitigation Measure CUL-2 incorporates the requirement for protection and response plans for unanticipated effects and inadvertent damage to historical built environment resources. Upon implementation of Mitigation Measure CUL-2, no adverse effect would occur on these cultural resources.

- Adverse effect on four historic properties
  - Archaeological site CA-LAN-1575/H:

    CA-LAN-1575/H is buried below and beyond the developed and operational portions of LAUS. Construction activities associated with the Build Alternative would penetrate below the maximum recorded level of artificial fill and would likely impact intact archaeological deposits that contribute to the significance of this historic property. Implementation of Mitigation Measure CUL-1 minimize the potential for adverse effects to this historic property by requiring preparation of an ATP prior to construction. Even after implementation of Mitigation Measure CUL-1, effects would remain adverse because cultural resources are non-renewable.

  - Los Angeles Union Passenger Terminal

    Construction of the Build Alternative would result in physical destruction of, damage, or alterations to character-defining features of LAUS. Additionally, concourse-related improvements and both rail yard canopy design options would result in changes to the physical setting due to the introduction of non-historic dimensions, design, and materials and introduce visual elements that are incompatible with the historic fabric and other character-defining features of LAUS. Implementation of Mitigation Measure

CUL-2 minimize the potential for adverse effects by requiring preparation of a BETP prior to construction. Even after implementation of Mitigation Measure CUL-2, effects would remain adverse because cultural resources are non-renewable.

- Vignes Street Undercrossing

  The Build Alternative would include demolition of the existing Vignes Street Undercrossing and replacement with a new bridge. Because of the destruction of the Vignes Street Undercrossing and its association with LAUS that qualifies it for the NRHP, an adverse effect on this historic property would occur**.** Implementation of Mitigation Measure CUL-2 would minimize the potential for adverse effects by requiring preparation of a BETP prior to construction. Even after implementation of Mitigation Measure CUL-2, effects would remain adverse because cultural resources are non-renewable.

- North Main Street Bridge

  The Build Alternative would include construction of improvements on or near the North Main Street Bridge, including modification of the northwest and southwest wingwalls and addition of a new median upon the bridge's decking, that would alter the character-defining features of the historic property. Implementation of Mitigation Measure CUL-2 would minimize the potential for adverse effects by requiring preparation of a BETP prior to construction. Even after implementation of Mitigation Measure CUL-2, effects would remain adverse because cultural resources are non-renewable.

As discussed under Topic 3.12-A, operations would occur at ground surface, within the railroad ROW, and would not cause physical impacts to historic properties. Maintenance operations may include in-kind replacement components of railroad infrastructure, but these components would not comprise historic materials that could contribute to the significance of any historic properties. Operations would not alter the use or cause changes in the physical setting of any historic property, and existing built environment historic properties would continue to convey their significance. Noise and vibration from operations would not alter any of the characteristics of a historic property that qualify it for inclusion in the NRHP. Therefore, no direct adverse effects on cultural resources would occur during operation under the Build Alternative.

As discussed under Topic 3.12-A, physical damage to cultural resources could result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources. Implementation of Mitigation Measure CUL-1 requires cultural resource WEAP training that would reduce the occurrence of looting or vandalism by construction personnel. Growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate may also result in adaptive reuse, infrastructure improvements, and other projects that would cause physical impacts on cultural resources or incrementally change their character of use or diminish their integrity of setting. Infill development and other projects would be subject to CEQA and NEPA reviews, as applicable, in addition to local regulations. However, even if mitigation measures were to be developed as a result of these

environmental reviews, indirect adverse effects could still occur because cultural resources are non-renewable.

As discussed under Topic 3.12-B, construction could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Mitigation Measures PAL-1 through PAL-3 require the development and implementation of a PMP, delivery of a WEAP training, and arrangements for curation of significant fossils recovered during construction. With the implementation of Mitigation Measures PAL-1 through PAL-3, direct effects from construction would remain adverse because paleontological resources are non-renewable.

As discussed under Topic 3.12-B, operations would occur at the ground surface and intact paleontological resources, if present in the area, are more deeply buried. Therefore, no adverse effect on paleontological resources would occur during operations.

As discussed under Topic 3.12-B, increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities could lead to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may occur. Mitigation Measures PAL-1 through PAL-3 require development and implementation of a PMP, a WEAP training, and arrangements for curation of significant fossils. Growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate may also result in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Infill development and other projects would be subject to CEQA and NEPA reviews, as applicable, in addition to local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, indirect adverse effects could still occur because paleontological resources are non-renewable.

A summary of impacts and mitigation measures is provided in Table 3.12-8.

Table 3.12-8. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.12-A: Cultural resources	*Construction* Adverse Effect	*Construction* **CUL-1 Archaeological Treatment Plan (ATP)** **CUL-2 Built Environment Treatment Plan (BETP)**	*Construction* Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect

Table 3.12-8. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Indirect Adverse Effect	*Indirect* **CUL-1 Archaeological Treatment Plan (ATP)**	*Indirect* Adverse Effect
Topic 3.12-B: Paleontological resources	*Construction* Adverse Effect	*Construction* **PAL-1 Paleontological Mitigation Plan (PMP)** **PAL-2 Paleontological WEAP Training** **PAL-3 Curation**	*Construction* Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **PAL-1 Paleontological Mitigation Plan (PMP)** **PAL-2 Paleontological WEAP Training** **PAL-3 Curation**	*Indirect* Adverse Effect

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3.13 Economic and Fiscal Impacts

3.13.1 Introduction

This section provides an evaluation of potential economic and fiscal impacts on local and regional economies that may result from the No Action Alternative and the Build Alternative. Economic indicators considered in this analysis include employment, earnings, output, value added, and tax revenues. Information contained in this section and related reports should not be used to make investment decisions. Information contained in this section is summarized from the *Link US Community Impact Assessment* (Appendix D of this EIS), *Link US Relocation Impact Report* (Appendix P of this EIS), and *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS), in combination with published sources.

3.13.2 Regulatory Framework

Table 3.13-1 identifies and summarizes applicable laws, regulations, and plans relevant to economic and fiscal issues.

Table 3.13-1. Applicable Laws, Regulations, and Orders

Law, Regulation, or Order	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(16),* 64 *Federal Register* 28554 (1999)[1]	FRA's Procedures for Considering Environmental Impacts require the Draft and Final EIS to include an assessment to determine potential adverse effects related to the socioeconomic environment, including the number and kinds of available jobs, the potential for community disruption and demographic shifts, the need for and availability of relocation housing, effects on commerce, including effects on existing businesses, metropolitan areas, and effects on local government services and revenues.
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) (42 United States Code 4601 et seq.)	The Uniform Act provides uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by federal and federally assisted programs and establishes uniform and equitable land acquisition policies. The Uniform Act requires the owning agency to notify affected owners of the agency's intent to acquire an interest in their property, including a written offer letter of just compensation that specifically describes those property interests and assigns a ROW specialist to each property owner to assist them with

[1] While this EIS was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.13-1. Applicable Laws, Regulations, and Orders

Law, Regulation, or Order	Description
	this process. The Uniform Act also provides financial and advisory benefits to displaced individuals to help them relocate their residence or business. Benefits are available to owners and tenants of residential and business properties.
State	
California Relocation Assistance Act	The California Relocation Assistance Act includes requirements for just compensation for real property. Owners of private property have federal and state constitutional guarantees that their property will not be taken for public use or damaged unless they first receive just compensation. Just compensation is measured by the fair market value of the acquired property.
Local	
Metro's Relocation Assistance Program	Metro's Relocation Assistance Program provides compensation to property owners for the purchase or use of their property and tenants may be eligible for relocation benefits to help displaced households or businesses.

Notes:
EIS=environmental impact statement; FR=Federal Register; FRA=Federal Railroad Administration; Metro= Los Angeles County Metropolitan Transportation Authority; NEPA=National Environmental Protection Act; ROW=right-of-way USC=United States Code.

3.13.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Employment, income, or tax revenues.

Geographic Area Considered

For the purposes of evaluating economic and fiscal impacts, the County of Los Angeles was used as a basis to describe the economic employment and income characteristics within the affected environment, and the Project footprint was used to determine where potential job loss and lost property tax revenues would occur due to the ROW acquisitions.

Methodology

The evaluation considers the following impacts:

- Short-term economic and fiscal impacts associated with capital spending during the construction phase; and
- Long-term economic and fiscal impacts associated with:
  - Additional jobs at LAUS resulting from concourse-related improvements during the operational phase (2031 and beyond); and
  - Infrastructure improvements and incremental retail activity.

The economic and fiscal analysis involved the estimation of three types of effects:

- **Direct Effects –** economic activity occurring as a result of direct spending by businesses or agencies (e.g., direct spending on construction);
- **Indirect Effects –** economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractor responsible for individual components); and,
- **Induced Effects –** the increase in economic activity, over and above the direct and indirect effects, associated with increased labor income that accrues to workers (of the contractor and all suppliers) and is spent on household goods and services purchased from businesses.

The total economic impact is the sum of the direct, indirect, and induced effects occurring due to the Build Alternative. The indirect and induced effects are sometimes referred to as multiplier effects since they can make the total economic impact substantially larger than the direct effect alone.

To estimate the economic impacts of the Build Alternative, the IMPLAN® input-output model was used. The IMPLAN® data files include transaction information (intra-regional and import/export) on 536 industrial sectors (corresponding to four- and five-digit North American Industry Classification System codes) and data on more than 20 different economic variables, including industry output and labor income. For this study, the IMPLAN® model was populated with 2015 data for Los Angeles County. IMPLAN® multipliers were used to calculate the direct, indirect, and induced economic effects of the capital expenses for the Build Alternative, as well as operating expenses due to additional staffing required for new concourse-related improvements.

Economic impacts are measured in terms of industry output, value added, employment, and tax revenue (at the federal and state/local levels). While output refers to the total volume of sales, value added refers to the value a company adds to a product or service. It is measured as the difference between the amount a company spends to acquire it and its value at the time it is sold to other users. Thus, value added can be thought of as a measure of the contribution to the gross domestic product made by an establishment or an industry. The total value added within a region

is equivalent to the gross regional product and consists of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus.

With respect to employment, two impact metrics were calculated: labor income and jobs. Labor income includes employee compensation and proprietor income. Employee compensation consists of wage and salary payments as well as benefits (health, retirement, etc.) and employer paid payroll taxes (employer side of social security, unemployment taxes, etc.). Proprietor income consists of payments received by self-employed individuals (such as farmers and painters) and unincorporated business owners. The job impact measures the number of jobs created for a full year. Unless specified otherwise, these jobs should not be interpreted as full-time equivalent (FTE) jobs as they reflect the mix of full- and part-time jobs that is typical for each sector. Additionally, they should not be interpreted as long-term jobs either, but rather as job-years. Since the analysis is done on an annual basis, 1 job-year can be defined as 1 person employed for 1 year, whether part-time or full-time.

Short-term Impacts of Capital Expenditures

Construction spending for the Build Alternative is broken down in two stages: the interim condition and full build-out condition. Capital expenditures during the interim condition are expected to be $1.93 billion.[2] During the full build-out condition, an additional $1.35 billion of capital expenditure is expected.[3]

Long-term Impacts of Concourse-Related Improvements and Incremental Retail Activity

The assessment of potential effects on fiscal (government) revenues was conducted to determine if net changes in property and sales taxes would occur as tax-generating properties are taken off the assessor roll (due to ROW acquisition) to accommodate the Build Alternative and if new commercial uses within LAUS become subject to property taxation. The impact of property acquisitions on property tax revenues was estimated using data on parcel tax assessment and square footage and employment for affected businesses. Property acquisitions would result in the following long-term effects:

- Property tax revenue losses to Los Angeles County and local jurisdictions in which the land parcels acquired are located; and
- Job losses as businesses on the acquired parcels might close down permanently or relocate outside of Los Angeles County.

[2] The Draft EIS/SEIR identified a cost estimate of $950.4M, generated in 2019, to implement the infrastructure improvements in the interim condition for the Build Alternative. This estimate did not include the costs to implement the Malabar Yard Railroad Improvements. In the Final EIS, the cost estimate was refined (a) to include the capital expenditures associated with Malabar Yard Railroad Improvements for the Build Alternative and (b) to update it for 2023 dollars.

[3] These cost estimates assume Rail Yard Canopy Design Option 1 (Individual Canopies) is selected. This is a reasonable assumption given the budget for the Project. In addition, there is no cost estimate for Rail Yard Canopy Design Option 2 (Grand Canopy), as it depends on the size of the grand canopy implemented, among other factors. It is expected the Rail Yard Canopy Design Option 2 would cost substantially more than the amount of Rail Yard Canopy Design Option 1.

Note that the effects on school district funding would be inconsequential and are implicitly accounted for in the assessment of property taxes. Note also that property acquisitions could result in reduced sales tax revenues; however, the impact cannot be estimated with any certainty as other businesses in Los Angeles County would pick up some of the sales lost by affected businesses.

The fiscal impacts (i.e., property and sales tax impacts) of concourse-related improvements were assessed using information on the anticipated mix of retail uses and estimates of average rent per square foot and average sales per square foot, in particular.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects is presented below.

Economic effects can either be beneficial or adverse. Economic effects may be beneficial due to an increase in economic activity from direct spending on construction, addition of jobs, and generation of federal, state, and local tax revenues. Adverse economic effects may result if businesses on acquired parcels are not able to be relocated resulting in loss of property tax revenues and employment.

3.13.4 Affected Environment

As discussed in Section 3.13.3, the economic impacts of the Build Alternative were estimated using the IMPLAN® input-output model. While the IMPLAN® study area data was used for calculations of economic impacts, this section describes the baseline economic conditions in the County of Los Angeles and the City of Los Angeles[4] to provide context for the jobs and other impacts calculated with IMPLAN®.

Industry Output

In 2016, the primary industries that contributed to the economy in the City of Los Angeles were professional services, with approximately $97 million in gross receipts; and health care, retail trade, finance and insurance, real estate, and wholesale trade, with gross receipts ranging from approximately $22 million to $50 million (*Link US Community Impact Assessment,* Appendix D of this EIS).

Employment

Table 3.13-2 shows employment growth forecasts from 2016 to 2045 for the County and City of Los Angeles. As shown in Table 3.13-2, employment in the region is projected to increase.

[4] The information is provided at the county or city level whenever available.

Table 3.13-2. Projected Employment Growth		
Year of Employment	**County of Los Angeles**	**City of Los Angeles**
2016 Employment	4,743,000	1,848,300
2045 Employment	5,382,000	2,135,900
Percent Change	13.5%	15.6%

Source: SCAG 2020

Income

Based on 2021 data from the U.S. Census Bureau, median household income was $70,372 in the City of Los Angeles and $77,456 in Los Angeles County (U.S. Census Bureau 2021).

Tax Revenue[5]

In 2021, property taxes collected in Los Angeles County amounted to $20.0 billion.[6] This represented a 5.6 percent increase over 2020. From 2011 to 2021, property tax collections have increased by 4.7 percent annually, on average (Los Angeles County Auditor-Controller 2022).

Land Use

As discussed in Section 3.2, Land Use and Planning, most of the affected parcels where TCEs and property acquisition would occur are zoned for industrial/manufacturing or commercial use.

3.13.5 Environmental Consequences

The structure of this evaluation differs from those presented in other sections in Chapter 3 of this EIS. As explained in Section 3.13.3, the economic impacts calculated for this study are based on economic multipliers derived from IMPLAN® and consist of direct effects (economic activity resulting from direct spending by businesses or agencies), indirect effects (economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies), and induced effects (economic activity associated with increased labor income that accrues to workers). The total economic impact is the sum of the direct, indirect, and induced effects. Therefore, this evaluation presents these effects together, rather than in separate sections.

[5] The impact on sales tax revenues cannot be estimated accurately due to the unknown amount of sales absorbed by other businesses in the county. Therefore, information on sales tax revenue is not provided.

[6] In 2019, property taxes collected in Los Angeles County amounted to $17.9 billion.

TOPIC 3.13-A	Employment, income, and tax revenues.

No Action Alternative

Under the No Action Alternative, the Build Alternative would not be implemented, and no ROW acquisitions would be required. There would be no associated loss in jobs and property taxes due to business displacement. However, there would also be no net gain in jobs and tax revenues from the expanded concourse.

No new construction would occur under the No Action Alternative and the existing stub-end rail configuration at the LAUS would remain. As a result, there would be no economic impacts from construction spending.

Metro would not increase operational capacity at LAUS to meet the demands of the broader rail system. Operations would remain unchanged, and therefore, the additional retail, janitorial, engineering, and security jobs expected from the Build Alternative would not be realized. The expected follow-on effects (output, value-added, labor income, and taxes) from these long-term jobs would also not be generated. No changes to employment, income, and tax revenue projections presented in the affected environment would occur under the No Action Alternative. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Construction

Two multi-family residential properties are identified within, or immediately adjacent to, the Project footprint for the Build Alternative: Mozaic Apartment complex and William Mead Homes. No part of either parcel is proposed for ROW acquisition; therefore, implementation of the Build Alternative would not result in the loss of residential property tax revenues.

The Build Alternative may require the full or partial acquisition of several parcels and the subsequent demolition of up to 34,784 square feet of building space associated with Amay's Bakery and 122,050 square feet of building space associated with the Life Storage Self Storage facility. Details regarding these businesses (occupant, type, name, and estimated number of employees) are included in the *Link US Final Economic and Fiscal Impact Assessment* (Appendix O of this EIS). In fiscal year 2019, the property taxes levied on all these parcels amounted to $335,221; all of which would be considered lost property tax revenue representing less than 0.5 percent of total property taxes levied in Los Angeles County[7] (assuming that all businesses on the parcels would be permanently displaced [worst-case scenario]). Unlike residential occupants, businesses are referred to, not offered, potential and/or suitable replacement sites pursuant to Metro's Relocation Assistance Program.

[7] Property taxes levied in Los Angeles County in FY 2019 amounted to $17.9 billion (County of Los Angeles 2019).

Based on the methodology in the *Link US Final Relocation Impact Report* (Appendix P of this EIS), acquisitions and demolition of industrial/commercial buildings are expected to result in the loss of up to 60 jobs. Given that there is available land within the Project study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed (*Link US Final Relocation Impact Report,* Appendix P of this EIS). A national business relocation survey conducted by O. R. Colan Associates in 2010 (FHWA 2010) found that, on average, 67 percent of displaced businesses were eligible to receive relocation financial assistance. With this level of business relocation, the resulting number of jobs lost would decrease to approximately 20. Relocation costs and schedule will be determined during final design of the Project.

The Build Alternative capital expenditures are expected to generate short-term direct, indirect, and induced effects. The total cost of the Build Alternative (including both the interim condition and full build-out condition) is estimated to be approximately $3.28 billion in year-of-expenditure (YOE) dollars. However, not all costs should be considered in the economic impact analysis:

- **Property acquisition (ROW) costs –** Selling a property is a transfer of asset between entities, and there is no economic activity (i.e., employment or income) associated with it, except for small real estate/bank fees.
- **Costs incurred outside of the Project study area (economic leakage) –** Imports to Los Angeles County are excluded from the estimation of indirect and induced impacts by means of the IMPLAN® National Trade Flows Model.

After netting out these costs, total capital costs amount to $2.93 billion (or 88.8 percent of the total). Table 3.13-3 provides a breakdown of the Build Alternative costs by major cost category.

Table 3.13-3. Capital Expenditures Leading to Local Economic Impacts
($ Millions of YOE)

Major Spending Category	Build Alternative Cost
Construction	$1,446
Professional services and other	$1,489
Total	**$2,933**

Notes:
Capital expenditures are for Interim Condition and Full Build-Out Condition, with Canopy Design Option 1.
YOE=year-of-expenditure

Also, the following should be noted:

- Capital costs are inclusive of all contingencies and exclude ROW costs.

- In the absence of a detailed schedule for spending for the full build-out condition, capital costs are spread evenly across the construction period.
- In the absence of spending by cost category for the full build-out condition, the same distribution of percent spending by category was used as the interim condition.

After mapping these capital costs to the associated IMPLAN® sectors, the short-term economic impacts were calculated. Table 3.13-4 shows the results of the impacts of capital spending for the Build Alternative. As shown in Table 3.13-4, the Build Alternative is expected to generate 33,536 job-years (representing more than $2.4 billion in labor income) during the construction period. It is expected to create $5.2 billion in output (including $2.8 billion in value added) and $0.7 billion in total federal, state, and local tax revenues.[8] On average, every dollar of capital expenditure would generate an additional $0.78 in Los Angeles County (i.e., the output multiplier is 1.78). During construction, beneficial economic impacts would occur as a result of the Build Alternative because it would generate employment, labor income, and tax revenues.

Table 3.13-4. Total Construction Economic Impacts by Type and Metric
($2019 Million)

Impact Metric	Direct	Indirect	Induced	Total
Output	$2,753	$1,121	$1,356	$5,229
Value added	$1,330	$659	$834	$2,823
Labor income	$1,517	$438	$477	$2,432
Employment (job-years)	18,226	6,266	9,044	33,536
Taxes	—	—	—	$746

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)
Notes:
Totals are rounded for reporting purposes.
Results are reported in constant dollars of 2019 (i.e., the year the analysis was conducted).

Operations

After construction is complete, the Build Alternative is expected to generate long-term impacts during operations. In particular, these include new property and sales taxes generated from the expanded passenger concourse and retail activity, the creation of long-term jobs to operate the concourse and retail facilities, and the follow-on effects of these long-term jobs. These effects are described below.

[8] Detailed information on construction sales tax revenue is not available due to the unknown amount of sales absorbed by other businesses in the county.

Long-term Jobs Created

The expanded passenger concourse is expected to add up to 160,000 square feet of transit-serving retail amenities, which will translate into additional jobs. Specifically, these new amenities are expected to generate long-term retail trade jobs, and additional staffing is also anticipated to operate and maintain the new passenger concourse. Implementation of the Build Alternative will generate an estimated 171 net new FTE[9] positions by year 2034 (first full year after HSR starts operation).

The retail space is expected to generate long-term retail trade jobs. The percentage of annual taxable retail sales by out-of-county station users can be used as a proxy for the split between redistributed and net new retail jobs within the county. Table 3.13-5 summarizes the number of net new retail jobs from implementation of the Build Alternative.

Table 3.13-5. Calculation of New Concourse-Related Retail Jobs

Element	Value
Concourse area (square feet)	160,000
Retail employees Per 1,000 square feet	2.5
Total estimated concourse retail employees	400
Percent net new retail jobs	16
Net new retail jobs created	64
Shifts per day	1.5
FTE jobs created	**96**

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)
Notes:
FTE=full-time equivalent

Beyond initial staffing, additional jobs are also anticipated to be required in order to operate and maintain the proposed passenger concourse-related improvements. Table 3.13-6 includes FTE projections for janitorial, engineering, and security services for the concourse-related improvements as well as the annual operations cost (including salary and benefits) of these positions.

[9] Full-time equivalent employment is the number of full-time equivalent jobs, defined as total hours worked divided by average annual hours worked in full-time jobs.

Table 3.13-6. New Concourse-Related Operations Jobs (after Full Build-Out)

Passenger Support Services	FTE	Cost ($2019)
Journeyman Day	1	$189,188
Journeyman Swing	2	$384,636
Apprentice	1	$132,367
Security Professional	33	$1,607,332
Cleaner	13	$832,984
Total	**50**	**$3,146,506**

Source: Morlin Asset Management 2016 (data inflated to $2019)
Note:
FTE=full-time equivalent

Table 3.13-7 provides a summary of the job impacts in the opening year of the full build-out condition. In total, the Build Alternative would support 146 (96 retail jobs plus 50 operations jobs) new FTE jobs in retail, janitorial, engineering, and security services. After subtracting jobs that would be lost due to ROW acquisition, a gain in long-term jobs is expected, ranging from 86 to 126 net new jobs.

Table 3.13-7. Net Business Impacts from the Build Alternative

Activity	Job Impacts		Non-Vacant Building Area (Square Feet)	
	Total Displacement	Partial Displacement	Total Displacement	Partial Displacement
ROW acquisition	-60	-20	-156,834	-105,079
Concourse expansion	146		160,000	
Net impact	86	126	-3,166	54,921

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)
Note:
ROW=right-of-way

Once the planned HSR system is operational at LAUS, the number of long-term FTE jobs would increase from 146 to 171 due to 25 additional positions that would be created to support expanded passenger rail services.

New Property and Sales Tax Generation

Although the ROW acquisitions will lead to property tax loss, the new passenger concourse is expected to generate property and sales tax revenues that more than outweigh the acquisition losses, resulting in net gains in tax revenues.[10]

Up to 160,000 square feet of transit-serving retail amenities would be implemented at LAUS as a result of the Build Alternative. These concourse-related improvements are likely to consist of a program of retail uses, as shown in Table 3.13-8. The proposed retail uses are assumed to be a net addition to retail square footage in Los Angeles County and, as such, should not detract from other retail establishments in other areas in the county. For each retail use, the expected rental income is calculated based on estimates of total square footage and rent per square foot. Such a program of uses is forecast to generate net operating income of about $8.6 million in the first full year of operations of retail uses at LAUS (2032 dollars).

Table 3.13-8. Annual Net Operating Income from New Concourse-Related Retail Uses

Retail Use	Total Square Footage	Rent per Square Foot ($2032)	Gross Rental Income ($2032)
Full-Service restaurant	28,800	$80.2353	$2,310,777
Limited service eating places	33,600	$59.3741	$1,994,971
Bar	4,800	$80.2353	$385,130
Groceries	32,000	$36.9082	$1,181,064
Drug store	9,600	$36.9082	$354,319
Clothing	25,600	$67.3977	$1,725,380
Book/Music	3,200	$67.3977	$215,673
Department stores	14,400	$36.9082	$531,479
Other retail	8,000	$56.1647	$449,318
Total	**160,000**	**—**	**$9,148,110**

[10] ROW acquisitions could result in reduced sales tax revenues; however, the impact cannot be estimated with any certainty as other businesses in the Project study area would pick up some of the sales lost by affected businesses.

Table 3.13-8. Annual Net Operating Income from New Concourse-Related Retail Uses

Retail Use	Total Square Footage	Rent per Square Foot ($2032)	Gross Rental Income ($2032)
less 6% vacancy			**($548,887)**
Net operating income			**$8,599,224**

Source: The Concord Group. See Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)
Notes:
Gross Rental Income is calculated as Total Square Footage times Rent per Square Foot. Results presented in the table are rounded.

Using a capitalization rate[11] of 5.5 percent, the capitalized market value[12] of the retail uses is estimated at $156.3 million in 2032 dollars. This translates to $114.6 million in 2019 dollars, assuming a 2.42 percent average annual inflation rate from 2019 to 2032 (California Department of Finance 2014). Applying the average 1.22 percent local (City of Los Angeles) property tax rate to the concourse assessed value, the retail uses from concourse-related improvements would generate just under $1.4 million (2019 dollars) in additional property taxes in the opening year (Table 3.13-9). These property tax revenues would recur each year thereafter and would likely increase over time.

Table 3.13-9. Calculation of Property Taxes Generated from New Concourse-Related Retail Uses

Element	Value ($2019)
Estimated concourse market value	$156,349,524
Local property tax rate	1.22%
Local property taxes	$1,398,584

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)

In the opening year, these new retail establishments would also generate an estimated $60.7 million in sales (in 2032 dollars, or $44.5 million in 2019 dollars using a 2.42 percent average

[11] The capitalization rate refers to the rate of return on a property. It is calculated by dividing net operating income by property asset value.

[12] The capitalized market value refers to the dollar value that investors place on the retail uses for the Project.

annual inflation rate from 2019 to 2032), based on ULI's Dollar and Cents of Shopping Centers Handbook (2008) of target sales per square foot for various retail types (Table 3.13-10).

Table 3.13-10. Annual Sales from New Concourse-Related Retail Uses

Retail Use	Total Square Footage	Rent per Square Foot ($2032)	Gross Sales ($2032)
Full service restaurant	28,800	$570	$16,416,000
Limited service eating places	33,600	$420	$14,112,000
Bar	4,800	$570	$2,736,000
Groceries	32,000	$260	$8,320,000
Drug store	9,600	$260	$2,496,000
Clothing	25,600	$470	$12,032,000
Book/Music	3,200	$470	$1,504,000
Department stores	14,400	$260	$3,744,000
Other retail	8,000	$400	$3,200,000
Total	**160,000**	**—**	**$64,560,000**
Less 6% vacancy			**($3,873,600)**
Total annual sales			**$60,686,400**

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)

The level of net new sales tax generation to the county will depend on the ability of the proposed retail to attract a higher level of out-of-county commuter, visitor, or tourist spending than current retail offerings capture. Currently, approximately 13.6 percent of all weekday trips originating or ending at LAUS involve users crossing County lines on Metrolink trains and Amtrak trains—a percentage that is expected to remain the same on opening day (Metrolink 2018)[13] (Metro 2013c).[14] These passengers will likely account for a disproportionately larger share of overall retail spending than their total user percentage suggests, as intercity rail passengers on Amtrak California routes tend to have a substantially higher median income. Based on a 2013 survey,

[13] As of 2018, the 13.6 percent is made up of 60 percent Metrolink trips and 100 percent Amtrak rail trips.

[14] Los Angeles Union Station Master Plan Existing Transit Access, Circulation, & Parking Tech Memo, Table 1, Page 2-14.

intercity rail passengers had a median household income of approximately $76,000 (Amtrak 2013), compared to $16,000 to $21,000 for local Metro rail or bus riders (Metro 2013c).

A survey of retail spending patterns at comparable transportation facilities estimates a median expenditure of $5.04 (in 2018 dollars) on food and beverage per regional or intercity rail trip—a target unlikely to be currently achieved at LAUS based on the limited retail offerings available. Per passenger trip expenditures on news, gift, and specialty retail—categories not currently offered at LAUS but anticipated in the mix of uses of concourse-related improvements—constitute an additional $2.78 (in 2018 dollars) (Airports Council International North America 2015).[15] Assuming a conservative $1.00 increase in the per-trip expenditure of projected 2032 passengers due to concourse-related retail, and approximately 7.1 million regional or intercity trips annually by out-of-County station users (Metrolink 2018), net new retail spending will account for about 16 percent of the Build Alternative's annual taxable retail sales ($44.5 million in 2019 dollars, converted from the $60.7 million in 2032 dollars from Table 3.13-11).

As shown in Table 3.13-11, these taxable retail sales will translate into additional local sales taxes of $230,724 (in 2019 dollars).

Table 3.13-11. Calculation of Sales Tax Generated from New Concourse-Related Retail Uses

Element	Value ($2019)
Taxable retail sales	$44,496,251
Local sales tax share	3.25%
Local sales taxes	$1,446,128
Percent net new sales	15.9546%
Net new local sales taxes	**$230,724**

Source: Link US Final Economic and Fiscal Impact Assessment (Appendix O of this EIS)

Table 3.13-12 provides a summary of fiscal impacts from the Build Alternative. Because Metro is both the owner of LAUS and a county governmental entity, concourse retail lease revenues and operations costs are included in the fiscal impact analysis, in addition to the net change in property and sales taxes, only some of which will accrue directly to Metro.

[15] Uses median gross retail sales per enplanement for small airports as a comparable for LAUS.

Table 3.13-12. Net Fiscal Operational Impacts from the Build Alternative

Impact Category	Value ($2019)
Property tax – parcel acquisitions	($335,221)
Property tax – new concourse retail uses	$1,398,584
Net additional sales tax – new concourse retail uses	$230,724
Lease revenues – new concourse retail uses	$5,855,653
Facility operations – concourse	($3,146,506)
Net change	**$4,003,233**

Notes:
The impact of property acquisitions on sales tax revenues cannot be estimated with any certainty and is not included in Net additional sales tax revenues.
Lease revenues correspond to Net operating income from Table 3.13-8 ($8,599,224) and have been de-escalated to 2019 dollars.

Overall, the Build Alternative is estimated to increase local government revenues in the opening year by $4 million based on known and quantifiable direct impacts. However, additional impacts may be considered as data becomes available, including:

- **Losses in city gross receipts tax.** To the extent that displaced businesses do not relocate in the City of Los Angeles, these businesses would no longer be subject to the city's gross receipts tax, resulting in revenue loss to the city. However, the current level of gross receipts tax being collected by affected businesses is assumed to be relatively small.
- **Losses in city parking tax revenues.** At least two of the parcels planned for potential acquisition contain active parking uses. To the extent that these spaces are leased and generate parking tax revenue to the city, their loss would reduce parking tax revenues currently collected by the city. More information on the use of these parcels is needed to determine fiscal impacts.

Follow-on Effects from Additional Long-term Jobs for Concourse Operations

As mentioned earlier, after construction of the Build Alternative is complete, additional personnel will be needed to operate the new concourse (janitors, security guards, etc.) and to accommodate expanded Metrolink and Amtrak services and the new CHSRA service (e.g., ticketing counter staff). Overall, not including new retail jobs, it is expected that about 75 FTEs will be generated when the concourse operates at full capacity.

The economic and fiscal impacts associated with additional jobs at LAUS were estimated in IMPLAN® using an approach similar to that described for the impacts from capital expenditures.

Before conducting the impact analysis, IMPLAN® sectors corresponding to the jobs listed above were identified. FTE estimates were converted to actual (part-time and full-time) jobs for each industry using IMPLAN®'s FTE & Employment Compensation Conversion Table (the conversion factors are provided in the *Link US Final Economic and Fiscal Impact Assessment*, Appendix O of this EIS). IMPLAN® multipliers were applied to the part-time and full-time jobs created.

Table 3.13-13 shows the results of the IMPLAN® analysis by type of effect (direct, indirect, and induced) and by impact metric. All dollar amounts are expressed in millions of 2019 dollars ($2019 Millions), and employment impacts are expressed in total job-years. As shown in Table 3.13-13, the Build Alternative is expected to generate 145 job-years, which translates to approximately $9.9 million in labor income, for each year starting after the full build-out. Approximately $24.9 million in output (including $13.9 million value added) is anticipated, as well as $2.7 million in tax revenues. During operation, beneficial economic impacts would occur as a result of the Build Alternative because it would generate employment, labor income, and tax revenues.

Table 3.13-13. Annual Impacts from New Concourse-Related Operations Jobs (by Type and Metric)
($2019 Millions)

Impact Metric	Direct	Indirect	Induced	Total
Output	$13.6	$5.8	$5.5	$24.9
Value added	$7.3	$3.2	$3.4	$13.9
Labor income	$5.9	$2.0	$1.9	$9.9
Employment (job-years)	81	27	37	145
Taxes	—	—	—	$2.7

3.13.6 Mitigation Measures

No mitigation measures are proposed because the Build Alternative is anticipated to result in net benefits in terms of economic and fiscal impacts.

3.13.7 NEPA Impact Summary

This section summarizes the effects related to economic and fiscal impacts of the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

Under the No Action Alternative, there would be no loss in jobs or property taxes due to business displacement. However, there would also be no economic impacts from construction spending,

jobs, tax revenues, and labor income. Therefore, there would be no direct or indirect effects during construction or operation under the No Action Alternative.

Build Alternative

During construction, the Build Alternative is expected to generate 33,536 job years (representing more than $2.4 billion in labor income), $5.2 billion in output (including $2.8 billion in value added) and $0.7 billion in total federal, state, and local tax revenues. Property acquisition and demolition would result in job loss and lost property tax revenue associated with existing business. Up to 60 jobs would be lost and $335,221 in lost property tax would occur (the number of lost jobs would be reduced to 20 assuming some level of relocation). However, the concourse-related improvements are expected to generate property and sales tax revenues that more than outweigh the acquisition losses, resulting in net gain in tax revenues.

During operations, new property and sales taxes would occur from the expanded passenger concourse and retail activity, the creation of long-term jobs to operate the concourse and retail facilities, and the follow-on effects of these long-term jobs. The Build Alternative is expected to generate 145 job-years, which translates to approximately $9.9 million in labor income, for each year starting after the full build-out. Approximately $24.9 million in output (including $13.9 million value added) is anticipated, as well as $2.7 million in tax revenues. These are considered beneficial economic effects.

Table 3.13-14 provides an impact summary for the Build Alternative.

Table 3.13-14. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operation, and Induced Effects* Beneficial Effect	*Construction, Operation, and Induced Effects* No mitigation is required	*Construction, Operation, and Induced Effects* Beneficial Effect

3.14 Safety and Security

3.14.1 Introduction

This section provides an evaluation of potential effects related to safety and security conditions that may result from the No Action Alternative and the Build Alternative. Information contained in this section is summarized from other technical studies prepared for the Project, including the *Link US Threat and Vulnerability Assessment*, other published sources, and comments raised during the scoping process.

Safety related to potentially hazardous conditions within the Project study area also are described and analyzed elsewhere in this EIS, as follows:

- Section 3.3, Transportation, addresses emergency access and hazards due to design features.
- Section 3.9, Geology, Soils, and Seismicity, addresses seismic and geotechnical hazards.
- Section 3.10, Hazardous Waste and Materials, addresses hazardous materials and wastes from use or exposure to soil and groundwater contamination.

3.14.2 Regulatory Framework

Table 3.14-1 identifies and summarizes applicable laws, regulations, and plans relevant to safety and security.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, Procedures for Considering Environmental Impacts Sec.14(n)(14, 17, and 18), 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Environmental Procedures require the Draft and Final EIS to assess impacts on the general mobility of the elderly and handicapped as well as identify the level of protection afforded residents of the affected environment from construction and long-term operations. It should also discuss the potential for community disruption and impacts on local government services, as well as on public health and safety.
Rail Safety Improvement Act of 2008 (Public Law 110-432)	The RSIA of 2008 reauthorized the FRA to oversee the nation's rail safety program in response to fatal rail accidents between 2002 and 2008. The RSIA required the implementation of PTC systems to prevent further train-to-train collisions along specific rail lines by the end of 2015. Additionally, the RSIA aims to improve conditions of rail bridges and tunnels. The RSIA governs hours of

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security	
Law, Regulation, or Plan	**Description**
	service for workers, standards for track inspection, conductor certification, and highway grade crossings.
Federal Railroad Administration (49 Code of Federal Regulations Volume 4, Chapter 2, Part 200 to 299)	FRA regulations for railroad transportation safety, including standards, rules, and practices, are listed in 49 CFR Volume 4, Parts 200 to 299. By law, FRA is responsible for promoting railroad safety nationwide and enforcing federally mandated safety standards.
Federal Railroad Administration System Safety Program Rule (49 Code of Federal Regulations 270)	According to 49 CFR 270, each railroad and passenger rail operation is subject to adopt and fully implement a SSP plan and shall be approved by the FRA. Each SSP plan outlines the definition of the passenger rail operation's authority for the establishment of the SSP plan and describes the safety philosophy and safety culture of the passenger rail operation.
United States Code on Railroad Safety (49 United States Code § 20101 et seq.)	Part A of Subtitle V of Title 49 of the USC (49 USC §§ 20101 et seq.) contains a series of statutory provisions affecting the safety of railroad operations. Section 20109 of the act protects the reporting of safety concerns and injuries and prohibits railroads from disciplining, discharging, or retaliating in any form against employees who engage in protected activities. This section also prohibits the delay or interference of an injured employee's treatment.
Department of Homeland Security/Transportation Security Administration (49 Code of Federal Regulations 1580)	Part 12580, Rail Transportation Security, codifies the Transportation Security Administration inspection program. It also includes security requirements for freight railroad carriers; intercity, commuter, and short-haul passenger train service providers; rail transit systems; and rail operations at certain fixed-site facilities that ship or receive specified hazardous materials by rail.
Emergency Planning and Community Right-to-Know Act (42 Code of Federal Regulations 116)	The objectives of the Emergency Planning and Community Right-to-Know Act are to allow state and local planning for chemical emergencies, provide for notification of emergency releases of chemicals, and address a community's right-to-know about toxic and hazardous chemicals.
Transportation Security Administration – Security Directives for Passenger Rail	Security Directives RAILPAX-01-01 and RAILPAX-04-02 require rail transportation operators to implement certain protective measures, report potential threats and security concerns to the Transportation Security Administration, and designate a primary and alternate security coordinator.
Homeland Security Act of 2002 (6 United States Code 101)	The Homeland Security Act of 2002 was signed into law on November 25, 2002 (Pub. L. 107-296) in response to the September 11, 2001, terrorist attacks (Department of Homeland Security 2012). The act brought together approximately 22 separate federal agencies to establish the Department of Homeland Security. The department's mission is to ensure the U.S. is safe, secure, and resilient against terrorism and other hazards.
National Fire Protection Association 130 Standard for Fixed Guideway Transit and Passenger Rail Systems	The NFPA has a standard that specifies fire protection and life safety requirements for underground, surface, and elevated fixed guideway and passenger rail systems. The NFPA 130 addresses emergency ventilation systems, emergency procedures, communications, control systems, vehicle storage areas and contains provisions pertaining to stations accommodating only passengers and employees of the fixed guideway transit and passenger rail systems and incidental occupancies in the stations.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
Federal Railroad Administration Collision Hazard Analysis Guide (October 2007)	The Collision Hazard Analysis Guide identifies steps to be followed in completing comprehensive rail hazard analyses, including consideration for collisions, derailments, and other conditions that affect the safety of passengers. It also offers guidance on the development of effective hazard mitigation strategies.
State	
California Public Utilities Code Section 768	Under CPUC Section 768, the CPUC may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner to promote and safeguard the health and safety of its employees, passengers, customers, and the public. The CPUC may prescribe, among other things, the installation, use, maintenance, and operation of appropriate safety or other devices of appliances, including interlocking and other protective devices at grade crossings or junctions and block or other systems of signaling. The CPUC may establish uniform or other standards of construction and equipment and require the performance of any other act which the health or safety of its employees, passengers, customers, or the public may demand.
California Public Utilities Code (Sections 7710 to 7727)	CPUC Sections 7710 to 7727 cover railroad safety and emergency planning and response. Under this code, CPUC is required to adopt safety regulations and to report sites on surface transportation modes that are deemed hazardous within California.
California Public Utilities Code Section 7661 and 7665 (Local Community Rail Security Act of 2006)	Under CPUC Section 7661 and Section 7665 (the Local Community Rail Security Act of 2006), every railroad corporation operating in California is required to develop, in consultation with, and with the approval of, the California Emergency Management Agency, a protocol for rapid communications with the agency, the California Highway Patrol, and designated county public safety agencies in an endangered area if there is a runaway train or any other uncontrolled train movement that threatens public health and safety.
California Emergency Services Act (California Government Code § 8550 et seq.)	The California Emergency Service Act supports the state's responsibility to mitigate adverse effects of natural, human-produced, or war-caused emergencies that threaten human life, property, and environmental resources of the state. This includes acts of terrorism, hazardous materials spills, and transportation of hazardous materials.
Local	
City of Los Angeles General Plan, Safety Element (1996)	The City of Los Angeles General Plan Safety Element identifies goals and objectives regarding hazard mitigation, emergency response, and disaster recovery. • Goal 1: A city where potential injury, loss of life, property damage and disruption of the social and economic life of the city due to fire, water related hazard, seismic event, geologic conditions, or release of hazardous materials disasters is minimized. ○ Policy 1.1.2: Disruption reduction. Reduce, to the greatest extent feasible and within the resources available, potential critical facility, governmental functions, infrastructure, and information resource disruption due to natural disaster. (All Emergency Operations Organization [EOO] programs involving mitigation of disruption of essential infrastructure,

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	services, and governmental operations systems prepare personnel for quickly reestablishing damaged systems implement this policy.) ○ Policy 1.1.4: Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect city water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation. (All EOO hazardous materials hazard and water pollution mitigation programs implement this policy.) ○ Policy 1.1.5: Risk reduction. Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training. (All programs that incorporate current data, knowledge and technology in revising and implementing plans [including this Safety Element], codes, standards, and procedures that are designed to reduce potential hazards and risk from hazards potentially associated with natural disasters implement this policy.) ○ Policy 1.1.6: State and federal regulations. Assure compliance with applicable state and federal planning and development regulations (e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act). (All EOO natural hazard enforcement and implementation programs relative to non-city regulations implement this policy.) • Goal 2: A city that responds with the maximum feasible speed and efficiency to disaster events so as to minimize injury, loss of life, property damage, and disruption of the social and economic life of the city and its immediate environs. • Goal 3: A city where private and public systems, services, activities, physical condition, and environment are reestablished as quickly as feasible to a level equal to or better than that which existed prior to the disaster. ○ Policy 3.1.2: Health/safety/environment. Develop and establish procedures for identification and abatement of physical and health hazards which may result from a disaster. Provisions shall include measures for protecting workers, the public, and the environment from contamination or other health and safety hazards associated with abatement, repair, and reconstruction programs. (All EOO hazard mitigation, response, recovery programs involving identification, and mitigation of release of hazardous materials and protection of the public and emergency personnel from hazardous materials implement this policy.)
Los Angeles County Operational Area Emergency Response Plan (2012)	The Los Angeles County OAERP addresses the OA coordinated response to emergency situations associated with natural, man-made, and technological incidents. The OA is defined as Los Angeles County and its political subdivisions. The objective of the plan is to integrate OA resources to be an efficient organization capable of responding to emergencies using the National Incident

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	Management System, Standardized Emergency Management System, mutual aid, and other appropriate response procedures. The emergency response plan includes the following assumptions and goals applicable to safety and security: • The OA will coordinate resources to save lives and minimize injury to persons and damage to property and the environment. • County of Los Angeles, as the OA Coordinator, will coordinate and facilitate emergency operations within the OA. • Promote disaster-resistant future development. • Reduce the possibility of damage and losses to existing assets, particularly people and facilities/infrastructure.
Los Angeles County All-Hazard Mitigation Plan (2014)	The Los Angeles County All-Hazard Mitigation Plan sets strategies for coping with the natural and manmade hazards faced by residents. The plan is a compilation of information from county departments correlated with known and projected hazards that face Southern California. It addresses potential damages in the unincorporated portions of the county as well as to county facilities. The plan complies with, and has been approved by, the FEMA and the Governor's Office of Emergency Services.
City of Los Angeles Vision Zero Action Plan (2017)	Former Mayor Eric Garcetti and LADOT released the Vision Zero action plan in January 2017. The goal of this program is to eliminate traffic related deaths by 2025. It provides various goals to help reduce and eliminate traffic deaths, including within at-grade crossings.
Metro Connect US Action Plan (2015)	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 Union Station Master Plan (2014)	Metro purchased the LAUS landmark with the goal of accommodating current and future transit needs, such as HSR and creating greater connectivity with surrounding neighborhoods while protecting and enhancing the historic building. The master plan envisioned several major projects in and around LAUS including SCRIP (former Link US Project), the planned HSR system, and the LA Union Station Forecourt and Esplanade Improvements project that includes complete streets and enhanced walking and biking paths.
City of Los Angeles Downtown Community Plan (2023)	The DCP replaced the Central City North Community Plan and the Central City Community Plan upon its adoption in 2023. The following goals and policies contained in the DCP are related to safety and security: • LU 11.1: Require active ground floors and street frontages that improve walkability and connectivity, especially between transit stations and nearby destinations. • LU 11.6: Require that pedestrian bridges minimize visual impacts, be architecturally integrated into building design, connect with public entrances, incorporate lighting and directional signage, and include maintenance and safety programs.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	• LU 11.7: Limit the impact of pedestrian bridges on public streets and infrastructure below them and incorporate improvements to public streets. • LU 16.2: Promote public health and environmental sustainability outcomes consistent with the City's Plan for Healthy Los Angeles and the Sustainable City pLAn. • LU 22.17: Support the implementation of the ConnectUS Action Plan to improve pedestrian and cyclist linkages between Union Station and surrounding districts. • MC Goal 1: A safe transportation system that accommodates the needs of all people. • MC 1.2: Prioritize safety improvements on the High Injury Network as designated by LADOT to achieve high impact reductions in injuries and fatalities. • MC Goal 3: A safe and inviting pedestrian environment. • MC 3.2: Encourage the installation of curb ramps, signalized crosswalks, and other pedestrian safety improvements throughout Downtown. • MC 3.3: Prioritize pedestrian safety for construction detours, first contain construction staging onsite, then consider using parking and travel lanes before significantly disrupting pedestrian routes. • MC 3.4: Enhance the pedestrian experience between major destinations and transit stations through improved streetscapes and wayfinding programs. • MC Goal 4: A safe and integrated bicycle network that provides access to transit and key destinations. • MC 4.1: Promote the development of protected bicycle facilities, with dedicated signals, along key corridors to improve safety, comfort, and access for cyclists of all abilities. • MC 4.3: Support the expansion of Bike Share throughout Downtown and adjacent areas, especially as a means to connect areas that are less served by transit. • PO 7.3: Maintain safety for all users, with appropriate traffic control features and ADA accessibility. • MC 5.7: Find opportunities to install elongated transit curb extensions and islands along key corridors to facilitate transit boarding and reduce conflicts with other modes. Consider temporary platform products only when phased implementation is a project consideration.

Notes:
ADA=American Disabilities Act; CFR=Code of Federal Regulations; CPUC=California Public Utilities Commission; DCP=Downtown Community Plan; EOO=Emergency Operations Organization; EIS=environmental impact statement; FEMA=Federal Emergency Management Administration; FRA=Federal Railroad Administration; LADOT=Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; LU=Land use; NEPA=National Environmental Protection Act; NFPA= National Fire Protection Association; MC=Mobility and Connectivity; OAERP=Operational Area Emergency Response Plan; OA=Operational Area; PTC=positive train control; RSIA=Rail Safety Improvement Act; SSP=System Safety Program; USC=United States Code.

3.14.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Community safety services
- Safety conditions
- Security conditions

Methodology

Comments Received During Scoping

The following issues of concern were raised by the public and stakeholders during the NOI scoping period (2016) and the Revised NOI scoping period (2020) and are addressed in this section (details can be found in Chapter 8 of the EIS, Public and Agency Outreach):

- Community safety services staffing and response times;
- Traffic congestion and delays potentially affecting emergency access, bicycle and pedestrian access, and safety;
- Designated paths of travel in the passenger concourse;
- Passenger accessibility and egress;
- ADA compliant facilities;
- Increase in crime and acts of terrorism; and
- Safety of rail passengers, pedestrians, and bicyclists.

Geographic Area Considered

The geographic area considered for impacts related to safety and security encompasses the areas that would be directly or indirectly affected by construction and operation of the Build Alternative. These areas include the Project footprint, City of Los Angeles, and Los Angeles County.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Community Safety Services

The City of Los Angeles Police Department (LAPD), Los Angeles County Sheriff's Department (LASD), City of Los Angeles Fire Department (LAFD), and Los Angeles County Fire Department (LACOFD) websites and the City of Los Angeles General Plan were reviewed to determine the location and service areas of fire stations, police stations, and other emergency providers that serve the Project study area. These resources were also reviewed to evaluate how community safety service providers could be affected by construction and operation of the Build Alternative. Project-related effects would be considered adverse if the Build Alternative affects service ratios, response times, or performance objectives of emergency responders.

Safety Conditions

Safety conditions were assessed by determining the likelihood for changes relative to:

- Pedestrian and bicyclist safety;
- Train accidents/incidents,[2] including within at-grade railroad crossings;
- Passenger concourse safety; and
- Public health.

Pedestrian and Bicyclist Safety. A safety assessment was performed to identify existing conditions for pedestrians and bicyclists in the Project study area to determine potential for safety impacts on pedestrians, bicyclists, LAUS patrons, and employees. The safety assessment focused on pedestrian/bicycle safety conditions near the existing rail alignment and at the one at-grade crossing where proposed improvements would occur (North Main Street).

Pedestrian and bicycle safety analysis factors included the location of existing sidewalks, designated bicycle facilities, and the presence of existing and proposed safety features (e.g., signage, activated warnings, gates, flashing lights, etc.) in the vicinity of North Main Street (the only at-grade railroad crossing within the limits of the Project footprint). The FRA's *Collision Hazard Analysis Guide: Commuter and Intercity Passenger Rail Service* (2007) was also reviewed to identify characteristics of the proposed infrastructure that would potentially elevate risk to pedestrians and bicyclists' safety. Project-related effects would be considered adverse if the Build Alternative exposes pedestrians and bicyclists to safety hazards resulting from temporary road closures and detours, which could affect access and place them in close proximity to heavy construction equipment. Operationally, Project-related effects would be considered if the

[2] According to the FRA's definition of accident/incident in 49 CFR 225.5, "accident/incident" means (1) any impact between railroad on-track equipment and a highway user at a highway/rail grade crossing; (2) any collision, derailment, fire, explosion, act of God, or other event involving the operation of railroad on-track equipment, whether standing or moving, that results in reportable damages greater than the current reporting threshold to railroad on-track equipment, signals, track, track structures, and roadbed; (3) each death, injury, or occupational illness that is a new case and meets the general reporting criteria listed in 49 CFR 225.19(d)(1) through (d)(6) concerning an event or exposure arising from the operation of a railroad is a discernable cause of the resulting condition or a discernable cause of a significant aggravation to a preexisting injury or illness. The event or exposure arising from the operation of a railroad need only be one of the discernable causes; it need not be the sole or predominant cause.

increased train movements facilitated by the Build Alternative create a potential for train-to-train collisions and other accidents/incidents involving pedestrians, bicyclists, or vehicles, or derailment.

Train Accidents/Incidents including within At-Grade Railroad Crossings. To determine existing conditions, the number of incidents (train collisions or derailments) within the Project study area were tabulated. Data was gathered from the California Office of Traffic Safety to determine the existing number of vehicle, pedestrian, and bicycle collisions within the City of Los Angeles and County of Los Angeles. The FRA's Office of Safety Analysis website was also reviewed to identify railroad safety information, including accidents and incidents, as well as the inventory and highway-rail crossing data in the Project study area. Operational and infrastructure safety conditions within the Project study area were evaluated to determine if proposed infrastructure would potentially increase the number of rail accidents and incidents or increase safety hazards for the North Main Street at-grade crossing.

For existing safety conditions related to regional/intercity trains, HSR trains, and freight trains within the Project study area, it is important to note that each type of train operates differently and varies in terms of equipment types, speeds, and stopping requirements. The mix of operators (Metrolink and Amtrak) and their different operating practices were considered with regard to the overall safety conditions within the Project study area. At LAUS, Metrolink oversees all dispatching.

Project-related effects would be considered adverse if the Build Alternative increases the number of rail accidents and incidents or increases safety hazards within at-grade railroad crossings, posing a potential safety hazard to drivers, pedestrians, bicyclists, passengers, and workers.

Passenger Concourse Safety. LAUS was evaluated for life-safety requirements to determine potential impacts related to human accessibility and egress. For this evaluation, NFPA 130 standards for passenger egress and evacuation were considered when evaluating areas where human occupancy is predominant (i.e., the concourse and platforms). Section 433 of Title 24 of the CBC states that the concourse, buildings, or structures are considered a fixed guideway transit system and NFPA 130 standards shall apply. Project-related effects would be considered adverse if the Build Alternative impedes or blocks access and egress in the passenger concourse, which would affect the ability of passengers to properly evacuate.

Public Health. The evaluation of public health issues considers Metro's current practices to keep facilities clean and sanitary and how the proposed improvements could improve public health and safety. The location and quantity of restroom facilities at LAUS and presence of daily and nightly janitorial crews were also considered. Project-related effects would be considered adverse if the Project increases the public's risk to health issues from unsanitary facilities.

Security Conditions

Security refers to prevention of acts defined as unlawful, criminal, or intended to bring harm to another person or damage property. Proposed infrastructure improvements were evaluated to

determine security conditions resulting from increased or new crime risks that could occur during construction and operation.

The FBI's Crime Data Explorer was reviewed to identify crimes reported by the LAPD and Metro from 2009-2019 and to identify potential crime issues in the Project study area. Analysis of crime for transit and railroads within Los Angeles County is based on data gathered from Metro and the Los Angeles Transportation Services Bureau. Collected crime data provides the baseline for evaluating potential impacts of the Build Alternative.

Project-related effects would be considered adverse if the Build Alternative is not designed properly to minimize or mitigate for threats and hazards including improvised explosive devices (IDE), chemical/biological threats, and robbery, which would expose the public and infrastructure to security risks.

3.14.4 Affected Environment

Safety and security of railroad facilities falls under the jurisdiction of various federal, state, and local agencies, including the National Transportation Safety Board (NTSB), FRA, and California Public Utilities Commission (CPUC). With regard to safety and security, the primary focus for these agencies is the overall safety of railroad facilities and operations. Local agencies, such as police/sheriff departments and transportation agency security forces, are primarily focused on passenger security and the security of facilities from possible crimes, vandalism, or destruction. Metro is responsible for the safety and security of its facilities and takes a holistic approach to its public safety initiatives that include six focus areas in its framework: deployment of resources, security design, training and procedures, tools and technology, communications and public education, and accountability and transparency (Metro 2021).

Community Safety Services

Community safety services include fire protection, law enforcement, and emergency medical services.

Fire Protection

Fire protection services in the Project study area are provided by LAFD. Several LAFD fire stations are located within the vicinity of the Project study area. As depicted on Figure 3.14-1, the closest LAFD fire station to the Project study area is Fire Station No. 4, located at 450 East Temple Street in the Little Tokyo/Olvera Street/Chinatown community. LACOFD also serves the Project study area; the nearest LACOFD fire station is Fire Station No. 1, located at 1108 Sheriff Road.

From January to April 2023, the average LAFD response times were 1 minute, 7 seconds for average call processing; 54 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); 5 minutes, 9 seconds for average travel time for incidents involving emergency medical services; and 5 minutes, 7 seconds average travel time for nonemergency medical services incidents (LAFD 2023). The NFPA has established national performance standards for

response times, which is 1 minute, 20 seconds for turn out and 4 minutes for travel time (NFPA 2009).

From January to September 2020, the average LAFD response times specifically for Fire Station No. 4 were 49 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); 6 minutes, 27 seconds for average travel time for incidents involving emergency medical services; and 6 minutes, 6 seconds average travel time for non-emergency medical services incidents (LAFD 2020).

Law Enforcement

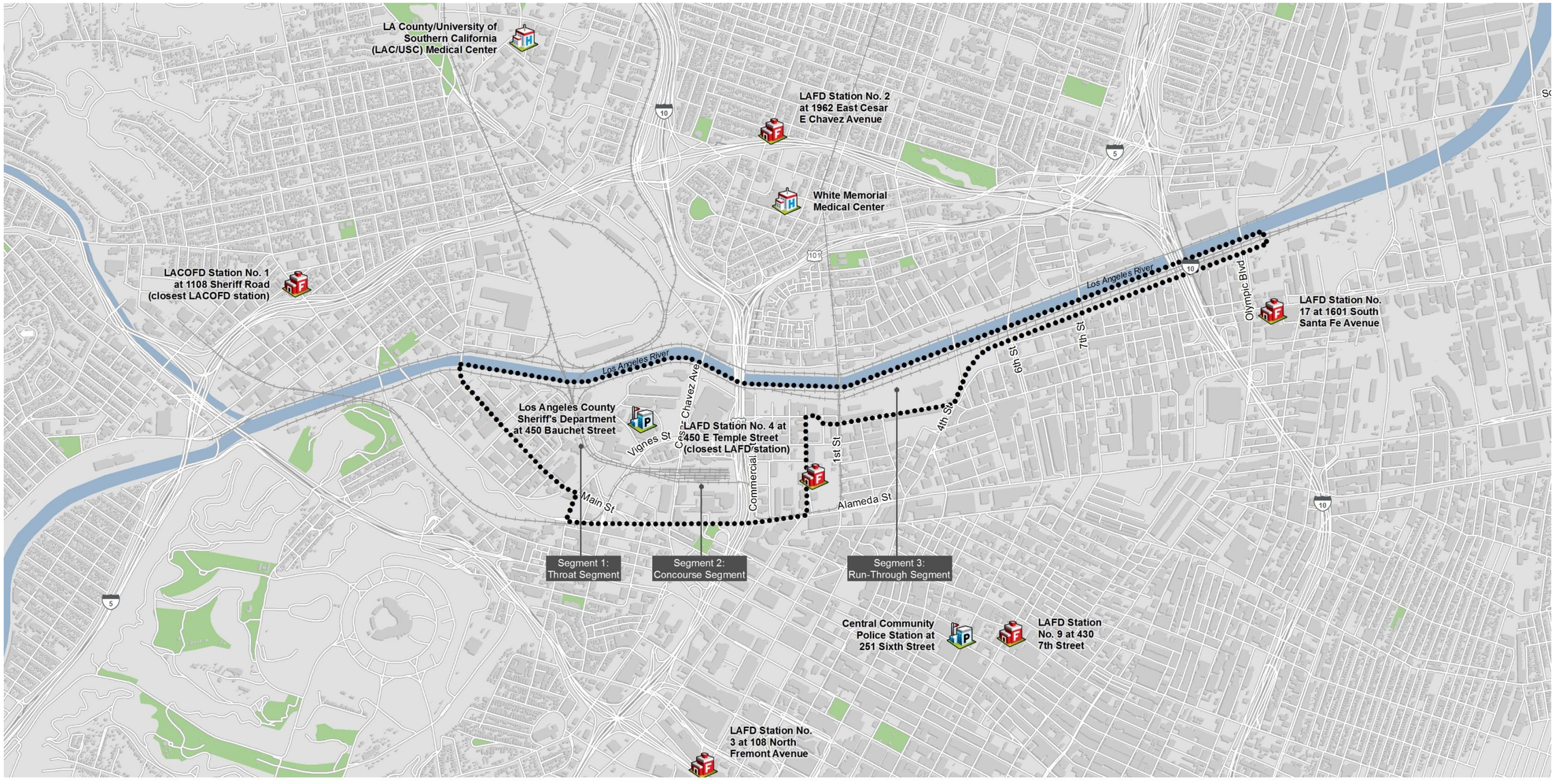
Law enforcement services in the Project study area are provided by the LAPD, Amtrak Police, and LASD.

As depicted on Figure 3.14-1, an LASD office is located within the Project study area to the east of LAUS at 450 Bauchet Street. The nearest LAPD station is the Central Community Police Station located at 251 Sixth Street, approximately 0.5 mile southwest of the Project study area.

LASD 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 (*Link US Community Impact Assessment,* Appendix D of this EIS). LASD officers routinely patrol LAUS. Additional security is provided by surveillance cameras along platforms and throughout LAUS, which are monitored by security personnel. In addition, conductors, LASD, Amtrak Police, and/or security personnel aboard both regional/intercity trains (Amtrak and Metrolink) request confirmation of paid tickets and remove non-ticketed passengers.

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Figure 3.14-1. Community Safety Service Facilities within the Vicinity of the Project Study Area



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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 LAPD, LASD, and Long Beach Police Department. This multi-agency approach allows for higher visibility, enhanced response times, improved customer experience, and deployment of specifically trained officers to engage patrons with mental illness and/or homelessness.

Emergency Medical Services

City of Los Angeles emergency medical services are provided by LAFD, LACOFD, emergency medical service agencies, and independent ambulance services. There are four hospitals within the Los Angeles city limits: Kaiser Foundation Hospital, LA County/University of Southern California (LAC/USC) Medical Center, Pacific Alliance Medical Center, and White Memorial Medical Center. The nearest medical center to the Project study area is White Memorial Medical Center and shown on Figure 3.14-1.

Emergency Response Plans

Counties and cities prepare emergency response plans in addition to the emergency operations goals and policies provided by their general plans. Amtrak and Metrolink also have plans to prepare for safety and security concerns for emergency purposes.

The Los Angeles County All-Hazard Mitigation Plan addresses natural and human-caused events, as well as technological hazards faced by county residents. The County of Los Angeles Operational Area Emergency Response Plan (OAERP) addresses emergency response procedures associated with natural events, human-caused events, and technological incidents. The OAERP does not address day-to-day emergencies. The Emergency Operations Plan for the City of Los Angeles addresses the city's response to small- to large-scale emergencies associated with natural disasters or human-caused emergencies.

The Amtrak System Safety Program provides a comprehensive description of current safety-related policies, programs, and practices that aid in the prevention of and response to accidents, injuries, and illnesses. The Metrolink Security and Emergency Preparedness Plan establishes security measures, policies, and procedures to address aspects of operations and services related to security threats and vulnerabilities.

Safety Conditions

Existing conditions regarding train accidents/incidents, concourse safety, pedestrian and bicyclist safety, and public health are described below.

High-Risk Facilities and Fall Hazards

There are no hospitals or chemical facilities within the Project footprint. Additionally, no fall hazards were identified.

High-risk facilities within the Project footprint included several oil wells and one natural gas line that is proposed to be lowered in place and encased and falls within the footprint of the run-through track limits. Impacts associated with oil wells and utilities are addressed in Section 3.10, Hazardous Waste and Materials of this EIS.

Train Accidents/Incidents

The FRA defines total accidents/incidents as the sum of train accidents, roadway/highway-rail incidents, and other incidents. Each of these terms are defined below.

- Train accidents are defined as a safety-related event involving on-track equipment and a highway user at a roadway/highway-rail grade crossing, whether standing or moving, including derailments and collisions (FRA 2014).
- Roadway/highway/rail incidents are defined as any impact between railroad on-track equipment and roadway/highway users (including motorists, bicycles, pedestrians, or any other mode of surface transportation) that result in injuries or fatalities (casualties) but not involving property damage above reportable thresholds (FRA 2014).
- Other incidents include any event other than a roadway-/highway-rail incident that caused a death, injury, or occupational illness to a railroad employee or that resulted in an injury or fatality, including incidents involving pedestrians in the rail ROW (FRA 2014).

FRA maintains data related to rail accidents and incidents, including injuries and causes. The most common type of accident in Los Angeles County for freight and commuter/passenger rail are in-yard derailments caused by human error. Table 3.14-2 identifies the number of rail accidents in Los Angeles County (the smallest geography available) between 2014 and 2023 (current 2023 data available is through February 28, 2023).

Table 3.14-2. Rail Accidents in Los Angeles County (2014 to 2023)

Accidents	Class I Freight Rail	Commuter and Passenger Rail
Total Accidents	148	16
Type		
Collision	6	0
Derailment	121	11
Other (e.g., obstruction)	21	5
Cause		
Track	30	4
Signal	3	0

Table 3.14-2. Rail Accidents in Los Angeles County (2014 to 2023)		
Accidents	**Class I Freight Rail**	**Commuter and Passenger Rail**
Power/Equipment	12	3
Human	87	7
Miscellaneous	16	2

Source: FRA 2023a, FRA 2023b

Existing At-Grade Intersection Conditions

There is only one at-grade railroad crossing at North Main Street within the Project study area, as depicted on Figure 2-27 in Chapter 2.0, Alternatives and Design Options Considered. Based on a review of FRA's Crossing Inventory Lookup, which has available information on rail incidents with roadway/highway users (including cars, pedestrians, and other rail cars), four incidents have occurred within the Project study area at the North Main Street crossing north of LAUS (Crossing ID: 027607D) (FRA 2023b). Two incidents occurred in 1984, prior to implementation of PTC technology. In 2014, an Amtrak train struck an occupied vehicle with no reported injuries, death, or equipment damage. The most recent incident occurred in 2020 when a train struck the rear portion of a vehicle fouling the track. There are no other at-grade crossings located within the Project study area.

Pedestrian and Bicyclist Safety

Each year the California Office of Traffic Safety publishes crash rankings for all counties and cities. The rankings were developed so that individual cities could compare their city's traffic safety statistics to those of other cities with similar-sized populations. Data is unavailable for collisions that occurred for sub-areas of the city and specifically within the Project study area.

Table 3.14-3 displays the number of pedestrians and bicyclists killed or injured in accidents with vehicles in the County of Los Angeles and City of Los Angeles.

Table 3.14-3. Pedestrian and Bicyclist Victims Killed or Injured, 2020		
Jurisdiction	**Pedestrians**	**Bicyclists**
Los Angeles County	4,661	2,601
City of Los Angeles	2,616	1,366

Source: California Office of Traffic Safety 2023a, 2023b

In the City of Los Angeles, the Vision Zero program aims to reduce traffic related deaths to 0 by 2025. In the vicinity of LAUS, three roadways are listed in Vision Zero as part of the High Injury Network: East Cesar Chavez Avenue, Vignes Street, and North Alameda Street.

Metro's *ConnectUS Action Plan* and *Union Station Master Plan* identify existing and proposed pedestrian, bicycle, and transit facilities that connect the communities around LAUS and provide circulation within the station. Several pedestrian and bicycle facilities are proposed in Metro's *ConnectUS Action Plan.* Roadways surrounding LAUS would also be modified to facilitate more pedestrian and bicycle infrastructure as part of Metro's Forecourt and Esplanade Improvements Project. Intersections in the Project study area generally have marked crosswalks for safe pedestrian movement. On most roadways, sidewalks are available on both sides or on one side of the street and meet the standards of the ADA. There are three existing bicycle lane facilities within the Project study area located along Los Angeles Street, North Main Street, and along Third Street.

There is one at-grade crossing within the Project study area located at North Main Street (refer to Figure 2-27 in Chapter 2.0, Alternatives and Design Options Considered). Within the Project study area and throughout the city, intersections near at-grade crossings are generally signalized or stop-controlled.

Passenger Concourse Safety

As discussed in Chapter 1.0, Purpose and Need, the current configuration of the 28-foot-wide pedestrian passageway restricts capacity and cross-campus circulation and associated access to and from transit modes served at LAUS. It also poses safety hazards because the current layout of the platforms in the rail yard and the existing passenger ramps and pedestrian passageway are highly congested during peak AM and PM travel hours (6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, respectively). In addition, the current configuration causes ponding during rain events because water drains down stairways and ramps that provide passenger access to the rail platforms. Existing LAUS facilities do not meet ADA or current CBC requirements (CBC 2022, as amended), including applicable NFPA egress requirements for safe evacuation (NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2020 edition). NFPA provides several codes and standards that pertain to egress, including the NFPA 101 Section 7.9 (requirements for emergency lighting systems), NFPA 101-2009 (Life Safety Code), and the NFPA 1 (Fire Code). These codes and standards describe the requirements for the number, location, and accessibility of exits, as well as the width and configuration of exit corridors, stairs, and ramps.

The existing 21-foot-wide platforms provide egress for passengers from the rail yard into the pedestrian passageway. The pedestrian passageway does not meet the proper NFPA 130 egress and evacuation standards to classify the space as a point of safety (NFPA 2004). Passenger movements from the pedestrian passageway level to the platforms flow north and south. ADA access to trains exists only at the south end of the platforms, where pedestrians share a common aisle with baggage carts.

There are two egress routes from the platforms, both of which do not meet NFPA 130 standards, which include:

- The ramps and stairs to the pedestrian passageway that exit to the west to Alameda Street or east to Patsaouras Transit Plaza; and
- The paved baggage tug route and fire access road at the south end of the platforms, which exit to Alameda Street to the west or Cesar Chavez Avenue to the north.

Using the ramps and stairs to the pedestrian passageway restricts passengers to only exit in two directions, either west through LAUS to Alameda Street or east to Patsaouras Transit Plaza and eventually to Vignes Street. Exiting the platforms from the south or north end of the platforms via a paved baggage tug route and fire access road would informally evacuate passengers in the event of an emergency. The fire lane can be considered as reaching a public way for safety but would require passengers to cross an at-grade rail crossing associated with the existing Gold Line tracks.

Platform 1 does not have access to any baggage tug routes for evacuation, Platform 2 has restricted access to baggage tug routes for potential passenger egress, and Platforms 3 through 7 have unprotected grade crossings that are impractical to use as passenger egress routes. Egressing off the north end of the platforms does not provide a point of safety that meets NFPA 130 standards.

In the event of an emergency, it is assumed that passengers at the north end of the platforms would need to be evacuated by emergency personnel. The travel distance exceeds 300 feet from the most remote point on the platform, which does not comply with NFPA 130 standards. In addition, when applying forecasted station conditions with a run-through track structure, passengers would not be able to use the southern baggage tug route to egress off the south ends of the platforms, thus reducing overall station egress capacity. This further shows that the existing condition does not have enough points of egress to evacuate the platforms in 4 minutes or less, per NFPA 130 standards.

ADA access provided by the existing 21-foot-wide platforms includes 30 inches of clear wheelchair aisle space on each side of the stair/ramp portals, which are over 100 feet long. Only one wheelchair may occupy this space at a time, which restricts adequate space for multiple wheelchairs and turning wheelchairs on the platforms. Wheelchairs coming from two directions cannot pass at the side of portals. Turning a wheelchair requires 60 inches of clear space and within LAUS, wheelchairs are unable to turn around unless they cross into the safety zones demarcated by the tactile warning tile.

Currently, there is no fire suppression system serving the pedestrian passageway or ramps at LAUS. There are no public water services (e.g., hoses, hydrants) for fire suppression within the building systems of the existing pedestrian passageway and passenger access ramps.

Existing safety instructions for passengers within LAUS is provided through use of passenger safety signage including instructions to stand behind painted lines while waiting on the platform,

to never run on the platform, to use handrails when ascending or descending stairs onboard, and to not lean on or hold doors open.

Public Health

Metro is committed to the safety and health of LAUS patrons and employees, especially since the onset of the COVID-19 pandemic. Daily janitorial services are provided throughout LAUS, and buses and trains are cleaned daily by each operator. Metro is joining public transit agencies across the U.S. to make every trip safer for transit riders by adopting best practices and official guidance. Metro's current safety measures that promote public health include, but are not limited to, the following:

- Cleaning buses and trains at least once daily with EPA-approved disinfectants and approved industry standards;
- Cleaning priorities at LAUS include high-contact surfaces, including handrails, elevator call buttons, and TAP vending machines;
- Implementing strengthened cleaning regimens at major transit hubs and LAUS;
- Installation of sanitation stations and hand sanitizer dispensers at major transit stops and stations;
- Provision of face masks and appropriate personal protective equipment for employees; and
- Adding and modifying service.

Metro's incorporation of these public health safety measures protects passengers to the greatest extent practical.

At LAUS, there are an insufficient quantity of restrooms available to adequately serve the number of passengers at the station. The one set of restrooms at LAUS is located just west of the pedestrian passageway in the concourse area and is usually open 24-hours per day, with exception of when the restrooms are cleaned by janitorial staff. Additional restrooms are located in the Amtrak lounge area, but these facilities are for Amtrak patrons only.

Security Conditions

Security measures are employed within and around LAUS through interdepartmental coordination. Providing a secure environment for LAUS patrons and employees is the responsibility of LAPD Transit Services Bureau, Amtrak Police, and private security. Law enforcement and security officers frequently monitor trains, buses, platforms, and the interior and exterior of LAUS and its facilities. In addition to foot patrols in and around LAUS, surveillance cameras are located throughout the station and its facilities. The cameras are monitored by security personnel and Amtrak Police, who inform law enforcement of incidents and areas to patrol around LAUS. Additional LAPD support would be engaged at the request of on-site officers and security personnel. In addition, conductors, LASD, and security personnel aboard both

Amtrak and Metrolink trains request confirmation of paid tickets and are responsible for removal of non-ticketed passengers.

Crime

Table 3.14-4 lists violent crimes reported by Metro to the FBI from 2009-2020 (FBI 2023). Violent crime is composed of four types of offenses: homicide, rape, robbery, and aggravated assault. Table 3.14-5 lists property crimes reported by Metro to the FBI from 2009-2020 (FBI 2023). Property crime is composed of four types of offenses: arson, burglary (breaking and entering), larceny (unlawful take of property), and motor vehicle theft. All crime incidents reported by Metro displayed in the tables below demonstrate the likelihood of these types of crimes to occur at LAUS.

Table 3.14-4.Violent Crimes Reported by Metro (2009-2020)

Year	Type of Violent Crime			
	Homicide	Rape	Robbery	Aggravated Assault
2009	0	0	2	8
2010	0	0	3	10
2011	0	0	0	8
2012	0	0	1	10
2013	0	0	0	1
2014	0	0	3	6
2015	0	0	1	4
2016	0	1	1	1
2017	0	0	0	1
2018	0	0	1	1
2019	0	0	0	6
2020	0	0	2	4

Source: Federal Bureau of Investigation 2023

Table 3.14-5. Property Crimes Reported by Metro (2009-2020)

Year	Type of Property Crime			
	Arson	Burglary	Larceny	Motor Vehicle Theft
2009	1	2	21	0
2010	0	0	22	0
2011	0	0	43	0
2012	0	1	52	0
2013	0	3	28	0
2014	0	15	46	0
2015	0	2	42	0
2016	1	0	22	0
2017	0	0	9	0
2018	0	0	6	0
2019	0	0	20	1
2020	1	2	9	0

Source: Federal Bureau of Investigation 2023

Terrorism

With regard to terrorism concerns, possible targets in the City of Los Angeles include major rail yards, power generation facilities, and any business with significant volumes of hazardous materials, all of which are present in the Project study area and 0.5-mile buffer.

To address risks and combat threats of terrorism, Metro and LASD regularly coordinate with the U.S. Department of Homeland Security at several levels, participate in the Regional Transit Security Working Group, are members of the local Joint Terrorist Task Force, and coordinate with the area Federal Security Director for the Transportation Security Administration on counterterrorism matters among other issues. Metro is currently in compliance with all U.S. Department of Homeland Security Transportation Security Administration directives as well as with 49 CFR 1580, which requires designation of a rail security coordinator and reporting significant security concerns related to potential risk of terrorism to the Transportation Security Administration.

3.14.5 Environmental Consequences

TOPIC 3.14-A	Community safety services

No Action Alternative

The No Action Alternative would not result in direct effects on community safety services or affect service ratios, response times, or other performance objectives within LAUS and the surrounding area. However, the No Action Alternative would not result in safety enhancements to LAUS or improvements to LAUS to meet current ADA, NFPA, and building code requirements. Operation of LAUS would continue in business-as-usual conditions. Considering the existing capacity constraints at LAUS, Metro's ability to accommodate planned increases in regional and intercity rail service and the corresponding increase in passengers through LAUS would be limited and could cause increased crowding within already congested areas of LAUS. This could result in direct or indirect adverse effects because increased crowding could impede the ability of community safety services to maneuver inside of LAUS, and potentially increase response times. There is no mitigation to avoid or minimize these effects with exception of implementing the Build Alternative.

Build Alternative

Direct Effects – Construction

To minimize the potential need for police protection services during construction, Metro's standard specifications require staging areas to be fenced to control access to construction activities, materials, and equipment. In addition, construction security elements, such as lighting or security personnel, would be implemented by the selected contractor, as required by Metro's standard specifications.

CCR Title 8, overseen by California Division of Occupational Safety and Health Administration (Cal/OSHA) which has stricter thresholds for operation and work safety, also regulates workplace and construction work-site safety throughout California. Title 8 requires compliance with standard procedures to prevent construction work-site accidents and requires a written workplace Injury and Illness Prevention Program to be in place (CCR Title 8, Section 1502 et seq.; Pocket Guide for the Construction Industry [Cal/OSHA 2019]). Standard implementation of a construction safety and health plan during construction, in compliance with legal requirements mentioned above, would reduce risk to human health during construction by establishing protocols for safe construction, including daily safety awareness meetings and training to establish a safety culture among the work force.

Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or construction within roadways) could increase emergency response times. As discussed in Section 3.3, Transportation, delays are anticipated at three intersections during construction that would affect traffic along Commercial, Alameda, Vignes Streets, and Cesar

Chavez Avenue. Construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could result in impacts on emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. However, these disruptions are expected to be temporary and intermittent. Additionally, the potential for an effect would occur primarily from construction of the run-through track infrastructure south of US-101 and reconstruction of existing Vignes Street and Cesar Chavez Bridges. 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 which could result in impacts on emergency response and access. However, these potential impacts would be short term. Although construction would require some temporary roadway closures, not all roadway closures would occur at the same time, and other roadways would be available for evacuation and emergency response. Nevertheless, an increased emergency response time during construction is considered an adverse effect if not properly avoided, minimized, and/or mitigated. Implementation of Mitigation Measure TR-1 (described in Section 3.3, Transportation) requires a TMP to be prepared to minimize construction related vehicular traffic delays that could affect emergency response times. The TMP requires that traffic be re-routed to adjacent streets via clearly marked detours and advanced notice be provided to nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events. LAFD, LASD, and LAPD will be notified of the emergency access plans associated with the Build Alternative prior to commencement of construction activities. Upon implementation of Mitigation Measure TR-1 (described in Section 3.3, Transportation), no direct adverse effect with respect to community safety services would occur during construction.

Direct Effects – Operations

LAFD, LASD, and LAPD already service the Project study area. The Project engineering team is coordinating design of the Build Alternative with LAFD to ensure adequate fire/life emergency ingress and egress is provided upon implementation of the Build Alternative. The Build Alternative would accommodate the forecasted increase in passengers through LAUS, the Build Alternative is not anticipated to substantially increase demand for community safety services within LAUS compared to existing conditions, because it is a continuation of the same service in an urbanized area with the growth already forecasted in multiple planning documents. The localized operational, safety, and accessibility upgrades in and around LAUS proposed as part of the Build Alternative would meet existing demand and future growth that is planned for. Currently, existing LAUS facilities are nonconforming with current applicable CBC requirements and NFPA performance requirements for egress and safe evacuation. Operation of the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements.

Implementation of safety and accessibility upgrades associated with the proposed concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress. As such, operation of the Project would not

substantially affect service ratios, response times, or other performance objectives and is anticipated to improve emergency accessibility, thereby, improving the conditions for emergency responders to serve passengers and LAUS patrons.

Concourse-related improvements would be implemented in accordance with NFPA standard engineering design requirements. The elevated throat tracks would include areas to walk along the railroad with safety railings that would extend to the ground for emergency passenger evacuation. Therefore, emergency safety of existing facilities would be enhanced and in compliance to NFPA standards, minimizing potential for adverse effects on first responders and passengers in the event of emergency evacuation.

Internal roadway reconfiguration and associated modifications to fire lanes and access roads would facilitate adequate emergency access during operation, primarily because the West Plaza would be accessible to emergency service providers using the existing fire lane network. Emergency access would be maintained at Patsaouras Transit Plaza, which provides emergency and fire lane access to the eastern side of the station. Roadway 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. Based on the considerations above, a beneficial effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including ADSP, the DCP, and the 2020 RTP/SCS: Connect SoCal. Over time, additional demand on public services (fire, police, and other public facilities) may occur. However, future growth would be subject to development impact fees or an equivalent mechanism to support the needed community facilities. No indirect adverse effect would occur during construction or operation.

TOPIC 3.14-B	Safety conditions

No Action Alternative

Under the No Action Alternative, there would be no construction activities that would result in temporary modifications to the internal passenger circulation network at LAUS or involve temporary traffic delays and disruptions to pedestrian sidewalks and the bicycle network.

As described in Chapter 1.0, Purpose and Need, existing facilities at LAUS do not have adequate operational and passenger capacity to serve future rail transportation needs and are already operating at its maximum capacity. Therefore, as part of the No Action Alternative, capacity constraints would continue to worsen and limit Metro's ability to accommodate for planned

increases in regional and intercity rail service and the corresponding increase in passengers through LAUS. This could result in adverse safety conditions by exacerbating current conditions at LAUS without implementation of track and structural improvements, concourse-related improvements, or street safety upgrades. Under the No Action Alternative, the existing Cesar Chavez and Vignes Street bridges would not be replaced or retrofitted to meet current code. Without proper design improvements, the existing bridges pose a potential safety risk on future rail operations. There is no mitigation to avoid or minimize the effects with exception of implementing the Build Alternative.

Build Alternative

Direct Effects – Construction

Pedestrian/Bicyclist and Passenger Concourse Safety for General Public and Construction Workers

Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. However, this exposure to worksite hazards would be a temporary condition and all applicable codes and regulations would be followed by the contractor in accordance with Metro's standard specifications, including but not limited to: CCR Title 8, Construction Safety Orders; FRA regulations (49 CFR 214, 49 CFR 219, 49 CFR 225, 49 CFR 228, and 29 CFR 236) related to railroad construction worker safety; CPUC General Orders; and OSHA regulations. Measures would also be implemented when construction activities expose underground utilities and/or when excavated trenches have been created and left in an open state during construction hours and nighttime hours to further minimize potential safety hazards.

As previously stated in Topic 3.14-A, standard implementation of a construction safety and health plan during construction, prepared in compliance with legal requirements, would reduce risk to human health during construction by establishing protocols for safe construction, including daily safety awareness meetings and trainings to establish a safety culture among the work force.

Construction of the Build Alternative would result in temporary modifications to the internal passenger circulation network at LAUS, resulting in alternate pathways and drop off areas, temporary detours, and the use of heavy equipment in close proximity to pedestrians and bicyclists using and accessing LAUS. These activities would occur within the Project footprint for the Build Alternative, thereby resulting in potential temporary safety hazards for LAUS patrons, pedestrians, and bicyclists. These temporary occurrences would extend beyond LAUS onto local streets, including Alameda Street, Bolero Lane, Vignes Street, Cesar Chavez Avenue, Commercial Street, and Center Street during construction of various Project components. Additionally, construction of the crossing at US-101 would also involve temporary traffic delays and disruptions to pedestrian sidewalks and the bicycle network. Pedestrian and bicycle access to and from LAUS may 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 an adverse effect.

Implementation of Mitigation Measure TR-1 (as described in Section 3.3, Transportation) would minimize potential for adverse effects on safety. With Mitigation Measure TR-1, specific safety measures (e.g., barriers, detours, safe sidewalks, etc.) would be required to maintain safety for pedestrians, bicyclists, LAUS patrons, and construction workers throughout construction. Pedestrian detours would be outfitted with signage, handrails, fences, canopies, and walkways, as needed, to provide a physical separation between construction activities and LAUS patrons, with adequate wayfinding to maintain safety on affected roadways. When a crosswalk is closed due to construction activities, pedestrians would be directed to nearby alternate crosswalks. Access to these alternate crosswalks would be ADA accessible per existing Metro contracting policy. Additionally, access to public use areas would be maintained, including sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways, and vehicular roadways with appropriate guardrails, barricades, temporary fences, overhead protection, temporary partitions, shields, and adequate signage would be required in the vicinity of construction zones with maximum visibility to these locations with clear access. Therefore, with the implementation of Mitigation Measure TR-1, no direct adverse effect related to public or construction worker safety would occur during construction.

Public Health for Construction Workers and Sensitive Receptors

As described in Section 3.5, Air Quality and Global Climate Change, construction activities would potentially create air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. These air quality effects and emissions would be a temporary direct impact during the construction phase of the Build Alternative that would potentially affect the public health of construction workers and sensitive receptors near the Project study area. Implementation of 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. Implementation of Mitigation Measure AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) requires all on-site construction equipment greater than 50 horsepower 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. Upon implementation of Mitigation Measures AQ-1 and AQ-2, no direct adverse effect with respect to exhaust and fugitive dust emissions generated on site would occur during construction.

Direct Effects – Operations

Safety at LAUS and within the Project footprint was evaluated for accidents/incidents involving both regional/intercity rail trains and HSR trains. Due to the increased train movements facilitated by the Build Alternative, there is potential for train-to-train collisions and other accidents/incidents involving pedestrians, bicyclists, or vehicles, or derailment.

Potential operational and infrastructure safety effects are described by the major Project components for the Build Alternative: track and structural improvements, Vignes Street and Cesar Chavez Bridges, concourse improvements, expanded passageway, and circulation improvements.

Track and Structural Improvements

Proposed track and structural infrastructure would be designed to comply with the requirements of the Rail Safety Improvement Act of 2008, passed by the U.S. Congress and mandated by the FRA (in addition to current FRA and HSR requirements, as applicable). This legislation requires that all passenger-carrying railroads, including Metrolink, Amtrak, and CHSRA, implement PTC systems (HSR trains are also required to implement automatic train control [ATC] systems) while trains are operating to help prevent train-to-train collisions, train derailments, train/switch accidents, and work zone incursion accidents. All PTC and ATC signal improvements would occur within the Project footprint.

Although trains would be operating at low speeds north of LAUS within the Project footprint, derailment during operation poses a potential safety hazard to nearby residences adjacent to the railroad ROW, particularly at William Mead Homes and Care First Village. Similar train operations already occur near these existing residences and would not cause a substantial change from existing conditions with exception of the frequency of train movements at this location. Both William Mead Homes and Care First Village would be separated from the railroad ROW with a retaining wall/sound wall (per requirements of Mitigation Measure NV-1). If train derailment would occur near these residential complexes, the retaining wall and sound wall would reduce the potential for physical impacts on residential facilities. Speed restrictions throughout operation, especially near curves north and south of LAUS, also contribute to safer railroad operations.

Additionally, through the design process, Metro and CHSRA are complying with the FRA System Safety Program Rule (49 CFR 270), which includes processes and procedures to identify and mitigate or eliminate hazards and the resulting risks on the railroad's systems. The track alignment would be designed and constructed to meet applicable FRA requirements for railroad operational safety. Compliance with all applicable design and safety requirements (RSIA, FRA System Safety Program Rule, ATC and PTC systems, standard design practices, and CPUC regulations) and safety plans (Amtrak System Safety Program and the Metrolink Safety and Emergency Preparedness Plan) would minimize the potential for train accidents/incidents and derailment during operations. Therefore, no direct adverse effect related to track and structural improvements would occur during operation.

Vignes Street and Cesar Chavez Avenue Bridges

As discussed in Chapter 2.0, Alternatives and Design Options Considered, the existing Cesar Chavez and Vignes Street bridges were constructed in 1937 and are nearing the end of their design service life. Current Metrolink inspection reports have indicated various locations on the existing bridges where concrete spalling and efflorescence from water leaking is apparent at many of the joints. With continued age, the bridges will continue to deteriorate over time. Additionally,

the bridges do not meet current seismic design standards and would need to be replaced or significantly retrofitted to meet current code. The existing bridges would not be able to support the additional loading requirements for passenger trains or steam locomotives at 20 miles per hour. Without proper design improvements, the existing bridges pose a potential safety risk on future rail operations.

The Build Alternative involves the replacement of the Cesar Chavez and Vignes Street bridges to address current structural deficiencies. Metro follows specific rail design criteria and codes that govern all matters pertaining to the design of Metro-owned facilities, including bridges. The design life objective for new permanent bridges is 100 years. The new bridges will be designed to meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, or steam locomotives[3] at 20 miles per hour. These direct effects related to the Vignes Street and Cesar Chavez Bridges are considered beneficial during operation.

Expanded Passageway and Concourse-Related Improvements

The Build Alternative includes a 140-foot-wide expanded passageway that would be constructed below the LAUS rail yard in conjunction with new plazas for passengers east and west of the elevated rail yard. New VCEs (e.g., stairs, escalators, and elevators) would be installed and Platforms 2 through 7 would be widened to enhance safety, while allowing enough space for the new VCEs, providing sufficient room for passenger movements, and meeting current ADA, CBC, and NFPA evacuation requirements. These improvements would increase passenger capacity, enhance safety and ADA accessibility, allow for more efficient passenger egress movements to and from the various transit modes at LAUS, and accommodate the forecast increases in passengers while meeting CBC requirements.

As part of the concourse-related improvements, additional restroom facilities are also planned. New restroom facilities at LAUS would accommodate the increased passenger demand while also enhancing the public health of LAUS patrons and employees by removing and replacing the one restroom currently in service. These direct effects related to expanded passageway and concourse-related improvements are considered beneficial.

Street Safety Improvements

As discussed in Chapter 2.0, Alternatives and Design Options Considered, north of LAUS in Segment 1 of the Project study area, safety improvements to the existing North Main Street at-grade crossing are proposed as part of the Build Alternative. These improvements would enhance the safety of the crossing for both pedestrians and bicyclists and would support the city's future implementation of a quiet zone at the crossing. No new at-grade crossings are proposed.

[3] Although steam locomotives do not commonly utilize the Vignes Street railroad bridge under existing conditions, they are accommodated in this document because there are specific public events where steam locomotives traverse the tracks to LAUS.

In Segment 2 of the Project study area, as part of the reconstruction of the Vignes Street and Cesar Chavez Bridges, the existing street sections would be maintained at their current widths (70 feet) but would increase the existing bridge span with an additional 25 feet to accommodate for future roadway improvements in accordance with the city's *Mobility Plan 2035* and *Downtown Los Angeles Community Plan*. Improvements on Vignes Street and Cesar Chavez Avenue would also enhance pedestrian and bicycle safety.

In Segment 3 south of LAUS, roadway improvements would be implemented along Center Street and Commercial Street to facilitate implementation of the run-through tracks and active transportation improvements as part of Mitigation Measure LU-1 (bike lanes on Commercial Street). Based on the considerations above, these direct effects related to street safety improvements are considered beneficial.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. New planned uses would put more transit riders, pedestrians, and bicyclists in proximity with transit vehicles and roadways, potentially creating safety conflicts. In some cases, increased density could result in more foot traffic and more casual observance of users on the street. Local municipalities, counties and emergency service providers would plan measures to address safety and security for project-induced development and future actions. All proposed infrastructure would be implemented in accordance with standard engineering practices to avoid and substantially reduce potential for station accidents, boarding and disembarking accidents, collisions, fires, and major structural failures throughout operations. No indirect adverse effect would occur during construction and operation under the Build Alternative.

TOPIC 3.14-C	Security conditions

No Action Alternative

The No Action Alternative is the continuation of existing baseline conditions. Construction would not occur and construction staging areas where a potential increase of crime (tresspassing or vandalism) could take place would not be present. Existing threats and hazards that could occur within the concourse and on the platforms during operations could include active shooters, robbery, theft and other property-related crimes, IED, and chemical/biological threats. Metro's existing safety and security plan would continue to guide safety and security management at LAUS to maintain a safe and secure environment. Existing security conditions at LAUS would remain unchanged, and operation of LAUS would continue business-as-usual conditions. Under the No Action Alternative, no new design elements to maximize security would be implemented such as baggage screening, explosive detection systems at facility entrances, video surveillance cameras, physical barriers (i.e., perimeter fencing, perimeter walls, or building walls), and updated design of HVAC systems to prevent or limit the spread of chemical or biological threats.

No direct or indirect adverse effect on security conditions would occur.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative is not expected to increase crime at LAUS or throughout the Project study area. After work hours, when construction equipment is idle and no personnel are on site, there is potential for trespassing and vandalism in the construction area, especially in staging areas; however, pursuant to Metro's standard specifications, the construction contractor would be responsible for providing no trespassing signage and on-site security during construction hours and after, as necessary. Furthermore, existing security measures are already being implemented within and around LAUS and would continue throughout the duration of construction. No direct adverse effect would occur during construction.

Direct Effects – Operations

Both human-caused and natural threats present a security risk and were considered as part of the evaluation for the Build Alternative. Threats and hazards that could occur within the concourse and on the platforms could include the following:

- Active shooter;
- Robbery, and other person-on-person crimes;
- Theft and other property-related crimes;
- IED; and
- Chemical/biological threats.

It is important to note that these risks exist today and would continue throughout operations.

Based on the findings of the *Link US Threat and Vulnerability Assessment*, depending on the final programming of the concourse-related improvements, sight lines could be blocked and numerous places for the secreting of IEDs or criminal elements would exist. Access roads from the west leading to the platforms and LAUS buildings, as well as the location of the proposed concourse loading docks, may be uncontrolled, allowing unvetted access. Concerns associated with the airflow patterns and dynamics in buildings, specifically in the building heating, ventilating, and air conditioning (HVAC) systems, also exist. These systems can become an entry point and a distribution system for biological and chemical hazardous contaminants. Metro's existing safety and security plan addresses these potential threats and would be updated in response to the final design parameters for the expanded passageway and associated concourse improvements.

As part of the *Link US Threat and Vulnerability Assessment*, provisions were established for the deterrence and detection of, and protocols for the response to, criminal or terrorist acts involving facilities and operations. Based on the assessment performed, specific measures are being incorporated into the design, such as ROW fencing, intrusion detection, security lighting, and

security procedures and training. Additional security measures under consideration include baggage screening, explosive detection systems at facility entrances, video surveillance cameras, physical barriers (i.e., perimeter fencing, perimeter walls, or building walls), and the design of HVAC systems to prevent or limit the spread of chemical or biological threats. With the incorporation of design elements that maximize security in conjunction with the amending of Metro's existing safety and security plan to accommodate the proposed concourse-related improvements, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Concourse-related improvements would be constructed in accordance with current building code requirements, and the design of proposed infrastructure may lead to a more secure facility for all users. No indirect adverse effects related to security would occur during construction or operation.

3.14.6 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects related to safety and security.

TR-1 **Prepare a Construction Traffic Management Plan.** See Section 3.3, Transportation, for details.

AQ-1 **Fugitive Dust Control.** See section 3.5, Air Quality and Global Climate Change, for details.

AQ-2 **Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment.** See section 3.5, Air Quality and Global Climate Change, for details.

NV-1 **Construct Sound Walls.** See section 3.6, Noise and Vibration, for details.

3.14.7 NEPA Impact Summary

This section summarizes the effects related to safety and security for the No Action Alternative and compares them to the anticipated effects of the Build Alternative.

No Action Alternative

As discussed under Topic 3.14-A, the No Action Alternative would not result in safety enhancements to LAUS or improvements to LAUS to meet current ADA, NFPA, and building code requirements. Increased crowding could impede the ability of community safety services to maneuver inside of LAUS and potentially increase response times. There is no mitigation to avoid or minimize the effects, with exception of implementing the Build Alternative.

As discussed under Topic 3.14-B, capacity constraints would continue to worsen and limit Metro's ability to accommodate an increase in passengers through LAUS. This could result in adverse safety conditions by exacerbating current conditions at LAUS. Without proper design

improvements, the existing Cesar Chavez and Vignes Street bridges pose a potential safety risk on future rail operations. There is no mitigation to avoid or minimize the effects, with exception of implementing the Build Alternative

As discussed under Topic 3.14-C, Metro's existing safety and security plan would continue to guide safety and security management at LAUS. No new design elements to maximize security would be implemented. No effect on security conditions would occur.

Build Alternative

As discussed under Topic 3.14-A, increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or construction within roadways) could increase emergency response times. Mitigation Measure TR-1 requires alternative routes to be implemented that would maintain access and connectivity, road closures and detour routes to be coordinated with LADOT and Caltrans, and for construction traffic routes to avoid heavily congested areas. Implementation of Mitigation Measure TR-1 would minimize potential for adverse effects on community safety services by requiring a TMP. During operations, the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress. A beneficial effect would occur.

As discussed under Topic 3.14-B, construction-related activities and temporary modifications to the internal passenger circulation network would create potential safety hazard risks for the public, LAUS patrons and personnel, and construction workers. These safety hazard risks could include falling objects, slips and falls, and collisions with construction equipment. All applicable codes and regulations would be followed by the contractor in accordance with Metro's standard specifications, CCR Title 8, Construction Safety Orders, FRA regulations, CPUC General Orders, and OSHA regulations to minimize safety hazards and reduce risk to human health during construction. Pedestrian and bicycle access to and from LAUS may 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). Implementation of Mitigation Measure TR-1 would minimize potential for adverse effects by requiring measures such as barriers, detours, and safe sidewalks. Construction workers and sensitive receptors near the Project study area would be impacted by construction-related emissions and fugitive dust emissions. However, with implementation of fugitive dust control measures (Mitigation Measure AQ-1) and emission standard requirements (Mitigation Measure AQ-2), no adverse effects would occur.

During operations, public health and safety was considered for the following:

- **Track and Structural Improvements** – train frequencies would increase, and there would be potential for train collisions, train derailments, train/switch accidents, and work zone incursion accidents. However, PTC and ATC systems would be implemented to help

prevent these instances from occurring. If train derailment would occur near residential complexes north of LAUS, the retaining walls and sound walls (required as part of Mitigation Measure NV-1) would reduce the potential for physical impacts on residential facilities. No adverse effect would occur.

- **Vignes Street and Cesar Chavez Avenue Bridges** – replacement of the Vignes Street and Cesar Chavez Avenue bridges would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. A beneficial effect would occur.
- **Expanded Passageway and Concourse-Related Improvements** – proposed concourse-related improvements would increase passenger capacity, enhance safety and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. New restroom facilities at LAUS would accommodate the increased passenger demand while also enhancing the public health of LAUS patrons and employees. A beneficial effect would occur.
- **Street Safety Improvements** – Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements on Vignes Street and Cesar Chavez Avenue would also enhance pedestrian and bicycle safety. Roadway improvements along Center Street and Commercial Street would facilitate implementation of the run-through tracks and active transportation improvements as part of Mitigation Measure LU-1. A beneficial effect would occur.

As discussed under Topic 3.14-C, there is potential for trespassing and vandalism in the construction area, especially in staging areas; however, pursuant to Metro's standard specifications, the construction contractor would be responsible for providing no trespassing signage and on-site security during construction hours and after, as necessary. Existing security measures would continue throughout the duration of construction. During operations, specific measures are being incorporated into the design to address security conditions. These include ROW fencing, intrusion detection, security lighting, and security procedures and training. With the incorporation of design elements that maximize security in conjunction with the amending of Metro's existing safety and security plan to accommodate the proposed concourse-related improvements, no adverse effects related to security conditions would occur.

Table 3.14-6 provides an impact summary for the Build Alternative.

Table 3.14-6. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.14-A: Community safety services	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)**	*Construction* No Adverse Effect
	Operations Beneficial Effect	*Operations* No mitigation is required	*Operations* Beneficial Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan (TMP)** **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**	*Construction* No Adverse Effect
	Operations Beneficial Effect	*Operations* No mitigation is required	*Operations* Beneficial Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.14-C: Security conditions	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect

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3.15 Socioeconomics and Communities Affected

3.15.1 Introduction

This section provides an evaluation of the potential effects related to existing socioeconomic conditions and established communities that may result upon implementation of the No Action Alternative and the Build Alternative. Information contained in this section is summarized from the *Link US Community Impact Assessment* (Appendix D of this EIS), *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS), the *Link US Relocation Impact Report* (Appendix P of this EIS), and the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS), in combination with published sources.

Other land use, planning, community, and economic issues are described and analyzed in other sections of this EIS, as follows:

- Section 3.2, Land Use and Planning, addresses effects relative to established communities, land use compatibility, and consistency with applicable planning documents;
- Section 3.3, Transportation, addresses potential effects on connectivity and vehicular traffic;
- Section 3.13, Economic and Fiscal Impacts, addresses potential effects relative to employment, income, and tax revenue; and
- Chapter 4.0, Community Analysis, addresses potential effects relative to minority communities, low-income communities, and non-minority communities.

3.15.2 Regulatory Framework

Table 3.15-1 identifies and summarizes applicable laws, regulations, and plans relevant to socioeconomics and community issues.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec.*	The FRA's Environmental Procedures require the Draft and Final EIS assess the number and kinds of available jobs, the potential for community disruption, the possibility of demographic shifts, the need for and availability of relocation housing, effects on commerce, including effects on existing businesses, metropolitan areas, and effects on local government services and revenues.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
14(n)(16), 64 *Federal Register* 28545-28556 (May 26, 1999)[1]	
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) (42 United States Code 4601 et seq.)	The Uniform Act provides uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by federal and federally assisted programs and establishes uniform and equitable land acquisition policies. The Uniform Act requires the owning agency to notify affected owners of the agency's intent to acquire an interest in their property, including a written offer letter of just compensation that specifically describes those property interests and assigns a ROW specialist to each property owner to assist them with this process. The Uniform Act also provides financial and advisory benefits to displaced individuals to help them relocate their residence or business. Benefits are available to owners and tenants of residential and business properties. In compliance with the Uniform Act, property owners and tenants would receive relocation assistance and would be compensated. If required, housing of last resort would be used, which may involve payments for replacement housing costs that exceed the maximum amounts allowed under the Uniform Act or other methods of providing comparable decent, safe, and sanitary housing within the financial means of the displaced persons.
Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks (1997)	A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each federal agency: *(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards*

[1] While this EIS was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's environmental procedures rather than the Part 771 regulations.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
	address disproportionate risks to children that result from environmental health risks or safety risks.
Executive Order 13166: Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000)	EO 13166 requires federal agencies to examine the services they provide, identify any need for services to those with LEP, and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The EO also requires that the federal agencies work to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. To assist federal agencies in carrying out these responsibilities, the U.S. Department of Justice has issued a Policy Guidance Document, "Enforcement of Title VI of the Civil Rights Act of 1964 - National Origin Discrimination Against Persons With Limited English Proficiency" (LEP Guidance). This LEP Guidance sets forth the compliance standards that recipients of federal financial assistance must follow to ensure that their programs and activities normally provided in English are accessible to LEP persons and thus do not discriminate on the basis of national origin in violation of Title VI's prohibition against national origin discrimination.
Title VI of the Civil Rights Act of 1964 (42 United States Code 2000d et seq.)	All relocation services and benefits would be administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (Title 42 USC Section 2000d, et seq.). Benefits for eligible owners and tenants are determined on an individual basis and explained in detail by an assigned ROW specialist.
Americans with Disabilities Act of 1990 (42 United States Code § 12101)	ADA prohibits discrimination based on disability.
State	
California Department of Transportation Standard Environmental Reference, Environmental Handbook Volume 4: Community Impact Assessment (2011)	The Caltrans SER Environmental Handbook provides guidance for design of transportation projects to consider impacts on communities and neighborhoods.
California Relocation Assistance Act (January 1, 1998)	The California Relocation Assistance Act includes requirements for just compensation for real property. Owners of private property have federal and state constitutional guarantees that their property will not be taken for public use or damaged unless they first receive just compensation. Just compensation is measured by the fair market value of the acquired property. According to the Code of Civil Procedure Section 1263.320a, "fair market value is considered to be the highest price on the date of valuation that would be agreed to

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
	by a seller, being willing to sell, but under no particular or urgent necessity for so doing, nor obliged to sell; and a buyer, being ready, willing and able to buy but under no particular necessity for so doing, each dealing with the other with the full knowledge of all the uses and purposes for which the property is reasonably adaptable and available."
Sustainable Communities and Climate Protection Act, Senate Bill 375 (2008)	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.
Local	
Southern California Association of Governments 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy	The SCAG 2016-2040 RTP/SCS identifies and analyzes transportation needs for the region and creates a framework for project priorities. The project is listed in the SCAG 2016-2040 RTP/SCS as FTIP #LA0G1051.

Notes:
ADA=Americans with Disabilities Act; Caltrans=California Department of Transportation; EIS=Environmental Impact Statement; EO=Executive Order; FTIP=Federal Transportation Improvement Program; FRA=Federal Railroad Administration; LEP=Limited English Proficiency; MPO=metropolitan planning organizations; ROW=right-of-way; RTP=regional transportation plan; SCAG=Southern California Association of Governments; SB=Senate Bill; SCS=Sustainable Communities Strategy; SER=Standard Environmental Reference; USC=United States Code

3.15.3 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the No Action Alternative and the Build Alternative would affect:

- Community facilities;
- Government services;
- Population growth;
- Business displacements and the economy; and/or,
- Community character and cohesion.

Geographic Area Considered

The four geographic boundaries depicted on Figure 3.15-1 include the Project footprint, the Project study area, the socioeconomic planning area, and the community analysis study area.

While the Project study area is used as a general point of geographic reference, the socioeconomic planning area comprised of the outer limits of the six census tracts traversed by the boundary of the Project study area is used to characterize the affected environment and to identify regional and local demographic characteristics. The Project footprint and Project study area are generally used to identify direct impacts during construction and operations, respectively, and the socioeconomic planning area for community impacts extends beyond the Project study area to include those communities that would be directly and indirectly affected by the Build Alternative. Communities on the east side of the Los Angeles River were not included in the socioeconomic planning area because the Los Angeles River provides a natural boundary, and there are few local roads or crossings within the Project study area. Communities outside of the boundaries of the socioeconomic planning area are not included in the socioeconomic planning area because of their proximity to the Project footprint, limited direct access to the Project study area, or because they were outside of the resource-specific identified areas of impact.

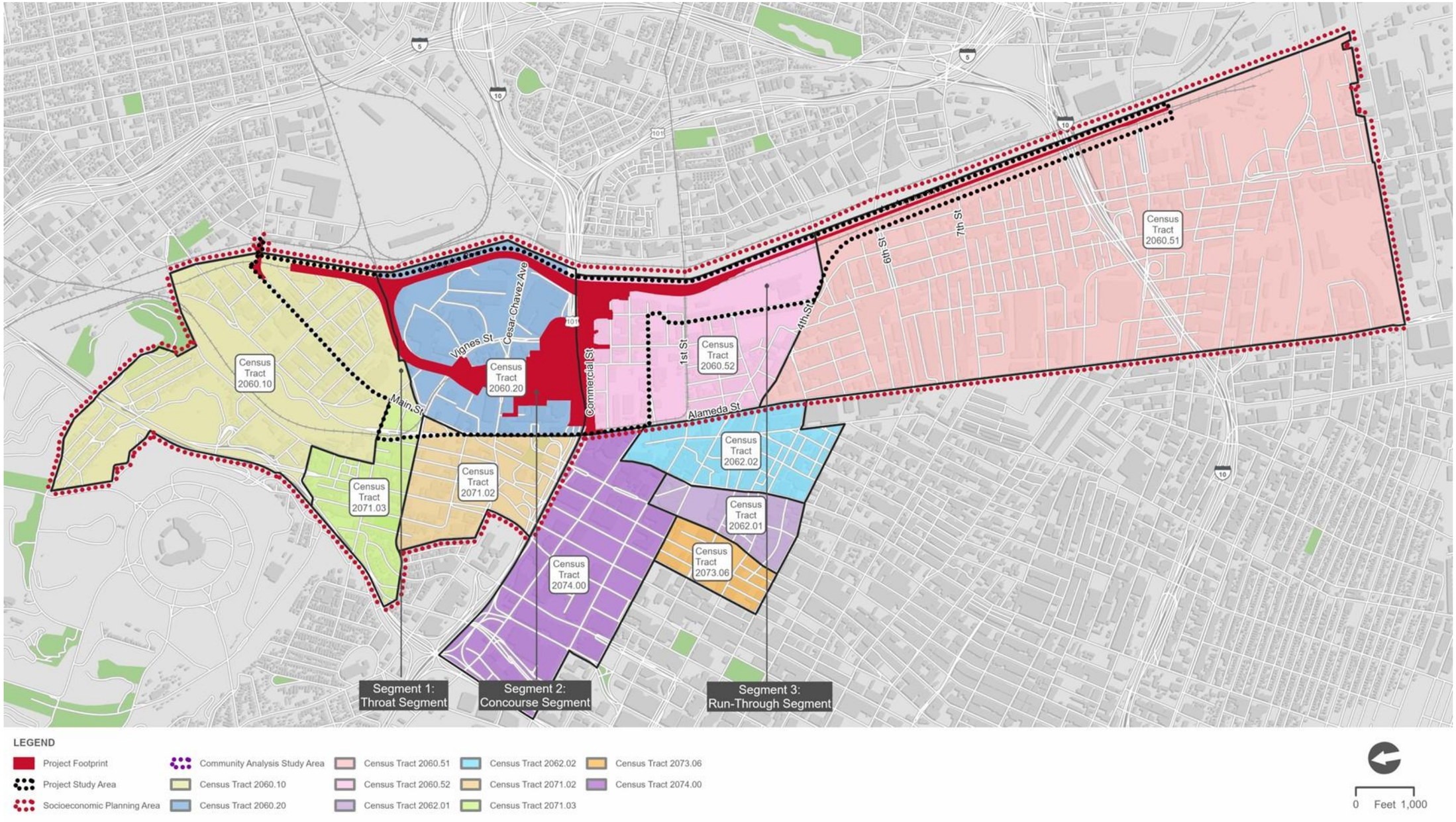
The American Community Survey (ACS) 5-Year 2021 data was reviewed at the census tract level to characterize the affected environment within the socioeconomic planning area for the six census tracts listed below and depicted on Figure 3.15-1:

- Census Tract 2060.10;
- Census Tract 2060.20;
- Census Tract 2060.51;
- Census Tract 2060.52;
- Census Tract 2071.02; and,
- Census Tract 2071.03.

The community analysis study area includes the boundary of the socioeconomic planning area and the outermost limits of the four census tracts traversed by the boundary of the Little Tokyo District. While the majority of the Little Tokyo District is located outside of the socioeconomic planning area, potential impacts to minority communities, low-income communities, or non-minority communities was evaluated in Chapter 4.0, Community Analysis.

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Figure 3.15-1. Geographic Areas of Analysis



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Methodology

Terminology

The following terms are used in this section:

- **Minority persons**: Minority persons are defined as all individuals who identify as Black or African American; Hispanic or Latino, regardless of race; Asian; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander; some other race alone; or two or more races (U.S. Census Bureau 2021a).
- **Low-income household**: Households with income below 150 percent of the U.S. Census poverty threshold, in accordance with FTA Circular 4703.1 (August 15, 2012)
- **Community cohesion**: Community cohesion is the degree to which residents each have a sense of belonging to their neighborhood; a high level of commitment to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time (Caltrans 2011).
- **Economic effects:** The analysis of economic effects includes an evaluation of potential relocations and displacements, estimated job loss/employment opportunities, and property/sales tax implications. As discussed in Section 3.13, Economic and Fiscal Impacts, of this EIS, economic effects were estimated using the IMPLAN® input-output model, which estimates three types of effects that differ from other community effects:
    - **Direct economic effect –** This refers to the economic activity occurring as a result of direct spending by businesses or agencies (e.g., direct spending on construction and professional services).
    - **Indirect economic effect –** This refers to the economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractor responsible for individual components).
    - **Induced economic effect –** This represents the increase in economic activity, over and above the direct and indirect effects, associated with the increased labor income that accrues to workers (of the contractor and all suppliers) and is spent on household goods and services purchased from businesses.
- **Acquisitions**: A full acquisition of a property is defined as an area in which occupants of residential and nonresidential units would be displaced and expected to permanently relocate. A partial acquisition is when a small area of property is acquired, but full use of the property and dwelling structures, including multifamily units, would remain. Generally, partial acquisitions consist of portions of a back, side, or front yard; landscaping; or parking.
- **Growth-related effects:** The analysis of growth-related, indirect effects was prepared based on the *Guidance for Preparers of Growth-Related, Indirect Impact Analyses*

(Caltrans 2006), developed with representatives from Caltrans, FHWA, and U.S. EPA. The analysis of growth-related effects draws extensively from the General Plan and specific plans of the City of Los Angeles.

Data Sources

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS), input from the community combined with the following data sources were used to identify existing conditions:

- Census data
- Aerial maps and road maps
- GIS data
- Fieldwork documentation and windshield surveys
- Agency documentation
- Other technical studies prepared for the Project:
  - Appendix E of this EIS, *Link US Traffic Impact Assessment*
  - Appendix F of this EIS, *Link US Visual Impact Assessment*
  - Appendix G of this EIS, *Link US Air Quality and Climate Change Assessment*
  - Appendix H of this EIS, *Link US Noise and Vibration Study*
  - Appendix M of this EIS, *Link US Finding of Effect Report*
  - Appendix O of this EIS, *Link US Economic and Fiscal Impact Assessment*
  - Appendix P of this EIS, *Link US Relocation Impact Report*

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity (as outlined in 40 CFR 1508.27), the methodology to determine effects is presented below.

Community Facilities and Government Services

Key community facilities and public services, such as parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship, were identified using publicly available data (Figure 3.15-2). Project-related effects would be considered adverse if the Build Alternative temporarily or permanently impedes access or use of community facilities and government services; introduces noise or glare that reduces the public's ability to use the public facility; results in traffic or circulation restrictions that degrades emergency response times on a temporary or permanent basis; or if the proposed infrastructure would cause physical impacts requiring new or altered government and public facilities.

Population Growth

The analysis of growth-related, indirect impacts on land use, economic vitality, and population was prepared following the first-cut screening guidelines provided in the *Guidance for Preparers of Growth-Related, Indirect Impact Analyses* (Caltrans 2006) and in accordance with CEQ regulations (40 CFR 1508.8)[2]. The analysis of growth-related impacts was developed by applying the following steps from the guidance document:

- Identifying the potential for growth resulting from the Build Alternative to determine if the Project change will affect the location, rate, type, or amount of growth.
- Assessing the growth-related effects of the Build Alternative on resources of concern to determine if these resources would be affected.
- Considering additional opportunities to avoid and minimize growth-related impacts.
- Comparing the results of the analysis for the No Action Alternative and the Build Alternative.
- Documenting the process and findings of the analysis.

Residential and Business Displacements and the Economy

As discussed in the *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS) and in Section 3.13, Economic and Fiscal Impacts, the analysis of economic effects includes an evaluation of potential relocations and displacements, estimated job loss/employment opportunities, and property/sales tax implications. Economic effects can either be beneficial or adverse. Economic effects may be beneficial due to an increase in economic activity from direct spending on construction, addition of jobs, and generation of federal, state, and local tax revenues. Adverse economic effects would only occur if businesses on acquired parcels are not able to be relocated resulting in loss of property tax revenues and employment.

Community Character and Cohesion

Community cohesion is the degree to which residents have a sense of belonging and a level of commitment to their neighborhood or a strong attachment to neighbors, groups, and institutions, usually because of continued association over time. Cohesion refers to the degree of interaction among the individuals, groups, and institutions that make up a community. Indicators of higher community cohesion include the following:

- Long average residency tenures;

[2] The Council on Environmental Quality (CEQ) has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the California High-Speed Rail Authority (CHSRA) is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

- Households of two or more people;
- Other social factors, such as higher proportions of homeownership versus rentals and single-family homes versus higher-density housing;
- Shared interests (ethnic homogeneity, religious homogeneity, income strata);
- Substantial community activity;
- Stay-at-home parents;
- Higher proportions of seniors;
- Pedestrian and handicap facilities; or
- Community facilities.

Evaluation of cohesion in communities and neighborhoods includes an examination of potential disruption or division of existing communities, and the creation of physical, social, or perceived barriers within an established community or neighborhood that would affect interaction among people and groups or cause a change in community identity.

A two-step process was used to determine if community character or cohesion would be affected. The first step was to determine the level of existing community cohesion within the socioeconomic planning area. This was accomplished by reviewing census data for the various factors above, where such information was available.

Once the level of community cohesion was identified from these data points, the analysis identified if the proposed infrastructure would result in changes to the existing community cohesion level. Potential adverse effects on community cohesion would occur if the Build Alternative:

- Creates a barrier or physically divide a community in a way that would limit circulation, social interaction, and access to businesses and community facilities;
- Causes displacements that would change the quality of life and/or viability of shopping areas enjoyed by residents;
- Causes a change in population that affects the social or cultural character of the community; or
- Affects quality of life through increased traffic, noise and vibration, or induced population growth affecting public services to the extent that it would change community character.

Indirect Effects

These effects are anticipated to occur later in time or are farther removed in distance from the Project footprint but are reasonably foreseeable. Indirect effects may include induced growth and changes in land use patterns and development, which could result in additional effects on environmental resources. For purposes of this analysis, indirect effects from potential changes in

community cohesion, changes in behavioral and perceptual aspects of the community and organizational participation levels, and/or use of community facilities are considered.

3.15.4 Affected Environment

This section describes existing conditions with regard to community characteristics, economic and employment characteristics, and land uses where property acquisitions may occur. The affected environment also describes population characteristics, including population demographics, age, income, household characteristics, linguistic isolation, and disabilities; housing; minority communities, low-income communities, and non-minority communities; local economy; community facilities and public services; and non-motorized circulation.

Community Facilities

Community facilities are an important aspect of neighborhood identity. Schools, hospitals, and other community facilities can be critical resources for the community. Transportation projects can result in adverse and beneficial effects on community services, impacting the character and cohesion of a community, either temporarily or permanently. Community facilities typically include parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship. Community facilities within the socioeconomic planning area are depicted on Figure 3.15-2. For the complete list of facilities see the *Link US Community Impact Assessment* (Appendix D of this EIS). Additional information on community facilities is also provided in the following sections.

Parks and Recreational Centers

The City of Los Angeles parks system includes more than 16,000 acres of parkland, offering recreational, social, and cultural programs at 444 park sites in City of Los Angeles neighborhoods. There are several parks within the socioeconomic planning area, but there are no parks in the Project study area, as depicted on Figure 3.15-2. William Mead Homes includes several communal recreational facilities on site, including a handball/racquetball facility and a baseball field, and Care First Village includes a playground and dog park; however, the facilities are closed to the general public and are only accessible to William Mead Homes and Care First Village residents, respectively. As part of the *Los Angeles River Revitalization Master Plan* and Los Angeles River Path Project, a river trail is planned along the western bank of the Los Angeles River.

Schools and Daycare Centers

As depicted on Figure 3.15-2, there are 11 schools and daycare centers located within the socioeconomic planning area. This includes three elementary schools, two high schools, a school of visual and performing arts, an after-school facility, a secondary education institute, and a child development center. There are also two daycare centers in the socioeconomic planning area, which both offer infant care through preschool programs. The H. Pregerson Child Care Center is located just outside the socioeconomic planning area within the Edward Roybal Federal Building

(255 E Temple Street, Los Angeles, CA 90012). The closest facilities to proposed infrastructure include Ann Street Elementary School (126 Bloom Street, Los Angeles, California 90012) adjacent to William Mead Homes in the northern portion of the Project study area and two daycare centers: the Metro Gateway Child Development Center (One Gateway Plaza, Los Angeles, California 90012) and First 5 LA Headquarters (La Petite Academy) (750 Alameda Street, Los Angeles, California 90012), which are both located on the LAUS campus and offer infant care through preschool programs.

Medical and Healthcare Facilities

As depicted on Figure 3.15-2, the City of Los Angeles's Medical Services office is located in the socioeconomic planning area and provides correctional care (medical clinics operating within city jails), occupational health, and psychological services. Occupational health and psychological services are also available to city employees and departments at the medical services office. There are no hospitals, clinics, or other medical facilities (e.g., other counseling facilities, senior care homes or rehabilitation centers, or drug and alcohol rehabilitation centers) within the socioeconomic planning area. White Memorial Medical Center (1720 Cesar Chavez Avenue, Los Angeles, California 90033), Pacific Alliance Medical Center (531 College Street, Los Angeles, California 90012), and Downtown LA Veteran Affairs Clinic (351 East Temple Street, Los Angeles, California, 90012) are located 0.6 mile, 0.2 mile, and 0.1 mile from the Project study area, respectively. These medical centers offer medical services and community programs that serve the socioeconomic planning area.

Places of Worship

There are several places of worship located within the socioeconomic planning area, as shown on Figure 3.15-2. Each of the places of worship serve the local community and surrounding multicultural populations, offering religious services, counseling, and community events.

Government Services

Government facilities located within the socioeconomic planning area include the Chinatown Branch Library (adjacent to the Ord and Yale Street Park), the Metro and SCRRA offices, and Los Angeles County Service Authority for Freeway Emergencies, located at One Gateway Plaza. The Los Angeles County Public Defender and Pretrial Services Division, which is part of the Los Angeles County Probation Department, the Twin Towers Correctional Facility, and other City of Los Angeles facilities are also located within the socioeconomic planning area. A federal complex that includes the Edward R. Roybal Federal Building and U.S. Bureau of Prisons Metropolitan Detention Center are located on Alameda Street between Commercial Street and Temple Street, adjacent to the socioeconomic planning area. Police and fire protection services are described below.

Police Protection

Police protection services in the socioeconomic planning area are provided by the LAPD. There are no Los Angeles Police Department stations in the Project study area. The nearest police

station is the Central Community Police Station (251 6th Street, Los Angeles, California 90014), approximately 0.5 mile west of the Project study area. As depicted on Figure 3.15-2, an LASD office is located in the Project study area east of LAUS. LASD provides general law enforcement services to Metro, 40 contract cities, 90 unincorporated communities, 216 facilities/hospitals/clinics throughout the County of Los Angeles, 9 community colleges, and 47 Superior Courts of California in the County of Los Angeles (LASD 2010).

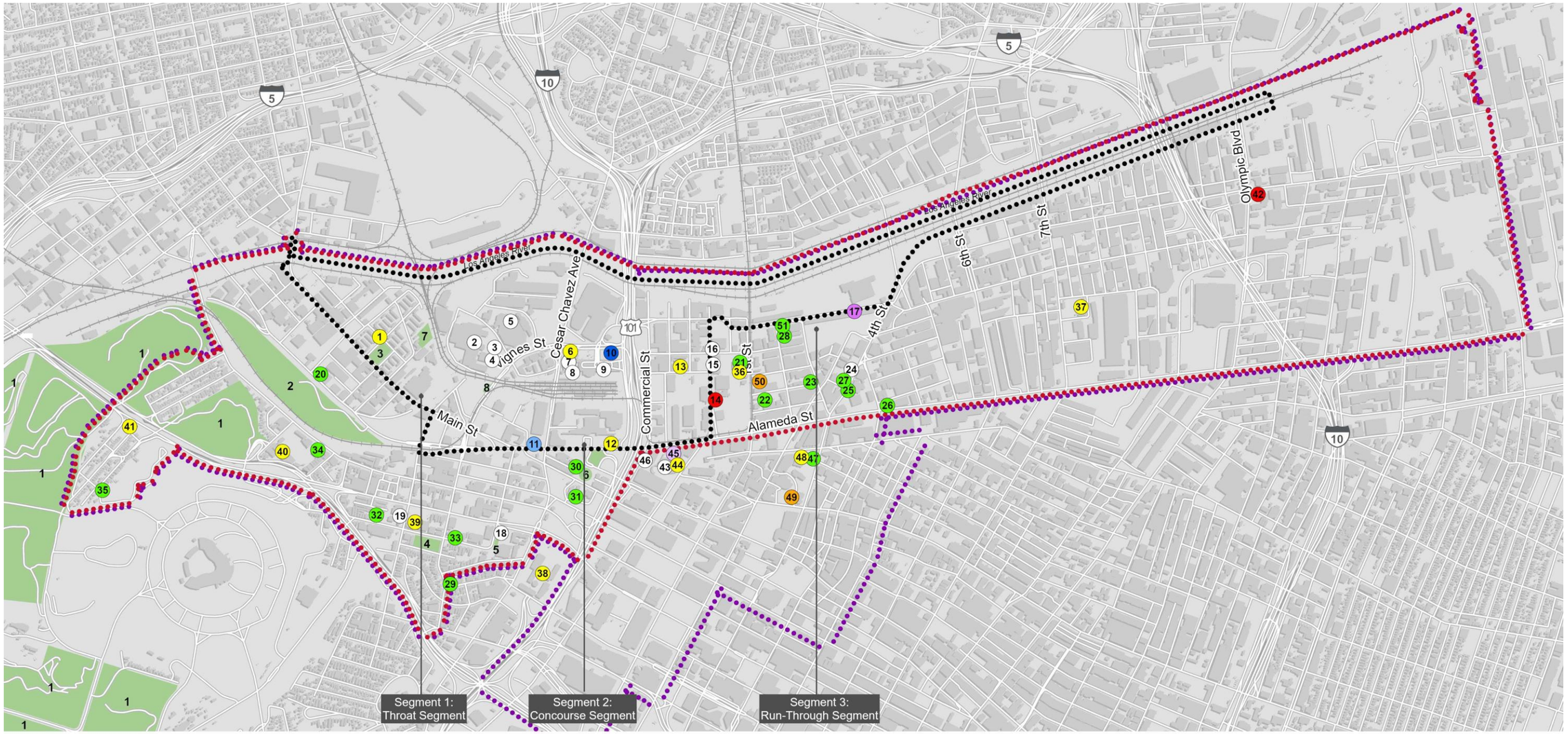
Fire Protection

Fire protection services in the socioeconomic planning area are provided by the LAFD. As depicted on Figure 3.15-2, there are two fire stations, LAFD Fire Station 4 (450 Temple Street) and LAFD Station 17 (1601 S. Santa Fe Avenue) located in the socioeconomic planning area.

From January to April 2023, the average LAFD response times were 1 minute, 7 seconds for average call processing; 54 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); 5 minutes, 9 seconds for average travel time for incidents involving emergency medical services; and 5 minutes, 7 seconds average travel time for nonemergency medical services incidents (LAFD 2023). The NFPA has established national performance standards for response times, which is 1 minute, 20 seconds for turn out and 4 minutes for travel time (NFPA 2009)

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Figure 3.15-2. Los Angeles Union Station Community Facilities and Public Services



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Population Characteristics

A community's characteristics can be described by demographic information, including population size, age composition, ethnicity, and household characteristics. This section describes the existing community characteristics, including population, demographic, and housing characteristics.

Population, Households and Employment

Regional and local population changes for key geographic areas from 2010 to 2021 are summarized in Table 3.15-2.

Table 3.15-2. Existing Regional and Local Population Change

Geographic Area	2010	2021	Percent Change (%) (2010 to 2021)
County of Los Angeles	9,818,605	10,019,635	2.0
City of Los Angeles	3,792,621	3,902,440	2.9
Socioeconomic planning area	18,639	23,898	28.2

Source: U.S. Census Bureau 2021b; California Department of Finance 2020

As summarized in Table 3.15-2, the County and City of Los Angeles experienced population growth between 2010 and 2021. The net population change from 2010 to 2021 is 2.0 percent and 2.9 percent for the County of Los Angeles and the City of Los Angeles, respectively. The socioeconomic planning area experienced population growth of 28.2 percent between 2010 and 2021.

The socioeconomic planning area is located in the northeastern corner of Downtown Los Angeles (Districts 1 and 14). The SCAG growth forecasts from 2021 to 2040 are summarized in Table 3.15-3 for the County and City of Los Angeles. Forecasts are not detailed at the census tract level; however, projections have been made for the greater Downtown Los Angeles area. Downtown Los Angeles is projected to add 176,000 residents, 99,000 housing units, and 86,000 jobs in 2040 (Los Angeles Department of City Planning 2022b).

Table 3.15-3. Projected Population, Household, and Employment Growth

Geographic Area[a]	2021	2040	Percent Change (2021 to 2040) (%)
Population			
County of Los Angeles	10,019,635	11,513,435	+15

Table 3.15-3. Projected Population, Household, and Employment Growth

Geographic Area[a]	2021	2040	Percent Change (2021 to 2040) (%)
City of Los Angeles	3,902,440	4,609,400	+18
Households			
County of Los Angeles	3,342,811	3,946,000	+18
City of Los Angeles	1,384,851	1,690,300	+22
Employment			
County of Los Angeles	4,885,032	5,225,707	+7
City of Los Angeles	1,968,851	2,169,100	+10

Source: SCAG 2019, SCAG 2020

Notes:
[a] ***Projections for census tracts that make up the socioeconomic planning area were not available from the SCAG projection data.***

As summarized in Table 3.15-3, long-term population growth from 2021 to 2040 is expected to increase at the city and county levels by 15 and 18 percent, respectively. As noted in SCAG's 2020 RTP/SCS, increasing demand for multifamily housing reflects an overall preference of younger populations (ages 20 to 35) to live in dense, mixed-use urban areas well served by transit. Given this trend in housing preferences and on-going private investments in the socioeconomic planning area to convert industrial uses to mixed-use residential and the growth rate shown in Table 3.15-2, population growth rates in the six census tracts are anticipated to experience a similar level of growth as the City of Los Angeles.

Race and Ethnicity

Table 3.15-4 presents the total minority population for the County and City of Los Angeles and the socioeconomic planning area.

The racial and ethnic characteristics of the County and City of Los Angeles are similar and reflect a diverse population. The predominant racial/ethnic group within the County and City of Los Angeles is Hispanic of any race. The next largest group is White alone, as reported by 25.5 and 28.1 percent of the population, respectively. The remaining population categories, in descending order of proportion, were Asian, Black or African American, two or more races, Native Hawaiian/Pacific Islander, other race, and American Indian/Alaskan Native.

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS), the socioeconomic planning area is more ethnically diverse than the County and City of Los Angeles. The predominant racial/ethnic group within the socioeconomic planning area is Asian. Other

racial/ethnic groups in the socioeconomic planning area in descending order of proportion are Hispanic of any races, White alone, Black or African American, two or more races, American Indian or Alaskan Native, other race alone, and Native Hawaiian/Pacific Islander. Compared with the County and City of Los Angeles, the socioeconomic planning area has smaller populations of individuals who are White alone and Hispanic of any race but larger Asian and Black or African American populations.

Table 3.15-4. Existing Regional and Local Minority Populations

Geographic Area	Total Minority Population (%)
County of Los Angeles	74.5
City of Los Angeles	71.9
Socioeconomic planning area	82.6

Source: Link US Community Impact Assessment (Appendix D of this EIS)

Notes:
LAUS=Los Angeles Union Station

Income and Poverty

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS) and summarized in Table 3.15-5, the median household income for the socioeconomic planning area is $74,608, which is higher than the 2021 U.S. Census Bureau poverty threshold of $27,750 for a family of four. It is also higher than the City of Los Angeles's median household income of $69,778 but lower than the County of Los Angeles' median household income of $76,367. There are 12 low-income housing complexes within the socioeconomic planning area, most notably including William Mead Homes in Segment 1 of the Project study area. The Care First Village transitional housing facility is also located in Segment 1 of the Project study area. Approximately 25 percent of households in the socioeconomic planning area have income below the 2021 poverty level threshold identified by the U.S. Census Bureau.

Table 3.15-5. Existing Regional and Local Income Characteristics

Geographic Area	Median Household Income (US$)	Percent of Households Below Poverty Level (%)
County of Los Angeles	76,367	13.9
City of Los Angeles	69,778	16.6
Socioeconomic planning area	74,608	25

Source: U.S. Census Bureau 2021a

Age Distribution

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS) and summarized in Table 3.15-6, the median age for the County and City of Los Angeles are 37.0 and 36.2 years, respectively. In the socioeconomic planning area, the median age within the six census tracts is 38.3 years. The socioeconomic planning area has a lower percentage of residents under 18 or over 65 years old when compared with the County and City of Los Angeles.

Table 3.15-6. Age Distribution Characteristics

Geographic Area	Median Age	Under 18 (%)	65 and Over (%)
County of Los Angeles	37	21.6	13.7
City of Los Angeles	36.2	20.3	12.9
Socioeconomic planning area	38.3	8.2	11.5

Source: U.S. Census Bureau 2021b

Special Populations

A summary of information related to special populations, which include disabled, institutionalized, and linguistically isolated populations (limited English-speaking households) is provided in the *Link US Community Impact Assessment* (Appendix D of this EIS) and summarized in Table 3.15-7 and Table 3.15-8.

An average of approximately 10 percent of the city and county population are identified as disabled, having reported serious difficulty with one or more of the following four basic areas of functioning: hearing, vision, cognition, and ambulation. When compared to the City of Los Angeles, the socioeconomic planning area has a slightly higher percentage of disabled populations. For institutional populations, the county and city have averages of approximately less than 1 percent of the total population in penal facilities, mental facilities, or homes for the aged. When compared with the city average, the socioeconomic planning area has a much higher institutionalized population of 26.4 percent because of the Twin Towers Correctional Facility and Los Angeles Men's Central Jail, which houses close to 5,000 inmates. The socioeconomic planning area contains relatively high percentages of limited English-speaking households, which are identified as households in which no member speaks English as their primary language and who have limited ability to read, write, speak, or understand English. The socioeconomic planning area has notable higher percentage of Asian and Pacific Islander language households when compared with the city.

Table 3.15-7. Disabled and Institutionalized Populations

Geographic Area	Disabled Population[a] (%)	Institutionalized Population[b] (%)
County of Los Angeles	10.1	0.6
City of Los Angeles	10.3	0.6
Socioeconomic planning area	9.3	26.4

Source: U.S. Census Bureau 2021b

Notes:

[a] ***Disabled population percentages are based on the total noninstitutional population.***

[b] ***Institutionalized population=People 16 years of age or older who are inmates or residents of institutions (penal, mental facilities, homes for the aged) and who are not in active duty in the armed forces.***

Table 3.15-8. Limited English-Speaking Households

Geographic Area	Total Number of Households	Limited English-Speaking Households				Total Households (%)
		Spanish Language (%)	Other Indo-European Languages (%)	Asian and Pacific Islander Languages (%)	Other Languages (%)	
County of Los Angeles	3,342,811	18.7	22.0	30.0	15.0	12.1
City of Los Angeles	1,384,851	23.9	22.0	30.7	14.5	13.8
Socioeconomic planning area	6,601	4.7	0.9	18.4	0.0	24.0

Source: U.S. Census Bureau 2021b

Notes:

Limited English-speaking households are households where all members 14 years or over have at least some difficulty with English.

Housing Characteristics

The *Link US Community Impact Assessment* (Appendix D of this EIS) details the housing and occupancy characteristics for the County and City of Los Angeles and the socioeconomic planning area. This section includes a high-level summary of that information and summarized in Table 3.15-9.

Approximately 94.2 percent of the total housing units within the City of Los Angeles were occupied, and the remaining 5.8 percent were vacant. Approximately 10.2 percent of the housing units in the socioeconomic planning area were vacant.

Table 3.15-9. Existing Occupancy Characteristics

Geographic Area	Total Housing Units				Type of Occupancy[a]	
	Occupied		Vacant		Owner (%)	Renter (%)
	Units	%	Units	%		
County of Los Angeles	3,420,628	95.2	171,353	4.8	45.6	54.4
City of Los Angeles	1,410,260	94.2	86,193	5.8	35.9	64.1
Socioeconomic planning area	6,931	89.8	791	10.2	12.1	87.9

Source: U.S. Census Bureau 2021b
Notes:
[a] ***Percentages do not add up to 100 percent because not all respondents identified whether they owed or rented.***

The vast majority of the population (87.9 percent) in the socioeconomic planning area rents rather than owns their housing unit. The socioeconomic planning area is predominantly multifamily residential housing (93.9 percent) when compared with the County and City of Los Angeles (49 and 60.7 percent, respectively), as summarized in Table 3.15-10.

Table 3.15-10. Housing Types

Geographic Area	Total Housing Units	Single-Family Units (%)	Multifamily Units (%)	Mobile Homes (%)
County of Los Angeles	3,490,118	55.8	49.0	1.5
City of Los Angeles	1,447,026	44.6	60.7	0.6
Socioeconomic planning area	5,510	6.1	93.9	0.0

Source: U.S. Census Bureau 2021b

U.S. Census data summarized in the *Link US Community Impact Assessment* (Appendix D of this EIS) indicates that median monthly rents within the socioeconomic planning area median monthly rents within the socioeconomic planning area are low relative to median monthly rents in the City of Los Angeles and County of Los Angeles (Table 3.15-11). The low median monthly rents can be attributed to the William Mead Homes and other subsidized apartment complexes and public housing in the area. The monthly rent at William Mead Homes is calculated annually to be no more than 30 percent of the household's income (HACLA 2023). According to the Los Angeles County Housing Resource Center, there are several low-income apartment buildings in the socioeconomic planning area (Los Angeles County Housing Resource Center 2023). The Metro at Chinatown Senior Lofts provide affordable, independent living spaces that are handicap accessible for residents 55 and older.

Table 3.15-11. Housing Characteristics		
Geographic Area	**Median Home Value (US$)**	**Median Monthly Rent (US$)**
County of Los Angeles	647,000	1,653
City of Los Angeles	705,900	1,641
Socioeconomic planning area	720,250	1,848

Source: U.S. Census Bureau 2021b

Newer market-rate apartment/multifamily has recently been constructed in the socioeconomic planning area. The newer apartment complexes include the Mozaic Apartments and One Santa Fe Apartments. Monthly rents in these types of apartments at the Mozaic Apartments range from $2,130 for a one-bedroom studio apartment to $2,712 for a two-bedroom studio (Equity Apartments 2023). Monthly rents at the One Santa Fe Apartments range from $2,016 for a studio to $5,127 for a two-bedroom apartment.

Table 3.15-12 provides a summary of housing tenure characteristics for the County and City of Los Angeles and socioeconomic planning area. Based on the information contained in this table, the majority of the residential population within the socioeconomic planning area moved into their current residence prior to 1979.

Table 3.15-12. Housing Tenure Characteristics						
	Year Householder Moved Into Unit (%)					
Geographic Area	**1979 or earlier**	**1980 to 1989**	**1990 to 1999**	**2000 to 2009**	**2010 to 2019**	**2020 or later**
County of Los Angeles	72.7	11.8	6.5	5.4	3.5	0.1
City of Los Angeles	72.9	10.6	6	5.5	4.8	0.1
Socioeconomic planning area	40.6	9.8	5.3	15.1	28.6	0.6

Source: U.S. Census Bureau 2021b

Economic and Employment Characteristics

Regional and Local Economy

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS), the primary industries that contributed to the economy in the City of Los Angeles were professional services, with approximately $90.7 million in gross receipts; and health care, retail trade, finance and

insurance, real estate, and wholesale trade, with gross receipts ranging from approximately $22 million to $50 million in gross receipts (Los Angeles Area Chamber of Commerce 2019).

Labor Force Characteristics

As detailed in the *Link US Community Impact Assessment* (Appendix D of this EIS), 64.9 percent of the population in the County of Los Angeles is in the labor force, relatively consistent with the City of Los Angeles, which reports 66.7 percent of the population in the labor force (Table 3.15-13). Employment status data for the socioeconomic planning area reflects a much lower percentage of the population not in the labor force, with 40.2 percent of the population either working or actively seeking work. This disparity can be attributed to the presence of a large penal population contained within the Twin Towers Correctional Facility in Census Tract 2060.20. With the exclusion of Census Tract 2060.20, 71.8 percent of the population in the socioeconomic planning area is in the labor force, which is only slightly above the County and City of Los Angeles.

Table 3.15-13. Employment Status

Geographic Area	Population (Age 16 and Over)	In Labor Force (%)	Not in Labor Force (%)
County of Los Angeles	8,101,041	64.9	35.1
City of Los Angeles	3,199,202	66.7	33.3
Socioeconomic planning area	22,793	40.2	59.8
Socioeconomic planning area, excluding Census Tract 2060.20	12,185	71.8	28.2

Source: U.S. Census Bureau 2021b

Employment by industry is shown in Table 3.15-14. In 2021, the industry sectors with the highest levels of employment in the City of Los Angeles were in the professional and technical, educational, health care and social assistance, and the arts, lodging, and food services categories.

In 2021, the industry sectors with the highest level of employment in the socioeconomic planning area were also in the in the professional and technical, educational, health care and social assistance, and the arts, lodging, and food services categories.

Table 3.15-14. Employment by Industry

Geographic Area	Population (Age 16 and Over)	Agriculture, Forestry, Fishing, Mining (%)	Construction (%)	Manufacturing (%)	Wholesale Trade (%)	Retail Trade (%)	Transportation and Warehousing, and Utilities (%)	Information (%)	Finance Insurance, and Real Estate (%)	Professional and Technical (%)	Educational, Health Care and Social Assistance (%)	Arts, Lodging and Food Services (%)	Other Services, Except Public Administration (%)	Public Administration (%)
County of Los Angeles	4,885,032	0.5	6.2	8.9	3.2	10	6.4	4.4	6	13.3	21.3	10.7	5.6	3.6
City of Los Angeles	3,199,202	0.4	6.4	7.3	2.6	9.7	5.1	6.3	6	14.9	20	12.3	6.3	2.6
Socioeconomic planning area	22,793	0.0	1.5	2.9	0.9	1.7	1.2	2.6	2.8	6.0	6.9	6.4	1.9	0.9

Source: U.S. Census Bureau 2021

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Community Cohesion Characteristics

Table 3.15-15 provides a summary of community cohesion indicators in each of the six census tracts in the socioeconomic planning area.

Based on U.S. Census data, there are indicators of moderate community cohesion present within Census Tract 2060.10 in Segment 1 (moderate percentage of the population that has a household of two or more people, high ethnic homogeneity, and a higher percentage of senior citizens). However, during field surveys conducted in April 2016 and multiple outreach activities conducted with elected officials and residents of the William Mead Homes, community cohesion in this area was determined to be high, primarily due to the presence of children observed in open areas of William Mead Homes, the number of low-rise residential units located near community facilities, and the presence and involvement of community members within the William Mead Homes complex.

Indicators of community cohesion in Segment 2 (Census Tracts 2060.20, 2071.02, and 2071.03) and Segment 3 (Census 2060.51 and 2060.52) reflect moderate community cohesion (moderate percentage of residency tenures greater than 5 years, high ethnic homogeneity, and moderate percentage of senior citizens).

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Table 3.15-15. Summary of Community Cohesion Factors within the Socioeconomic Planning Area Census Tracts

Geographic Area	Long Average Residency Tenures	Households of Two or More People	Home Ownership Versus Rental	Single Family Homes Versus Higher Density Housing	Ethnic Homogeneity	Higher Percent of Seniors
Census Tract 2060.10 (Segment 1: Throat Segment; Northern Industrial District/ Chinatown)	Moderate – 8.6% population moved in less than 5 years ago; 29% population moved in between 5 and 10 years ago	Moderate - 62.1% population are households of two or more	Low – 93.2% population rents	Low – 82.2% multifamily housing	Moderate – 54.8% Hispanic or Latino	Moderate - 16.9% of population
Census Tract 2060.20 (Segment 2: Concourse Segment; Northern Industrial District)	Low – 32.4% population moved in less than 5 years ago; 58% population moved in between 5 and 10 years ago	Moderate - 70.6% population are households of two or more	Low – 100% population rents	Low – 98.2% multifamily housing	Moderate – 41.7% Hispanic or Latino;	Low – 2.0% of population
Census Tract 2071.02 (Segment 2: Concourse Segment; El Pueblo District)	Moderate, 5.8% population moved in less than 5 years ago; 40.5% population moved in	Moderate - 55.5% population are households of two or more	Low – 97.1% population rents	Low – 96.7% multifamily housing	Moderate – 57% Asian	Moderate – 21.7% of population

Table 3.15-15. Summary of Community Cohesion Factors within the Socioeconomic Planning Area Census Tracts

Geographic Area	Long Average Residency Tenures	Households of Two or More People	Home Ownership Versus Rental	Single Family Homes Versus Higher Density Housing	Ethnic Homogeneity	Higher Percent of Seniors
	between 5 and 10 years ago					
Census Tract 2071.03 (Segment 2: Concourse Segment; Chinatown)	Moderate – 12.0% population moved in less than 5 years ago; 18.3% population moved in between 5 and 10 years ago	Moderate - 64.7% population are households of two or more	Low – 97.8% population rents	Low – 91% multifamily housing	High – 78% Asian	Moderate – 26.1% of population
Census Tract 2060.51 (Segment 3: Run-Through Segment; Arts District/ Southern Industrial District)	Moderate – 12.4% population moved in less than 5 years ago; 39.9% population moved in between 5 and 10 years ago	Moderate - 41.21% population are households of two or more	Moderate – 56% population rents	Low – 87.2% multifamily housing	Low – 26.6% Hispanic or Latino;	Low – 7.2% of population
Census Tract 2060.52 (Segment 3: Run-Through Segment; Arts District/ Southern Industrial District)	Low – 36.3% population moved in less than 5 years ago; 44.8% population	Moderate - 52.3% population are households of two or more	Low – 94.3% population rents	Low – 98.8% multifamily housing	Moderate – 42.3% Asian	Low – 3.3% of population

Table 3.15-15. Summary of Community Cohesion Factors within the Socioeconomic Planning Area Census Tracts

Geographic Area	Long Average Residency Tenures	Households of Two or More People	Home Ownership Versus Rental	Single Family Homes Versus Higher Density Housing	Ethnic Homogeneity	Higher Percent of Seniors
	moved in between 5 and 10 years ago					

Source: U.S. Census Bureau 2020, 2021

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3.15.5 Environmental Consequences

TOPIC 3.15-A	Community facilities

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-related improvements, therefore there would be no temporary access restrictions to community facilities within the Project study area as no lane closures or detours would be required. Reasonably foreseeable future projects along with other maintenance activities in the railroad ROW would still occur under the No Action Alternative. Changes to community facilities related to other projects could incrementally increase the demand for community facilities, depending on the proposed project type. The context and intensity of effects would vary based on the location of the other proposed developments and the extent to which community facilities are physically impacted are based on the location of other construction-related activities. Maintenance activities in the railroad ROW would be subject to applicable Metro requirements and are not expected to affect community facilities given the nature of ongoing maintenance activities in the railroad ROW. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Construction of the Build Alternative would occur in multiple phases and stages. As discussed in Section 3.3, Transportation, detours and closures would be required in each of the three segments of the Project study area.

During construction, access to community facilities within the Project study area such as parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries and places of worship would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. This is considered an adverse effect. Access to community facilities outside the Project study area is expected to be maintained because temporary roadway closures and detours would occur within the limits of the Project study area. Mitigation Measure TR-1 (described in Section 3.3, Transportation) requires a TMP to be prepared to minimize construction related vehicular traffic delays. The TMP requires implementation of site-specific detours to maintain peak traffic flow to the degree feasible, posting advance notices throughout the Project study area prior to construction, and adjusting signal timing at affected intersections where necessary. Upon implementation of Mitigation Measure TR-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

The Build Alternative is a transportation improvement project that does not include housing and would not generate population growth directly or increase the demand for community facilities including but not limited to parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship. Additionally, there are no parks, schools, childcare centers, libraries or places of worship within the Project footprint that would be permanently displaced, altered, or physically impacted. Operation of the Build Alternative would not restrict access to community facilities or disrupt the basic functions of the facilities identified in the Project study area. There would be no permanent roadway closures that would restrict access to any community facility within the Project study area. No direct adverse effect on community facilities would occur during operation.

Indirect Effects – Construction and Operations

Applicable screening distances were used to identify where noise and vibration-sensitive land uses are located based on the proximity to proposed infrastructure. Community facilities within the socioeconomic planning area, including parks, schools, childcare centers, healthcare facilities, libraries, and places of worship, were all considered. At the Metro Gateway Childhood Development Center, construction noise levels are expected to reach the City's 75 dBA limit. Severe construction and operational noise impacts were identified at the William Mead Homes athletic field and the Care First Village playground/park; however, these two facilities are not classified as public parks, and public recreation is not the primary purpose or the intent of the William Mead Homes or Care First Village developments. Throughout construction, noise and vibration impacts would still be adverse after implementation of mitigation; however, during operation, sound walls would be implemented at these two locations in accordance with Mitigation Measure NV-1 to reduce operational noise impacts. No severe noise impacts were identified at any other public parks or community facilities. The residual impacts of construction noise and vibration on the two recreational areas at William Mead Homes and Care First Village, and the Metro Gateway Childhood Development Center that would remain after implementation of mitigation is considered an indirect adverse effect.

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Over time, additional demand on community facilities may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed community facilities. No indirect adverse effect would occur.

TOPIC 3.15-B	Government services

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-related improvements, therefore there would be no additional demand on government services including fire protection, law enforcement, and emergency service providers. Reasonably foreseeable future projects, along with other maintenance activities in the railroad ROW, would still occur. Increased demand for government services from other projects could occur incrementally, depending on the proposed project type. The context and intensity of effects would vary based on the location of the other proposed developments and the extent to which government services are impacted. Maintenance activities in the railroad ROW are not expected to cause impacts on government services during construction or operations. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – 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. During construction, detours and street closures would be required in each of the three segments of the Project study area; however, no detours or street closures would be required at or around Fire Station 4. The details of the roadway closures and detours to be implemented during construction are discussed in detail in Section 3.3, Transportation. Increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers.

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. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in the vicinity of these affected roadways, especially US-101 and Alameda Street, would extend over multiple years and could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. As discussed in Section 3.3, Transportation, not all the roadway closures would occur at the same time because construction activities would be phased in each of the three segments of the Project study area, and other roadways would be available to maintain access and connectivity in the event of an evacuation. Notwithstanding these circumstances, this is considered an adverse effect. Mitigation Measure TR-1 requires the contractor to coordinate proposed detours and road closures with LADOT, Caltrans, private

businesses, public transit and bus operators, emergency service providers, and residents and provide advance notice to roadway users of upcoming detours and road closures so that these areas can be avoided, or alternative routes can be taken. With the implementation of Mitigation Measure TR-1, no direct adverse effect would occur during construction.

Direct Effects – Operations

During operation, no effects on fire protection and/or law enforcement service ratios would occur because the Build Alternative would not directly generate an increase in population growth or substantial demand for these services. Increased patronage and employment at LAUS would result in a nominal increase in demand for police, fire, and emergency medical services; however, compared to the overall growth in downtown Los Angeles, and considering this growth is already planned for, the magnitude of the increased demand is low. The Build Alternative is located in a portion of the city with higher-than-average LAFD service coverage with average response time of 5 minutes and 5 seconds (LAFD 2023) from Los Angeles Fire Station 4 to LAUS. The Build Alternative would be constructed in accordance with all applicable fire codes set forth by the State Fire Marshall and LAFD, and Metro is coordinating with the LAFD to address fire/life safety issues as part of the design of proposed infrastructure. The LAFD, LASD, and Los Angeles Police Department already service the socioeconomic planning area, and because the Build Alternative is proposed in an urbanized area with adequate service coverage and will be built in accordance with all applicable fire codes, the Build Alternative is not anticipated to directly affect service ratios, response times, or other performance objectives throughout operation. Upon completion of construction, no changes would be made to the identified evacuation routes as identified by the City of Los Angeles. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. Over time, additional demand on government services may occur. It is expected that future growth would be subject to development impact fees or an equivalent mechanism to support the needed government services. No indirect effects that would affect emergency routes, increase response times, or limit access for fire, police, and emergency responders would occur during construction and operations. Therefore, no indirect adverse effect would occur.

TOPIC 3.15-C	Population growth

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. The No Action Alternative would not include construction of any Project-

related improvements; therefore, there would be no increase in population growth because no new short-term construction or permanent jobs would be created. Reasonably foreseeable future projects, along with other maintenance activities in the railroad ROW, would still occur. Population growth from other proposed projects could incrementally occur, depending on proposed project type. The context and intensity of effects would depend on the type and density of infill development. The context and intensity of effects would vary based on the location of the other proposed developments and the extent to which population growth are impacted. Maintenance activities in the railroad ROW are not expected to cause impacts on population growth during construction or operations. Therefore, no direct or indirect effect would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

As identified in Section 3.13, Economic and Fiscal Impacts, and the *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS), the construction phase would create short-term jobs for Los Angeles County. The Build Alternative is expected to generate approximately 23,619 job-years (representing more than $1.7 billion in labor income) during the construction period. While the Build Alternative would generate additional short-term employment opportunities during construction, the majority of these jobs are expected to be filled by residents of Los Angeles and surrounding communities, and these temporary jobs would cease upon construction completion. Therefore, substantial population growth within the socioeconomic planning area during construction is not anticipated. No direct adverse effect would occur.

Direct Effects – Operations

The Build Alternative does not include new residential land uses. Proposed retail amenities at LAUS would generate additional employment opportunities, the majority of which are expected to be filled by residents of Los Angeles and surrounding communities. Refer to Section 3.13, Economic and Fiscal Impacts, for additional information. There would be no substantial increase in population as a direct result of the Build Alternative.

Based on the SCAG's 2020 RTP/SCS, the Build Alternative would be located within a Priority Growth Area and High-Quality Transit Area. Operation of the Build Alternative would accommodate the anticipated growth that is planned for and identified in SCAG's 2020 RTP/SCS and other local planning documents. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

No indirect effects related to population growth would occur during construction because of the temporary nature of construction activities and the presence of local workers and housing in the City and County of Los Angeles. The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Projected population growth would occur within a designated Priority Growth Area (SCAG 2020), with or without the additional infrastructure associated with the Build Alternative. The potential for induced growth to

occur within Priority Growth Areas has already been captured at the local and regional level through the inclusion of the Project in the DCP and the 2020 RTP/SCS and has been analyzed at a programmatic level in the Programmatic EIR prepared for SCAG's 2020 RTP/SCS, respectively. The SCAG 2020 RTP/SCS Programmatic EIR identifies impacts and mitigation for induced growth to assist cities and promote sustainable growth patterns. No indirect adverse effect would occur during construction or operation.

TOPIC 3.15-D	Business displacements and the economy

No Action Alternative

The No Action Alternative would not include any Project-related changes to existing environmental conditions. Construction activities would not occur, and no ROW acquisitions or business displacements would be required. There would be no associated loss in jobs and property taxes due to business displacement. Reasonably foreseeable future projects along with maintenance activities in the railroad ROW would still occur. Non-Project-related business displacements and impacts to the economy could occur incrementally, depending on the proposed project type. The context and intensity of effects would vary based on the location of the other proposed developments and the extent to which business displacements and the economy are impacted. Maintenance activities in the railroad ROW are not expected to cause impacts to businesses or the economy during construction or operations. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

The Build Alternative would have a beneficial effect on the regional and local economy during construction through generation of employment, labor income, and federal, state, and local tax revenues. Capital expenses incurred locally during the construction phases (interim condition and full build-out) would result in direct, indirect, and induced economic effects. Capital expenditures during the interim condition are expected to be $1.93 billion. During the full build-out condition, an additional $1.35 billion of construction spending is expected.

This capital investment is expected to generate short-term economic impacts. In particular, the Build Alternative is expected to generate approximately 33,536 job-years. This spending would also translate to $5.23 billion in output (including $2.8 billion in value added) and $0.75 billion in federal, state, and local tax revenues for the Build Alternative. On average, every dollar of capital expenditure during construction would generate an additional $0.78 in the local economy. An in-depth analysis of economic and fiscal effects of the Build Alternative can be found in the *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS).

With the exception of the displacements discussed below, businesses are not anticipated to be impacted by construction activities. Most construction activities take place within existing ROW.

There are no businesses located along the portions of North Vignes Street or Cesar Chavez Avenue that will experience a temporary closure of one lane and sufficient detours will be provided to maintain motorized and non-motorized travel through the area. Access to all businesses along adjacent segments of these affected roadways would be maintained. Businesses located south of Commercial Street adjacent to the Project footprint are destination-based businesses, including a large-scale cannabis dispensary, an adult entertainment establishment, parking facilities, and street food vendors. These businesses are not noise or vibration sensitive land uses. Full access to these businesses and associated parking would be maintained. Although short-term overnight closures of the southbound ramps at Commercial Street would be necessary to erect and dismantle falsework during construction of the US-101 Viaduct, alternate access would be provided to businesses along Commercial Street via local roads. With implementation of Mitigation Measure TR-1 that requires preparation of a TMP and advanced notification of construction activities to businesses, no direct adverse effect would occur.

The Build Alternative includes a temporary staging area on a portion of a Denny's restaurant parking lot that would be configured in a manner to be used for construction while retaining adequate parking for restaurant patrons. All other construction access and staging areas are proposed on vacant undeveloped properties or portions of parcels that would not affect local businesses. The long-term operational impact analysis related to displacements and job loss is presented below. Based on these considerations and the substantial capital expenditures to occur during construction, the Build Alternative would result in a direct beneficial effect during construction.

Direct Effects – Operations

Business Displacements

As shown in Table 3.15-16, non-residential displacements are grouped into five categories: commercial businesses, industrial/manufacturing businesses, government facilities, non-profit organizations, and agricultural/farms. These terms are further defined in the *Link US Relocation Impact Report* (Appendix P of this EIS). As summarized in Table 3.15-16, the Build Alternative may displace up to one commercial business (Life Storage) and two industrial/manufacturing businesses (Amay's Bakery and a portion of BNSF's West Bank Yard). The Build Alternative may require full acquisition of Amay's Bakery and the Life Storage businesses and partial acquisition of the BNSF West Bank Yard. No non-profit organizations or agricultural/farms would be displaced by the Build Alternative.

The Life Storage facility includes 640 individual storage units. Due to the planned acquisition of the parcel and displacement of the business, personal property would be required to be moved elsewhere prior to acquisition.

Table 3.15-16. Estimated Non-Residential Displacements

Type of Non-Residential Use	Number of Anticipated Displacements
Commercial businesses	1
Industrial/manufacturing businesses	2
Government facilities	0
Non-profit organizations	0
Agricultural/farms	0
Total	**3**

Given that there is available land within the Project study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed (*Link US Relocation Impact Report,* Appendix P of this EIS). A national business relocation survey conducted by O. R. Colan Associates in 2010 (FHWA 2010) found that, on average, 67 percent of displaced businesses were eligible to receive relocation financial assistance. During final design relocation, costs and schedule would be estimated.

Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. Mitigation Measure TR-3 requires implementation of railroad improvements in the City of Vernon at BNSF's Malabar Yard to offset the loss of storage track capacity resulting from the partial acquisition of the facility. Potential effects that may occur from the Malabar Yard railroad improvements that are proposed Project-related mitigation are summarized in Table 3.15-18. A full environmental evaluation of the Malabar Yard railroad improvements is provided in the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS). Upon implementation of Mitigation Measure TR-3, no direct adverse effect would occur.

Property Tax Loss and Job Displacement

The Build Alternative may require the full or partial acquisition of several parcels and the subsequent demolition of up to 34,784 square feet of building space associated with Amay's Bakery and 122,050 square feet of building space associated with the Life Storage Self Storage facility. In fiscal year 2019, the total property taxes levied on all these parcels amounted to $335,221 (Appendix O of this EIS); all of which would be considered lost property tax revenue representing less than 0.5 percent of total property taxes levied in Los Angeles County (assuming that all businesses on the parcels would be permanently displaced [worst-case scenario]). See the *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS) for a detailed discussion of property tax impacts. Implementation of the Build Alternative would not result in the loss of residential property tax revenues because there are no residential relocations.

Assuming that all businesses on the parcels will be permanently displaced (worst case scenario) this translates into an estimated displacement of 40 to 60 jobs. Some of these jobs would be displaced temporarily and some permanently, depending on how many workers relocate within the County of Los Angeles. Given that there is available land within the Project study area and that industrial businesses are not dependent on local patronage, some relocation may occur locally. Assuming some level of business relocation, the resulting number of jobs lost would decrease to approximately 20. An in-depth discussion of displacements, relocations, and real property acquisition as it relates to the Build Alternative can be found in the *Link US Relocation Impact Report* (Appendix P of this EIS).

New Property and Sales Tax Generation

Overall, the Build Alternative is estimated to increase annual local government revenues by up to $4.0 million (in 2019 dollars) based on known and quantifiable direct impacts. New revenues for city and county governmental entities in the form of increased property and sales tax are expected to be generated, as well as additional lease revenues from the expected addition of up to 160,000 square feet of transit-serving retail amenities. In the opening year, the concourse-related improvements are forecast to generate net rental income of about $8.6 million in the first full year of operations at LAUS (2032 dollars). In addition, the proposed concourse-related improvements would generate nearly $1.4 million in new property taxes in the opening year. At the same time, the concourse would entail new operations costs for Metro.

Permanent Jobs

An estimate of direct retail jobs created due to the Build Alternative was generated based on the 160,000 square feet of additional retail area. To estimate retail jobs, an average metric of 2.5 retail employees per 1,000 square feet was used. The number of additional operations jobs was estimated by Metro's asset management consultant based on the need for operating the expanded concourse space.

The Build Alternative would generate an estimated 146 net new FTE positions by 2034 (1 full year after the planned HSR system is anticipated to be in operation [2033]). Operations would support the following:

- 96 net new FTE jobs in retail; and
- 50 new FTE jobs in janitorial, engineering, and security services.

Once the planned HSR system is operational at LAUS, the number of long-term FTE jobs would increase from 146 to 171 due to 25 additional positions that would be created to support expanded passenger rail services. While there would be changes to the type of businesses and jobs available at LAUS, the local economy would benefit from operation of the Build Alternative in the form of increased property and sales taxes and new employment opportunities associated with LAUS.

These job projections are consistent with the economic growth analysis prepared for the 2020 RTP/SCS, which estimates new jobs would be generated annually from construction, maintenance, and operations expenditures associated with the Build Alternative, as well as the indirect and induced jobs that flow from those expenditures from all of the projects listed in the 2020 RTP/SCS (SCAG 2020).

Based on the discussion above, the Build Alternative would overall have a direct beneficial effect on the regional and local economy during operations through generation of employment, labor income, and federal, state, and local tax revenues.

Indirect Effects – Construction and Operations

Expenditures during construction of the Build Alternative would result in demand for construction materials and construction jobs. These construction expenditures are considered direct effects, which would lead to indirect effects as the output of firms in other industries increases to supply the demand for inputs to the construction industry. In addition, wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally.

More than half of the employment impacts can be attributed to direct spending on construction. The indirect effect (or supply-chain effect) accounts for 19 percent of the employment impact while the induced effect (or employee spending effect) represents 27 percent. A breakdown of employment impacts by construction phase is included in the *Link US Economic and Fiscal Impact Assessment* (Appendix O of this EIS).

The Build Alternative would increase tax revenue from business, wages paid to workers, and is expected to generate employment during construction and operations. An indirect beneficial effect would occur.

TOPIC 3.15-E	Community character and cohesion

No Action Alternative

Residential communities located in the Project study area include the William Mead Homes complex and the Care First Village (Segment 1), Mozaic Apartments (Segment 2), and One Santa Fe Apartments (Segment 3). Of these, only William Mead Homes was found to have potentially high community cohesion characteristics based on observed conditions during site walks and feedback from the local residents.

The No Action Alternative would not include any Project-related changes to existing environmental conditions. No construction activities or construction traffic routing that would create physical or perceived barriers within the community, limit access to the facilities, or disrupt religious or cultural ceremonies would occur. Reasonably foreseeable future projects along with other maintenance activities in the railroad ROW would still occur. Impacts to community character and cohesion from other projects could occur incrementally, depending on the proposed

project type. The context and intensity of effects would vary based on the location of the other proposed developments and the extent to which community character and cohesion are impacted. Maintenance activities in the railroad ROW are not expected to cause impacts on government services during construction or operations. Therefore, no direct or indirect effects would occur under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Detours and temporary traffic disruptions during construction could cause access disruptions to circulation but would not create temporary barriers or change the character of the residential communities in Segments 1 and 2 of the Project study area because all construction activities would occur within and immediately adjacent to the railroad ROW or other existing transportation ROW, including US-101.

South of LAUS, no residential communities are present within the Project footprint, and there are no shopping areas located in the Project study area. Community facilities such as places of worship that are located within the socioeconomic planning area but outside of the Project study area would not be affected by construction of the Build Alternative because there would be no construction activities or construction traffic routing that would create physical or perceived barriers within the community, limit access to the facilities, or disrupt religious or cultural ceremonies. Therefore, no adverse effect on community character and cohesion would occur in this area. No direct adverse effect would occur during construction.

Direct Effects – Operations

The Build Alternative would not permanently separate or sever residential populations from existing community facilities in the area or affect changes to the quality of life and/or viability of shopping areas after construction of proposed infrastructure. In Segments 1 and 2, all proposed infrastructure would occur within the railroad ROW and the general limits of LAUS on agency-owned property, and tracks would be in the same location as the existing tracks. South of US-101 in Segment 3, run-through track infrastructure would be between Commercial Street and US-101, where vacant property currently exists.

There will be no permanent street closures affecting residential parcels. No residential communities would be displaced from proposed infrastructure associated with the Build Alternative. Access and connectivity opportunities would be maintained, and non-motorized circulation and access in Segment 3 would be enhanced with improved connectivity and cohesion. Therefore, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

The Build Alternative is anticipated to foster land use changes via transit-oriented development at LAUS and within the surrounding areas. Future growth around LAUS would be attributable to the Build Alternative (induced growth); however, future transit-oriented development and growth

around LAUS is already planned for, and environmental impacts have been evaluated at a programmatic level, as part of multiple planning documents including the ADSP, the DCP, and 2020 RTP/SCS. The Build Alternative would not create physical or perceived barriers within the community, cause displacements that would change the quality of life, cause a change in population that affects the social or cultural character of the community, or affect quality of life to the extent that it would change community character. No indirect adverse effect would occur during construction or operation.

3.15.6 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects related to socioeconomics and communities.

TR-1 **Prepare a Construction Traffic Management Plan.** See Section 3.3, Transportation, for details.

TR-3 **Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street).** See Section 3.3, Transportation, for details.

NV-1 **Construct Sound Walls.** See Section 3.6, Noise and Vibration, for details.

3.15.7 NEPA Impact Summary

This section summarizes the effects related to socioeconomic conditions and established communities of the Build Alternative and compares them to the anticipated effects of the No Action Alternative.

No Action Alternative

Under the No Action Alternative, no Project-related effects on community facilities, government services, population growth, business displacements, or community character and cohesion would occur. Future infill development could affect these socioeconomic issues. The context and intensity of effects would vary based on the location, type, and density of future proposed projects, which is unknown at this time.

Build Alternative

Under the Build Alternative, access to parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship may be restricted during construction within the Project study area, as discussed under Topic 3.15-A. This is considered an adverse effect. However, implementation of Mitigation Measure TR-1 would minimize these effects through maintaining peak traffic flows to the degree feasible, adjusting signal timing at intersections, and posting advance notices. Once in operation, no community facilities would be permanently displaced, altered, or physically impacted, and there would be no permanent roadway closures restricting access to any community facility. Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the Care First

Village playground/park; however, these two facilities are not classified as public parks, and public recreation is not the primary purpose or the intent of the William Mead Homes or Care First Village developments.

As discussed under Topic 3.15-B, construction under the Build Alternative could disrupt traffic congestion and increase emergency response time for police, fire, and emergency service providers. These effects could occur in Segments 1, 2, and 3 and are considered adverse effects. Implementation of Mitigation Measure TR-1 would minimize the potential for effects on emergency response times by requiring the contractor to coordinate proposed detours and road closures with LADOT, Caltrans, private businesses, public transit and bus operators, emergency service providers, and residents. During operations, no effects on fire protection or law enforcement service ratios would occur, and the Build Alternative would not generate population growth or substantial demand for government services. In addition, no changes would be made to the identified evacuation routes identified by the City of Los Angeles.

As discussed under Topic 3.15-C, new employment opportunities are anticipated during construction, but most jobs are expected to be filled by residents of Los Angeles and surrounding communities, and substantial population growth in the socioeconomic planning area is not anticipated. During operations, the Build Alternative would accommodate the anticipated growth identified in SCAG's 2020 RTP/SCS and other local planning documents. Projected population growth during operations would occur with or without the additional infrastructure associated with the Build Alternative. Therefore, no adverse effects related to population growth would occur.

As discussed under Topic 3.15-D, the Build Alternative would generate approximately 23,619 job-years and $3.8 billion in output during construction; a direct beneficial effect. During operations, the Build Alternative would displace one commercial business (Life Storage) and two industrial/manufacturing businesses (Amay's Bakery and a portion of BNSF's West Bank Yard). This would result in lost property taxes on these parcels and job displacement. However, the Build Alternative would overall have a beneficial effect on the regional and local economy through generation of employment, labor income, and federal, state, and local tax revenues. The Build Alternative is estimated to increase annual local government revenues by up to $4.0 million and 96 net new FTE jobs in retail and 50 new FTE jobs in janitorial, engineering, and security services.

As discussed under Topic 3.15-E, the Build Alternative would not create barriers or change the character of residential communities in the Project study area, nor would it displace residential communities. As such, no adverse effects on community character and cohesion would occur.

Table 3.15-17 provides an impact summary for the Build Alternative.

Table 3.15-17. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Topic 3.15-A: Community facilities	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect Adverse Effect	*Indirect* **NV-1 Construct Sound Walls**	*Indirect* No Adverse Effect
Topic 3.15-B: Government services	*Construction* Adverse Effect	*Construction* **TR-1 Prepare a Construction Traffic Management Plan**	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.15-C: Population growth	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect
Topic 3.15-D: Business displacements and the economy	*Construction* Beneficial Effect	*Construction* No mitigation is required	*Construction* Beneficial Effect

Table 3.15-17. NEPA Impact Summary for the Build Alternative

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Operations Adverse Effect	*Operations* **TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street)**	*Operations* No Adverse Effect
	Indirect Beneficial Effect	*Indirect* No mitigation is required	*Indirect* Beneficial Effect
Topic 3.15-E: Community character and cohesion	*Construction* No Adverse Effect	*Construction* No mitigation is required	*Construction* No Adverse Effect
	Operations No Adverse Effect	*Operations* No mitigation is required	*Operations* No Adverse Effect
	Indirect No Adverse Effect	*Indirect* No mitigation is required	*Indirect* No Adverse Effect

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Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.2, Land Use and Planning			
Topic 3.2-A: Alteration of land use patterns	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.2-B: Compatibility with existing or planned land uses	*Construction* Adverse Effect • Construction activities for any combination of design options for Malabar Yard railroad improvements would result in temporary access disruptions to existing businesses, which could change the travel path to businesses by customers and delivery vehicles during construction. This temporary disruption in existing traffic circulation could result in land use incompatibilities from access restrictions to nearby businesses when road closures are required. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* **MY TR-1** **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon. Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, Los Angeles Unified School District, and emergency service providers to minimize construction-related vehicular and non-vehicular traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, 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 to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. 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, 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 or the contractor shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.2-C: Physical division of an established community	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.3, Transportation			
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard). *Indirect Effects* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. **MY TR-2** **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to temporarily restripe the westbound shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and add a right-turn overlap phase in the same direction. The temporary restriping shall remain in place for the duration of construction. Upon completion of the Malabar Yard railroad improvements, the lane shall be returned to its original condition as a shared through/right-turn lane and the right-turn overlap phase shall be eliminated. **MY TR-3** **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to restripe one eastbound through lane to an eastbound turn lane at Vernon Avenue. *Operations* Implement Mitigation Measure MY TR-3. **MY TR-4** **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall restripe the northbound shared through/right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard. **MY TR-5** **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040):** In the Future Horizon	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall add a new westbound vehicular lane on Fruitland Avenue.	
Topic 3.3-B: Design of existing roadways and intersections causing increased hazards	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations resulting in temporary construction-related roadway hazards to motorists, pedestrians, and bicyclists. *Operations* Adverse Effect • The New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. *Operations* **MY TR-6** **Obtain Required Approvals for At-Grade Railroad Crossings:** For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain required approvals from the City of Vernon and submit a Formal Application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 *CEQA Compliance*, the Formal Application shall include the Link US Final EIR (June 2019) and Final SEIR.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also impede access for emergency responders throughout construction. In addition, these two intersections are along a designated disaster route. *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may impede access for emergency responders throughout operations. Intersection #6 is located along a designated disaster route. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also impede access for emergency responders. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measures MY TR-3 through TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1.	*Construction* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Construction of any combination of design options for the Malabar Yard railroad improvements would require temporary road closures within the traffic study area and may potentially affect public transit and other non-motorized modes of travel. Construction of any combination of design options would require detour routes and temporary traffic disruptions that may cause decreased performance for transit operators or subject pedestrians and bicyclists to hazardous conditions near work zones. *Operations* Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also cause schedule delays to transit services or disruption of pedestrian and bicycle access. *Indirect* No Adverse Effect	*Operations* Implement Mitigation Measure MY TR-6.	*Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.3-E: Freight	*Construction* No Adverse Effect *Operations* Beneficial Effect • Operation of any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency through 2040 for BNSF because local box and tanker train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction. *Indirect* Beneficial Effect • Any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency by eliminating the need to operate on the same track as passenger trains. The increase in operational efficiency is considered a long-term benefit.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect
Section 3.4, Visual Quality and Aesthetics			
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.4-B: Light or Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.5, Air Quality and Global Climate Change			
Topic 3.5-A: General Conformity de minimis levels for the South Coast Air Basin	*Construction* No Adverse Effect *Operations* Beneficial Effect • Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel resulting in reduced fuel consumption by rail and associated rail emissions. In addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth thereby avoiding the diversion of rail served demand to long haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and associated truck emissions. From a localized perspective, implementation of the 46th Street Connector would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place. *Indirect* Beneficial Effect • Implementation of the railroad improvements would aid in the overall reduction of criteria air pollutant emissions through regional VMT reductions. The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	*Construction* Although not required, Malabar Yard Mitigation Measure AQ-1 and MY AQ-2 are applicable because Malabar Yard railroad improvements would be constructed at the same time as construction of the Build Alternative. When combined, there would be an exceedance of NOx during construction. Implementation of MY AQ-2 would reduce NOx emissions below the *de minimis* levels. MY AQ-1 is a requirement of the Link US Final EIR for the Build Alternative and SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts. **MY 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 earthmoving, 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 earthmoving 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.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		• 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: • The construction contractor shall prepare and update on a monthly basis 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 the California Air Resources Board (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. **MY AQ-2** **Compliance with U.S. EPA's Tier 4 Final 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.	
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* Beneficial Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Any combination of design options for the Malabar Yard railroad improvements would result in a net reduction in regional CO_2 emissions because it would reduce train miles for empty intermodal railcars and reduce truck VMT. *Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would aid in the overall reduction of GHG emissions through regional VMT reductions. The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.		
Section 3.6, Noise and Vibration			
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Malabar Yard railroad improvements also result in reduced train movements north of Malabar Yard where sensitive receptors are currently located and planned in the future.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Section 3.7, Biological and Wetland Resources			
Topic 3.7-A: Nesting birds protected by the MBTA	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements has potential to affect nesting birds protected by the MBTA that are present in the BSA during construction. Direct effects on an active	*Construction and Indirect* **MY BIO–1** **MBTA species:** During construction, 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 and/or CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. If nesting	*Construction* No Adverse Effect *Operations* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	nest, including removal of mature trees could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects on an active nest may include increased risk of construction noise above ambient noise levels, vibration, excess dust, night lighting, and human encroachment, all of which may result in nest failure.	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 adjusted based on species-specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. 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 buildings, or other structures that will be removed before the nesting season (February 1 through September 30) to prevent nesting at the bridges, buildings, or other structures 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. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials 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. Metro's Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and Regional Water Quality Control Board [RWQCB] jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.	*Indirect* No Adverse Effect
Topic 3.7-B: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements could result in the removal or disturbance of native tree species protected under the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). The cutting and/or removal of any protected City-owned trees without a tree removal permit would conflict with the City of Vernon Tree Ordinance. *Operations* No Adverse Effect	*Construction and Indirect* **MY BIO-2** **Protected Trees:** Prior to construction, City-owned trees (outside of private property) shall be identified and overlaid on Project footprint maps to determine which trees may be protected in accordance with the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). Prior to removal of any City-owned tree, Metro shall prepare a Tree Removal/Tree Protection Plan for review and approval by the City of Vernon Public Works Department that identifies: • Trees proposed to be cut or removed; • Trees proposed to be retained; and	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Adverse Effect • 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.	• Trees proposed to be provided in replacement of the trees that are to be cut or removed. All street trees shall be planted per the street tree master plan on file in the City of Vernon Public Works Department. In addition, all construction shall preserve and protect the health of trees to remain, relocated trees, and new trees planted to replace those removed in accordance with Section 12.24.090 of the City's Tree Ordinance.	
Section 3.8, Floodplains, Hydrology, and Water Quality			
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, there would be an anticipated reduction in the rate of stormwater runoff entering the public storm drain system. However, there is still a potential for an adverse effect on drainage if not properly designed for and managed throughout operation. For example, some storm drains may receive more runoff than under existing conditions by concentrating runoff to certain areas. *Indirect* Adverse Effect • During construction and operations, implementation of any combination of design options for the Malabar Yard railroad improvements may result in potential soil erosion and may alter drainage patterns as it may be necessary for the contractor to reroute drainage around one or more construction areas.	*Construction* **MY HWQ-1** **Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements:** During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. 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. Metro or BNSF shall comply with the Risk Level 2 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 the SWRCB within 90 days of completion of construction and stabilization of the site. *Operations* **MY HWQ-5** **Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements:** For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (known as the Phase I Permit). Metro or BNSF shall also prepare a final LID report in accordance with the City of Vernon's *Low Impact Development Guidance Manual*. This document shall identify the required BMPs to be in place prior to Project operation and maintenance. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • 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 into the Los Angeles River.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HAZ-1** **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated	*Construction* No Adverse Effect *Operations* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • Any reconstruction of impervious surfaces could affect stormwater runoff if not properly designed for and managed throughout operation. *Indirect* Adverse Effect • Construction of any combination of design options for the Malabar Yard railroad improvements may result in changes to existing drainage patterns and could result in in exceedances of the capacity of existing storm drains and stormwater facilities serving the area.	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 for the selected design options, 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; and (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, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120). *Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HAZ-1, MY HWQ-1, and MY HWQ-5.	*Indirect* No Adverse Effect
Topic 3.8-C: Flooding	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HWQ-2** **Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements:** 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* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • For Design Option 1 at 46th Street, potential impacts could occur on two sites that currently have an active Waste Discharger Identification number under the Industrial General Permit (IGP), which includes the Flores Design (APN 6308-004-012, south side of 46th Street, between Pacific Boulevard and Seville Avenue) and Arcadia Leonis (APN 6308-004-012, southwest corner of 46th Street and Seville Avenue). These sites include active permits with provisions to treat stormwater discharges that include pollutants, and updates to the permit may be required to continue to operate under the same permit. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	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 Vernon. **MY HWQ-3** **Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements:** 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 Vernon. *Operations* Implement Mitigation Measures MY HWQ-5. *Indirect* **MY HWQ-4** **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements:** Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable.	
Section 3.9, Geology, Soils, and Seismicity			
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect • The Malabar Yard study area includes soils that are potentially liquefiable. Construction activities could lead to indirect effects associated with liquefaction, including displacements, and bearing capacity failures.	*Indirect* **MY 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; • Corrosive soils; • Structural foundations; and • Grading practices. The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. 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	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		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 Malabar Yard railroad improvements in accordance with the *Manual for Railway Engineering*, and applicable city codes. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	
Topic 3.9-B: Soil erosion	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-C: Collapse due to the use of corrosive unstable geologic units or soils	*Construction* Adverse Effect • Due to the limited amount of site-specific geotechnical information available, construction activities may be subject to hydrocollapse. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.9-D: Expansive soils	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could result in uplift pressures that could lead to structural damage to both track improvements and signal, safety, and civil improvements. *Operations* Adverse Effect • The Malabar Yard railroad improvements would occur in an area with potentially expansive soils which could lead to structural damage from uplift pressures including sidewalk and pavement cracks and track damage.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Adverse Effect • Over the Project's lifetime, expansive soils within the Malabar Yard study area may cause structural damage from uplift pressures including sidewalk and pavement cracks and track damage.		
Section 3.10, Hazardous Waste and Materials			
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect • During construction, the use of hazardous materials and substances would be required, and hazardous wastes would be generated. If a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. • If contaminated soil and/or groundwater is encountered and is not adequately managed, potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction of the Malabar Yard railroad improvements. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY HAZ-1.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • Two high risk REC sites were identified in close proximity of the Malabar Yard railroad improvements and could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) during construction activities. • One REC site contains petroleum hydrocarbons and the second REC site contains chlorinated solvents (perchloroethylene and trichloroethylene). An accidental release of volatile contaminant vapors during excavation could pose a health hazard to construction employees, the public, and the environment. • An accidental release of asbestos containing materials or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* Implement Mitigation Measures MY HAZ-1. **MY HAZ-2** **Prepare Phase II 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 for the selected design options that would be affected by excavation. Phase II activities shall consist of: • Collection of soil, groundwater, and soil vapor samples from borings, for geologic and environmental 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), polychlorinated biphenyls, 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 recommendations. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		MY HAZ-3 **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. 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; and • Stormwater erosion control using BMPs. **MY HAZ-4** **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP):** Prior to construction, the contractor shall prepare parcel-specific Soil Management Plans for known contaminated 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. The nature and extent of contamination is expected to vary widely across the Project footprint for the selected design options, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: • Soil disposal protocols; • Protocols governing the discovery of unknown contaminants; and • Management of soil on properties within the Project footprint of the selected design options with known contaminants. Prior to construction on individual properties with known contaminants, parcel-specific HASPs shall also be prepared by contractors undertaking work activities to be submitted to and approved 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 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 HASP 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 or BNSF shall coordinate soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an	

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		appropriate monitoring and reporting program that meets all federal, state, and local laws for the Project and each of the contaminated sites. **MY HAZ-5** **Halt Construction Work if Potentially Hazardous Materials are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials are encountered. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, underground storage tanks, and ACM (e.g., transit pipes) encountered during the construction process. **MY HAZ-6** **Pre-Demolition Investigation:** Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. 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.	
Topic 3.10-C: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with high-risk ratings could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* Adverse Effect • Potential indirect effects could occur in the event hazardous materials migrate into other properties while construction is occurring.	*Construction* Implement Mitigation Measures MY HAZ-1 and MY HAZ-2. *Indirect* Implement Mitigation Measures MY HAZ-2 through MY HAZ-4.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.11, Public Utilities and Energy			
Topic 3.11-A: Water supply and infrastructure	*Construction* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations No Adverse Effect *Indirect* No Adverse Effect		*Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect • Construction-related changes in drainage patterns, including changes to the volume and rate of runoff, may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, drainage could be affected in a manner that could change the rate of stormwater runoff entering the public storm drain system. *Indirect* Adverse Effect • Potential alterations of drainage patterns and the rate of stormwater runoff entering the public storm drain system could indirectly affect water quality and existing drainage route connections.	*Construction* Implement Mitigation Measure MY HWQ-1. *Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-C: Solid waste collection and landfill capacity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.11-D: Telecommunications infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.11-E: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Malabar Yard railroad improvements would accommodate current and anticipated future increases in rail/freight for the region, resulting in an indirect beneficial effect on energy resources.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect
Section 3.12, Cultural and Paleontological Resources			
Topic 3.12-A: Built environment and unknown archaeological historic properties	*Construction* Adverse Effect • Ground-disturbing construction activities would occur in areas with elevated potential to contain buried archaeological sites. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect impacts may result from increased accessibility to buried archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Additionally, damage to improperly curated archaeological resources may occur.	*Construction and Indirect* **MY CUL-1 Archaeological Treatment Plan (ATP).** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). The ATP shall include, at a minimum, the following elements: • **Research Design:** The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions. • **Archaeological and Native American Monitoring.** The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. • **Provisions for the Accidental Discovery of Archaeological Features or Deposits.** The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop-work protocols, notification procedures, and methodology for assessing the nature and significance of	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented. • **Provisions for the Accidental Discovery of Human Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony.** The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop-work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes. • **Cultural Resource Worker Environmental Awareness Program (WEAP) Training.** The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. • **Standards for Reporting.** The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). • **Guidelines for Curation.** The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.	
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Deeper excavations have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but can be encountered at depths as shallow as 6 feet below the natural ground surface in the Malabar Yard vicinity). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	*Construction and Indirect* **MY PAL-1** **Paleontological Mitigation Plan (PMP).** It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full-time paleontological monitoring if excavations will 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 affect only artificial fill and Quaternary younger alluvium (Qa/Qal). The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery) and	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		Metro's 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 consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in 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 Metro's qualified paleontologist. **MY PAL-2** **Paleontological WEAP Training.** Metro's qualified paleontologist shall prepare paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP. **MY PAL-3** **Curation.** Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction 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) 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 taxonomic 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.	
Section 3.13, Economic and Fiscal Impacts			
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues. o Design Option 1 is expected to generate 143 temporary jobs (representing $9.4 million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. o Design Option 2 is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Section 3.14, Safety and Security			
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Temporary roadway closures and detours could cause potential delays in response times for emergency vehicles. Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also affect response times, or performance objectives of emergency responders.	*Construction* Implement Mitigation Measures MY TR-1 through MY TR-3. *Operations* Implement Mitigation Measures MY TR-3 through MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect response times, or performance objectives of emergency responders during operations. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may affect response times. *Indirect* No Adverse Effect		*Indirect* No Adverse Effect
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • There is a potential for safety risks to pedestrians and bicyclists due to the temporary detours and lane blockages that would affect local streets. Roadway modifications could affect accessibility to private driveways, parking areas, loading docks, sidewalks, and bike lanes during construction. *Operations* Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may expose pedestrians, bicyclists, or vehicles to accidents/incidents. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. *Operations* Implement Mitigation Measure MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.14-C: Security conditions	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.15, Socioeconomics and Communities Affected			
Topic 3.15-A: Community facilities	*Construction* Adverse Effect • Temporary road closures and detours could cause potential delays for emergency vehicles to access Stacy Medical Center. In addition, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect access to the Stacy Medical Center. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measures MY TR-3 through MY TR-6.	*Construction* No Adverse Effect *Operations* Adverse Effect *Indirect* No Adverse Effect
Topic 3.15-B: Government services	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect
Topic 3.15-C: Business displacements and the economy	*Construction* Beneficial Effect • Up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million is labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* No Adverse Effect

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations No Adverse Effect *Indirect* Beneficial Effect • Wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally. • Operation of the 46th Street Connector would facilitate enhanced goods movement and freight service to existing and potentially new customers in the City of Vernon.		*Indirect* Beneficial Effect
Section 3.16, Community Analysis			
Result in an adverse effect that is predominantly borne by a minority and/or a low-income community or Result in an adverse effect that will be suffered by the minority and/or low-income community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low-income community	The Malabar Yard railroad improvements would not result in adverse effects related to land use and planning, visual quality and aesthetics, air quality and global climate change, noise and vibration, biological and wetland resources, floodplains, hydrology, and water quality, geology, soils, and seismicity, hazardous waste and materials, public utilities and energy, cultural and paleontological resources, and economic and fiscal impacts. Mitigation measures, best management practices (BMP), and compliance with federal, state, and local requirements would minimize these adverse effects. No adverse effect on minority communities, low-income communities, or non-minority communities within the community analysis study area would occur. Effects related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures; however, minority communities, low-income communities, and non-minority communities are not located within Malabar Yard study area where the Malabar Yard railroad improvements would be implemented. Based the location of minority communities, low-income communities, and non-minority communities relative to the Malabar Yard study area, potential roadway hazards from vehicle queuing along Seville Avenue and the associated transportation, safety and security, and impacts on community facilities would primarily be experienced by the traveling public and people who work in the City of Vernon, which includes both populations that are and are not minority and/or low-income. The potential adverse effects related to transportation, safety, and community facilities would not be predominantly borne by a minority community, a low-income community, or a non-minority community, nor would they be appreciably more severe or greater in magnitude than adverse effects on non-minority or low-income communities; or vice-versa.	*Construction* **MY TR-1 Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2 Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3 Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY AQ-1 Fugitive Dust Control** **MY AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment** **MY BIO-1 MBTA species** **MY BIO-2 Protected Trees** **MY HWQ-1 Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements** **MY HWQ-2 Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements** **MY HWQ-3 Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements** **MY HWQ-4 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements** **MY HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)** **MY HAZ-2 Prepare Phase II ESA** **MY HAZ-3 Prepare a General Construction Soil Management Plan** **MY HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP)** **MY HAZ-5 Halt Construction Work if Potentially Hazardous Materials are Encountered** **MY HAZ-6 Pre-Demolition Investigation**	Adverse effects would not be predominantly borne by a minority community, a low-income community, or a non-minority community, nor would there be adverse effects that are appreciably more severe or greater in magnitude on a minority community, a low-income community, or a non-minority community

Table 3.15-18. Potential Impacts Resulting from Malabar Yard Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		MY GEO-1 **Prepare Final Geotechnical Report** **MY CUL-1** **Archaeological Treatment Plan (ATP)** **MY PAL-1** **Paleontological Mitigation Plan (PMP)** **MY PAL-2** **Paleontological WEAP Training** **MY PAL-3** **Curation** *Operation* **MY TR-3** **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY TR-4** **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5** **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)** **MY TR-6** **Obtain Required Approvals for At-Grade Railroad Crossings** **MY HWQ-5** **Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements** **MY GEO-1** **Prepare Final Geotechnical Report**	
Section 3.17, Section 4(f)			
Use of Section 4(f) resources (permanent use, temporary occupancy, constructive use)	The Section 4(f) determination for the Malabar Yard railroad improvements is that no Section 4(f) use would occur for the National Register of Historic Properties-eligible Solar Manufacturing Corporation Building in Vernon, California. No direct or indirect impacts that could result in a permanent incorporation, temporary occupancy, or constructive use of this property have been identified and the improvements do not hinder the preservation of the property. Therefore, no use of this resource would be required to implement the Malabar Yard railroad improvements, and no further analysis is required. On November 20, 2023, the State Historic Preservation Officer (SHPO) concurred with the findings and conclusions outlined in the *Link US Finding of Effect Report* (Appendix M of the Link US EIS).	No Mitigation Measures are required.	No Use

Notes:

ACM=asbestos-containing materials; ATP=Archaeological Treatment Plan; BMP=best management practice; CARB=California Air Resources Board; CBC=California Building Code; CCR=California Code of Regulations; CDFW=California Department of Fish and Wildlife; CFR=Code of Federal Regulations; CGP=construction General permit; CO2e=carbon monoxide equivalent; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; GHG=greenhouse gas; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; IGP=Industrial General Permits; LBP=lead-based paint; LID=low impact development; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RWQCB=Regional Water Quality Control Board; SCAQMD=South Coast Air Quality Management District; SHPO=State Historic Preservation Officer; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; V/C=volume-to-capacity; VOC=volatile organic compound; WEAP=worker environmental awareness program

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3.16 Cumulative Effects

This section provides an evaluation of cumulative effects that may result upon implementation of the Build Alternative and Malabar Yard railroad improvements, pursuant to the requirements of NEPA and CEQ guidance.[1]

3.16.1 Regulatory Framework

There are several laws, regulations, and orders germane to the assessment of cumulative impacts for the Build Alternative and Malabar Yard railroad improvements summarized below. General NEPA requirements for assessment and disclosure of environmental impacts are described in Section 3.1, Introduction, of this EIS and are therefore not restated in this section. However, this section does describe NEPA requirements specific to the cumulative effects analysis.

NEPA (42 United States Code § 4321 et seq.; 40 Code of Federal Regulation Part 1500–1508)

Cumulative effects are defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or persons undertakes such other actions (40 CFR 1508.7). Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Additionally, CEQ guidance addressing implementation of cumulative effects analyses, *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997), recommends that the cumulative effects analysis include the following steps in scoping those impacts that are worthy of analysis in an EIS:

- Step 1: Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
- Step 2: Establish the geographic scope for the analysis.
- Step 3: Establish the timeframe for the analysis.
- Step 4: Identify other actions affecting the resources, ecosystems, and human communities of concern.

[1] The CEQ has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

On May 26, 1999, the FRA released *Procedures for Considering Environmental Impacts* (FRA 1999).[2] These FRA procedures state that an EIS should focus on areas of significant impact: beneficial and adverse, including possible cumulative effects.

National Historic Preservation Act (54 United States Code Section 300101, et seq.) including Section 106 of the NHPA, 54 United States Code Section 306108

The regulations implementing Section 106 of the NHPA acknowledge that a project's adverse effects include any that are reasonably foreseeable, even if they may occur later in time, are farther removed in distance, or are cumulative. The consideration of indirect and cumulative effects is required when applying the criteria of adverse effects on historic properties (36 CFR 800.5(a)(1)) and delineating the APEs (36 CFR 800.16(d)) as part of the Section 106 process.

Clean Water Act (33 United States Code § 1251 et seq.)

Section 404 of the CWA requires the assessment of potential cumulative effects on jurisdictional waters of the U.S., including special aquatic sites protected by Section 404 of the CWA, which are under the jurisdiction of the USACE and the U.S. EPA

Federal Endangered Species Act (15 United States Code § 1531)

The Federal Endangered Species Act (Section 7) defines cumulative effects in a manner that is narrower than NEPA or CEQA by providing that cumulative effects are those effects of future state or private activities not involving federal activities that are reasonably certain to occur within the action area that is subject to consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, or both.

3.16.2 Methods for Evaluating Cumulative Effects

There are several steps involved in the cumulative effects analysis. The initial steps involve analyzing direct and indirect impacts, followed by the application of those results to cumulative effects. These steps are generally outlined below:

- Establish the geographic scope for the analysis used to analyze Project-level and cumulative effects and determine the appropriate scale for analysis—localized and/or regional.
- Characterize the topics relevant to the resource issue areas considered.

[2] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

- Identify and evaluate the cumulative effects of the past, present, and reasonably foreseeable projects (subsequently referred to as cumulative projects) in the cumulative RSA without the Build Alternative and Malabar Yard railroad improvements.
- Identify the cumulative condition considering past, present, and reasonably foreseeable development combined with the Build Alternative and Malabar Yard railroad improvements, and the growth that would continue within the county.
- Identify the effects associated with the Build Alternative and Malabar Yard railroad improvements. If there are no direct or indirect effects of the Build Alternative and Malabar Yard railroad improvements on a resource or discipline area, then there cannot be any cumulative effects.
- Determine the context and intensity of cumulative condition without the Build Alternative and Malabar Yard railroad improvements to the condition with the Build Alternative and Malabar Yard railroad improvements The analysis results are based on the effects disclosed for each resource issue area as presented in Sections 3.2 through 3.15 of this EIS.
- For cumulative effects that are considered adverse, identify the project's incremental contribution.
- Identify potential mitigation measures for potential cumulative effects. Potential mitigation measures could include measures that would avoid or minimize cumulative effects, as well as direct and indirect Project-related effects.

The Build Alternative has several components, including a reconstructed throat and elevated rail yard, new expanded passageway, and 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 effects from other planned and approved projects were analyzed at a localized scale corresponding to the applicable geographic area used for each respective resource issue area (Table 3.16-1).

The regional cumulative effects analysis considers SCAG's 2020 RTP/SCS Program EIR, which identifies the Project and several other regional transportation investments. These projects could result in cumulative operational impacts throughout the regional transit network.

Table 3.16-1. Cumulative Geographic Area by Environmental Factors

Resource Topic	Cumulative Geographic Area	Localized Impacts[a]	Regional Impacts[b]
Land Use and Planning	Los Angeles County and SCAG regional planning area	Yes	Yes
Transportation	Project study area, Malabar Yard study area, traffic analysis zones, and SCAG regional planning area	Yes	Yes

Table 3.16-1. Cumulative Geographic Area by Environmental Factors

Resource Topic	Cumulative Geographic Area	Localized Impacts[a]	Regional Impacts[b]
Visual Quality and Aesthetics	Project study area and Malabar Yard study area	Yes	No
Air Quality and Global Climate Change	SCAB and statewide	Yes	Yes
Noise and Vibration	Project study area, Malabar Yard study area, and SCAG regional planning area	Yes	Yes
Biological and Wetland Resources	BSA	Yes	No
Floodplains, Hydrology, and Water Quality	Project study area, Malabar Yard study area, and Los Angeles River watershed	Yes	Yes
Geology, Soils, and Seismicity	Project study area and Malabar Yard study area	Yes	No
Hazardous Waste and Materials	Project study area, Malabar Yard study area, and Environmental Database Record study area	Yes	No
Public Utilities and Energy	Project study area, Malabar Yard study area, and SCAG regional planning area	Yes	Yes
Cultural and Paleontological Resources	APE and RSA	Yes	No
Economic and Fiscal Impacts	County of Los Angeles, Project study area and Malabar Yard study area	Yes	Yes
Safety and Security	Project study area and Malabar Yard study area	Yes	No

Table 3.16-1. Cumulative Geographic Area by Environmental Factors

Resource Topic	Cumulative Geographic Area	Localized Impacts[a]	Regional Impacts[b]
Socioeconomics and Communities Affected	Socioeconomic planning area	Yes	No
Community Analysis	Community analysis study area	Yes	Yes

Notes:
[a] Localized cumulative impacts would be generally confined to the Project study area (and Project footprint for the build alternative), or Malabar Yard study area. Cumulative impacts would occur during construction and operation.
[b] 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.
APE=Area of potential effects; BSA=biological survey area; SCAB=South Coast Air Basin; SCAG=Southern California Association of Governments.

3.16.3 Affected Environment

The cumulative context includes the geographic area, timeframe, and/or type of projects or planning activities that would contribute to potential cumulative effects.

Geographic Area

As provided in Table 3.16-1, each environmental topic identifies a relevant geographic area for analysis of cumulative effects. The geographic range considered for the cumulative effects 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 effects analysis extends beyond the limits of the Project study area (e.g., to consider impacts at a watershed scale), this fact is noted.

Historical Context

Section 3.12, Cultural and Paleontological Resources, provides an overview of the history of development within the cities of Los Angeles and Vernon. The first Europeans arrived in 1769 to establish settlements in the region. By the early 1840s, the number of Anglo-American settlers in the area had increased considerably and created pressure for California to be admitted to the U.S. as a state in 1850 (Prosser 2016). 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.

Rapid growth in Los Angeles County continued during World War II and into the post-war era. In fact, most of the county's growth occurred in the post-war years. After World War II, the city of Los Angeles grew rapidly, sprawling into the San Fernando Valley. Growth in the region has slowed since the 2000s. As discussed in Section 3.15, Socioeconomics and Communities

Affected, the County and City of Los Angeles experienced population growth between 2010 and 2021. The net population change from 2010 to 2022 is 2.0 percent and 2.9 percent for the County of Los Angeles and the City of Los Angeles, respectively. The socioeconomic planning area experienced population growth of 28.2 percent between 2010 and 2021.

Population growth and historic development has converted the region from a rural environment to an urban, built-out environment that has resulted in widespread impacts such from previous infrastructure and land development projects, increased traffic congestion from increased population growth, worsening of air quality to below state and federal standards, increased noise levels from denser development, polluted surface and groundwater, increased stormwater runoff, declining groundwater levels, loss of biological diversity and habitat, and increased social and economic growth and diversity.

Cumulative Projects

Table 3.16-2 presents the projects considered as part of the localized and regional cumulative effects analysis. In compiling the cumulative project list, analysts researched past, present, and reasonably foreseeable future actions in the cumulative geographic area by affected jurisdiction via a search of publicly available documents and resources, including conducting an internet search of projects, plans, and proposals. Additionally, State, regional, and local planning documents were reviewed and considered as part of the cumulative effects analysis in this EIS. The cumulative effects analysis defines cumulative projects as those likely to occur within the 2040 horizon year and considers planned development within the cities of Los Angeles and Vernon. Specifically, this analysis considers reasonably foreseeable development, transportation and transit projects located within 0.5 miles of the Build Alternative and Malabar Yard railroad improvements. These projects were selected because they could result in impacts on resources that would also be affected by the Project.

For the purposes of this cumulative effects analysis, the other planned transit and land development projects that may have a cumulative effect on resources considered in this EIS are referred to as the “cumulative projects.” The cumulative effects analysis addresses the potential incremental contributions of the Project in combination with cumulative projects.

At a regional scale, the adopted 2020 RTP/SCS identifies projects that may contribute to cumulative effects throughout the SCAG region and provides a programmatic environmental analysis of the identified projects. Since the Project is identified as a key project in the RTP/SCS (a transit priority project), the Program EIR prepared for the 2020 RTP/SCS was considered to both characterize and analyze cumulative conditions within Los Angeles County and the broader SCAG region for 2040 as part of this Project-specific cumulative effects analysis. 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 Chapter 3.0, Affected Environment and Environmental

Consequences, the Project-specific analysis of direct effects already addresses potential cumulative effects (i.e., Traffic, Air Quality and Global Climate Change, and Noise and Vibration).

3.16.4 Environmental Consequences

The following section discusses the potential for the Project to result in cumulative effects (prior to and after implementation of mitigation) when combined with other cumulative projects identified in Table 3.16-2 for each of the resource issue areas evaluated in Chapter 3.0, Affected Environment and Environmental Consequences. For each cumulative project identified in Table 3.16-2, the resource topic that the specific project may contribute cumulative effects toward is noted. The locations of cumulative projects are shown locally on Figure 3.16-1 and regionally on Figure 3.16-2.

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Table 3.16-2. Link Union Station Cumulative Projects

	Project Title	Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
1	Metro Center Street Project - ESOC	Public services	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	Land use, socioeconomics and communities, safety and security,	Under construction, operational in 2023
2	Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system	Transit	CHSRA is planning for the introduction of the HSR system from San Francisco to the Los Angeles basin by 2033. As discussed in Chapter 2.0, Alternatives and Design Options Considered, the planned HSR system is accommodated in this EIS. In March 2022, CHSRA issued a Final Record of Decision for the Burbank to Los Angeles Project Section of the planned HSR system. 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 Link US EIS 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	Transportation, air quality, noise and vibration, safety and security, land use, aesthetics and visual quality, noise, cultural resources	Sometime between 2033 and 2035
3	Metro Division 20 Portal Widening and Turnback Facility Project	Transit	To accommodate increased service levels on the Metro Red/Purple Lines, Metro 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.	Division 20 Rail Yard	Transportation, public utilities, land use, air quality	Under construction, operations in 2024
4	Regional Connector Project	Transit	The Regional Connector Project consists of an extension of the Metro Gold line from the Little Tokyo/Arts District Station to the 7th Street/Metro Center Station. This extension would allow riders to connect to the Metro Red/Purple lines without having to switch stations. Development includes three new stations including one located on the southeast corner of First Street and Central Avenue.	LAUS, First Street and Central Avenue	Transportation, public utilities, land use, air quality	In service 2023[b]
5	Care First Village Phase 2	Public services	The Hilda L. Solis Care First Village, located at 1060 N. Vignes Street, includes 232 beds for unhoused residents and on-site supportive services in a series of buildings ranging between one and three stories in height. The facility opened in April 2021. The site was the previous location for a parking garage serving Men's Central Jail. However, a 2019 vote by the Board of Supervisors abandoned a $1.7-billion plan to replace the jail with a new facility geared towards mental health treatment, leaving the property open for redevelopment. Plans are in place for an expansion of the Care First Village facility onto a triangular property to the north where the California Drop Forge business operated prior to relocating in 2022.	1060 North Vignes Street	Socioeconomics and communities, land use	Planning phase
6	Metro Los Angeles River Path Project	Pedestrian and bicycle	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 is a planned bicycle and pedestrian project along an 8-mile stretch of the Los Angeles River from Elysian Valley through Downtown Los Angeles to the City of Maywood.	32-mile Los Angeles River. Affects the reach 3 parallels in the Project study area.	Socioeconomics and communities, land use, biological resources, transportation	Environmental phase; completion in 2027

Table 3.16-2. Link Union Station Cumulative Projects

Project Title		Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
7	Park 101	Park	Park 101 is a planned project of the City of Los Angeles and seeks to create approximately 4 acres of urban park neighborhood. The project envisions the "capping" of US-101 in Downtown Los Angeles with a multi-purpose park that will include playgrounds, seating, festival areas, and a plaza. The approximately four-block cap park will reconnect the two sections of Downtown that have long been separated by the freeway, greatly enhancing the currently noisy, with much-needed shade and green space.	LAUS and surrounding area near US-101	Noise and vibration, transportation, air quality, visual and aesthetic resources, biological resources	Project study report to be completed in 2024. Completion scheduled for 2035, dependent on funding.
8	Purple Line Extension (Sections 1, 2, and 3)	Transit	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/Veterans Affairs Hospital	Transportation, air quality, land use	Section 1 planned service – 2024 Section 2 planned service – 2025 Section 3 planned service – 2027
9	Metro WSAB Transit Corridor	Transit	The Metro WSAB Line is a proposed 19-mile light-rail transit line 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	Transportation, air quality, land use	Construction pending; dependent on funding In service by 2041
10	Metro *Connect US Action Plan* and Eastside Access Improvements (formerly Los Angeles Union Station and First/Central Linkages Study)	Pedestrian and bicycle	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	Socioeconomics and communities, land use, transportation	Construction began in 2022 In service date to be determined
11	Mixed-use development	Mixed-use development	The project includes the construction of 247 condominium units and 10,675 square feet for retail use.	745 Spring Street	Transportation, public utilities, land use, air quality	Planning/design
12	Eighth/Hope/Grand Project	Mixed-use development	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.	745 South Hope Street	Cultural resources, public utilities, air quality, transportation, land use	Planning/design; construction to begin in 2024; completion post-2027
13	Kawada Tower	Mixed-use development	The project includes the construction of 330 condominium units and 12,000 square feet for retail use.	250 South Hill Street	Cultural resources, public utilities, air quality, transportation, land use	Planning/design, construction date TBD.
14	Barlow Hospital Replacement and Master Plan	Public services	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	Hazardous materials and waste, socioeconomics and communities, air quality, transportation	Planning/design, construction date TBD

Table 3.16-2. Link Union Station Cumulative Projects

Project Title		Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
15	Camden Arts	Mixed-use development	The project includes the construction of 344 live/work units, 25,000 square feet for retail use, and 4,000 square feet for restaurant use.	1525 Industrial Street	Cultural resources, public utilities, air quality, transportation, land use	Demolition of existing building completed in 2021. Currently in planning/design
16	Mixed-use development	Mixed-use development	The project includes the construction of 247 residential units and 8,000 square feet for retail use.	700 Cesar Chavez Avenue	Cultural resources, public utilities, air quality, transportation, land use	Planning/design, construction date TBD
17	Equity Residential	Mixed-use development	The project includes construction of 428 apartment units and 5,610 square feet for commercial use.	340 Hill Street	Cultural resources, public utilities, air quality, transportation, land use	Construction prep, completion date TBD
18	520 Mateo	Mixed-use development	The project includes construction of 475 live/work units, 105,000 square feet for office use, and 18,000 square feet for commercial use.	520 Mateo Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
19	Sapphire	Mixed-use development	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	Cultural resources, public utilities, air quality, transportation, land use	Planning/design, construction date TBD.
20	Alexan South Broadway	Mixed-use development	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	Cultural resources, public utilities, air quality, transportation, land use	Preconstruction
21	Stanford Regency Project	Mixed-use development	The Stanford Regency consists of a 400,000-square-foot mixed-use project located in Downtown Los Angeles. The project will contain 132 condominiums on three above-ground levels with four subterranean levels for commercial use, primarily for wholesale garment businesses, restaurants, and a grocery store. Stanford Regency Plaza also features an open courtyard area.	810 Pico Street	Cultural resources, public utilities, air quality, transportation, land use Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
22	The City Market	Mixed-use development	The project includes construction of 948 apartment units, 210-room hotel, a 300,000-square-foot educational institution, and 225,000 square feet of commercial space that could be dedicated to shops, restaurants, and a multiplex theater.	1057 San Pedro Street	Cultural resources, public utilities, air quality, transportation, land use	Project is expected to be built out over a 25-year period (through 2040)
23	939 and 955 S. Broadway	Mixed-use development	The 939 Broadway project includes conversion of an existing vacant building into a 160-unit residential complex with seven ground-floor retail stalls. 955 Broadway, which is now a surface parking lot at the street's intersection with Olympic Boulevard, would become a 15-story, 185,000 square foot mixed-use tower with approximately 185 units.	939/955 S. Broadway	Cultural resources, public utilities, air quality, transportation, land use	Preconstruction
24	Mixed-use development	Mixed-use development	The project includes construction of 40,000 square feet for retail use and 243,000 square feet for office use.	2030-2060 E. 7th Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
25	Rendon Hotel Project	Mixed-use development	The project includes a one-story addition to an existing three-story hotel building and the new construction, use, and maintenance of an attached 15-story hotel building with 103 guest rooms with approximately 15,907 square feet of commercial space comprised of art gallery, café, restaurant and bar uses	2053 – 2059 East 7th Street	Public utilities, transportation, visual and aesthetic resources	Under construction, completion date TBD

Table 3.16-2. Link Union Station Cumulative Projects

Project Title		Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
26	Bixel Residences	Mixed-use development	The project includes construction of 422 apartment units, 126 hotel rooms, 13,000 square feet of associated indoor resident amenities, expansive pool and rooftop viewing decks, and 5,600 square feet for retail use.	675 Bixel Street/ 1111 Seventh Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
27	LUXE City Center Hotel Mixed-use Project	Mixed-use development	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)	Cultural resources, public utilities, air quality, transportation, land use	Phase 1 operational. Opening for Phase 2 in 2023
28	Metrolink 2015-2035 Strategic Plan Operations[a]	Transit operations plan	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	Transportation, land use	Operational in 2035
29	Metro LAUS Forecourt and Esplanade Improvements Project	Pedestrian and bicycle	The LAUS Forecourt and Esplanade Improvements 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	Safety and security, transportation, socioeconomics and communities, land use, cultural resources	Advertising construction bid, in operation by 2025-2026
30	College Station	Mixed-use development	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	Cultural resources, public utilities, air quality, transportation, land use	Under construction, anticipated completion in 2023
31	Crenshaw/LAX Transit Project	Transit	The Crenshaw/LAX Transit Project would establish a line from the existing Metro Exposition Line at Crenshaw/Exposition Blvd, 8.5 miles, to the Metro Green Line servicing cities of Los Angeles, Inglewood, El Segundo, and portions of unincorporated Los Angeles County. This line would enable riders to access LAX through easier connections to the entire Metro Rail system, municipal bus lines, and other regional transportation services.	LAX	Transportation	Under construction, two remaining stations schedule to open in 2023 and 2024

Table 3.16-2. Link Union Station Cumulative Projects

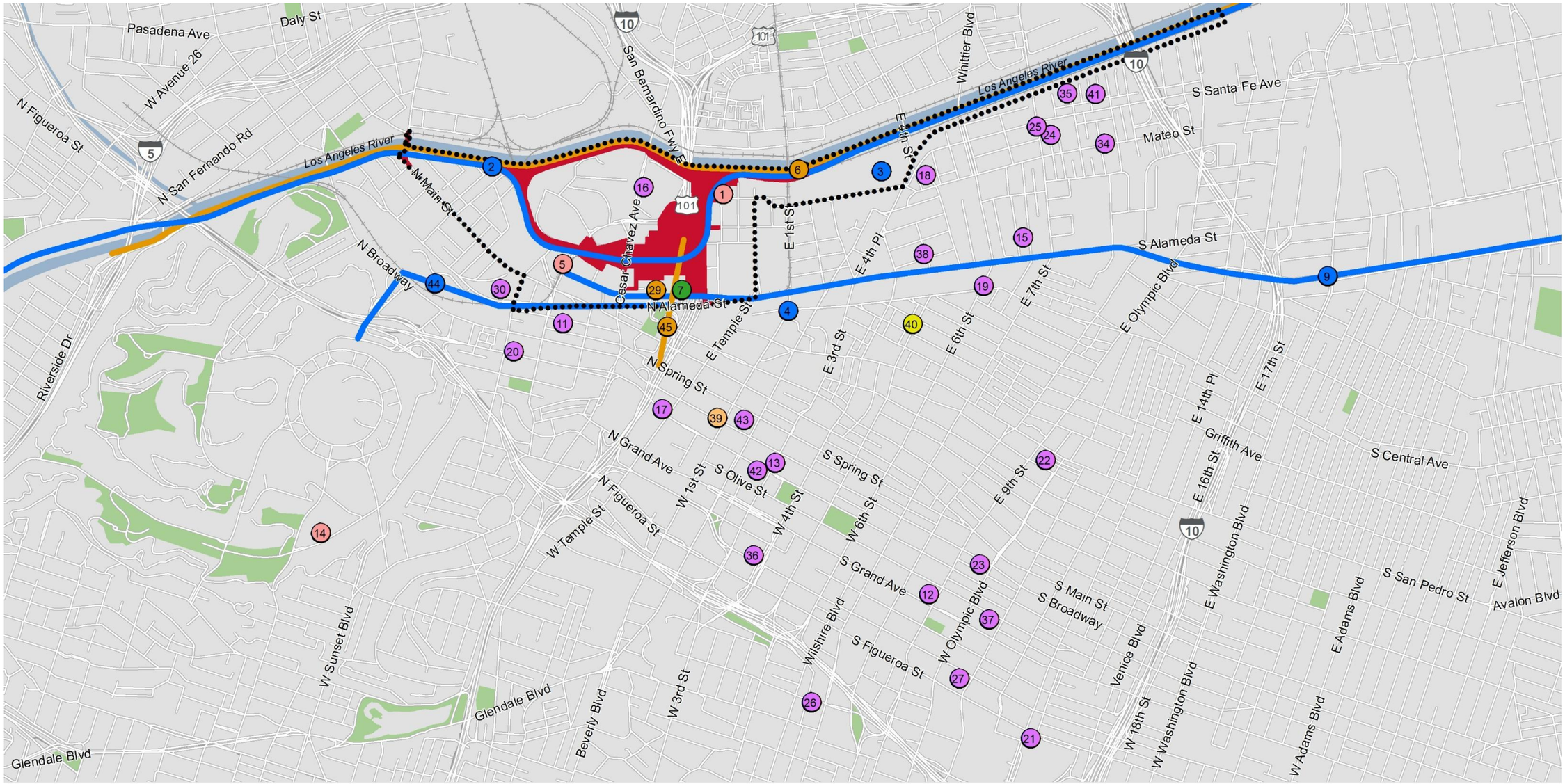
	Project Title	Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
32	Los Angeles World Airport Automated People Mover Project	Transit	The Los Angeles World Airport Automated People Mover Project would create an electric train system with a total of six stations (three inside the Central Terminal Area and three outside) to transport people around the airport area. During peak hours, the Automated People Mover would run nine trains, each capable of carrying 200 passengers. Train frequency during peak hours is expected to be every two minutes. In addition to a reduction of traffic in and around the LAX area, there would also be a reduction in the airport area's carbon footprint.	LAX	Transportation	Construction began 2019; Anticipated in service by 2023
33	Airport Metro Connector Project–96th Street Transit Station	Transit	The Airport Metro Connector Project would consist of a new transit station that would connect the LAX to the regional transit system. This station would connect the Metro Green Line and Crenshaw/LAX Line with LAX's Automated People Mover.	LAX	Transportation	Construction began 2021; Anticipated in service 2024
34	1024 Mateo Project	Mixed-use development	The Project includes the demolition of the surface parking lot and the 16,960 square-foot maintenance service building; and the construction, use and maintenance of a single 257,287 square-foot mixed-use building containing a total of 106 live/work condominium units and approximately 119,843 square feet of commercial space, including 13,978 square feet of retail space, 13,126 square feet of restaurant space, and 92,740 square-feet of office space.	1024 Mateo Street	Hazardous materials and waste, public utilities, air quality, transportation, land use, noise and vibration	Under construction, completion date TBD
35	2143 Violet Street	Mixed-use development	The project includes a new mixed-use development that includes 347 live-work units, very low-income households, 187,374 square feet of office space, 21,858 square feet of commercial floor area, and 925 square foot community room. The uses would be located in a 36-story residential tower and an eight-story office building.	2143 Violet Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
36	350 South Figueroa Project	Mixed-use development	The Project includes the proposed demolition of an approximately 29,500-square-foot portion of an existing office and commercial structure and construction of a new, 41-story residential building integrated into the existing structure. The Project would add approximately 624,500 square feet of new residential floor area at the southwest corner of the Project site for a combined 925,000 square feet of floor area. The residential building would be a maximum of 480 feet in height and contain 570 residential units.	350-356 South Figueroa Street, 830 West Third, 825 West Fourth Street, and 333-361 South Flower Street	Hazardous materials and waste, public utilities, air quality, transportation, land use, noise and vibration	Planning/Design
37	1045 Olive Project	Mixed-use development	Mixed-use high-rise development includes up to 794 residential units and 12,504 square feet of ground-floor commercial uses.	1033-1057 S. Olive Street	Cultural resources, public utilities, air quality, transportation, land use	Approved. Anticipated operation in 2025.
38	Arts District Center Project	Mixed-use development	The Project includes the demolition and removal of all existing uses on the Project Site, and development of a new mixed-use building, including 129 live/work condominium units, a 113-room hotel, and 81,326 square feet of commercial space to be used for art galleries, retail, restaurant, and artist collaborative space.	1101 East 5th Street, 1129 East 5th Street, 445-457 South Colyton Street, 450-456 South Seaton Street	Cultural resources, public utilities, air quality, transportation, land use	Planning/Design
39	1st and Broadway Civic Center Park Project	Commercial development	Construction of a 1.96-acre park and new two-story, approximately 19,200 square foot restaurant.	126 North Broadway	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
40	713 East 5th Street	Residential development	Construction of a new residential building on a 5,506-square-foot site would include 51 residential units	713-717 ½ East 5th Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD

Table 3.16-2. Link Union Station Cumulative Projects

	Project Title	Project Type	Project Description	Location	Potential Contributions to Cumulative Impacts	Stage/Schedule
41	2110 Bay Street Mixed-Use Project	Mixed-use development	The Project proposed a new residential and commercial development Including 110 live/work apartment units (67 studio units, 34 1-bedroom units, and 9 2-bedroom units), 113,350 square feet of creative office space, and 50,848 square feet of new commercial space that may include commercial retail, and/or restaurant floor area	2110 Bay Street	Cultural resources, public utilities, air quality, transportation, land use	Under construction, completion date TBD
42	Angels Landing Project	Mixed-use development	Project proposes 180 residential for-sale condominium units, 261 residential apartments (including a mix of market rate and affordable units), two hotels with a combined total of 509 guest rooms and ancillary food and beverage spaces, 38,977 square feet of educational/cultural/civic uses, and 36,515 square feet of commercial space.	361 S. Hill Street (332-358 S. Olive Street, 351-361 S. Hill Street, 417-425 W. 4th Street)	Cultural resources, public utilities, air quality, transportation, land use	Approved. Planning/Design
43	Times Mirror Square Project	Mixed-use development	New mixed-use development and rehabilitate the Times, Plant, and Mirror Buildings on the approximately 3.6-acre city block bounded by W. 1st Street, S. Spring Street, W. 2nd Street, and S. Broadway Street consisting of the 37-story “North Tower” and 53-story “South Tower” with a maximum of 1,127 residential units and up to 34,572 square feet of commercial floor area.	121, 145, 147 S. Spring Street; 100, 102, 106, 108, 110, 118, 120, 124, 126, 128, 130, 140, 142 S. Broadway; 202, 212, 214, 220, 224, 228, 230, 234 W. 1st Street; 205, 211, 221 W. 2nd Street	Cultural resources, public utilities, air quality, transportation, land use	Approved. Planning/Design
44	Metro Los Angeles Aerial Rapid Transit Project	Transit	The project would connect LAUS to the Dodger Stadium property, Los Angeles State Historic Park and Elysian Park via an aerial gondola system in downtown Los Angeles.	LAUS to Dodger Stadium via Alameda Street, Spring Street, and Bishops Road	Land use, public utilities and energy, transportation, visual and aesthetic resources	Environmental phase
45	Metro Alameda Street Mobility Project	Pedestrian and bicycle	Following implementation of the LAUS Forecourt and Esplanade Improvements Project, the Alameda Street Mobility Project was initiated to develop strategies to close the Alameda Street gap between Commercial and Arcadia Streets. The goal of the project is to improve safety, access and comfort for those that walk, bike or roll; improve mobility and safety of the local roadway and freeway and accommodate transit connections to Union Station.	Alameda Street, between Commercial Street and Arcadia Street	Safety and security, transportation	Planning/Design
46	Vernon Westside Zone Change and Plan Amendment [b]	Plan amendment	The Project would reinvigorate the City’s competitive advantage as a center of production; strengthen and provide long-term stability to the City’s fiscal position; increase the residential population; diversify and reorient the land uses in the Project Area to take advantage of changes in the economic landscape of Southern California; increase amenities available to local residents and workers; and create a physical environment that is supportive of diverse land uses, welcoming to the larger region, and enhancing to the City’s image and identity.	27th Street, Seville Avenue, Slauson Avenue, and Alameda Corridor	Land use	Final Program EIR certified July 18, 2023
47	1591 E. Vernon Ave Apartments	Residential development	Construction of a five-story edifice featuring 23 studios, one-, two-, and three-bedroom apartments.	1591 E. Vernon Ave	Cultural resources, public utilities, air quality, transportation, land use	Construction date TBD
48	Rail to Rail/River Active Transportation Corridor	Pedestrian and Bike	Metro’s plan includes complete streets that are safer for everyone. Segment B of the Rail to River project is a biking and walking path connecting Slauson Station to the LA River, improving active transportation options, connections to transit and creating access to opportunity. Segment A connects east to the future Fairview Heights Station.	Gateway Cities, South Bay Cities	Transportation	Segment A under construction. Completion date TBD

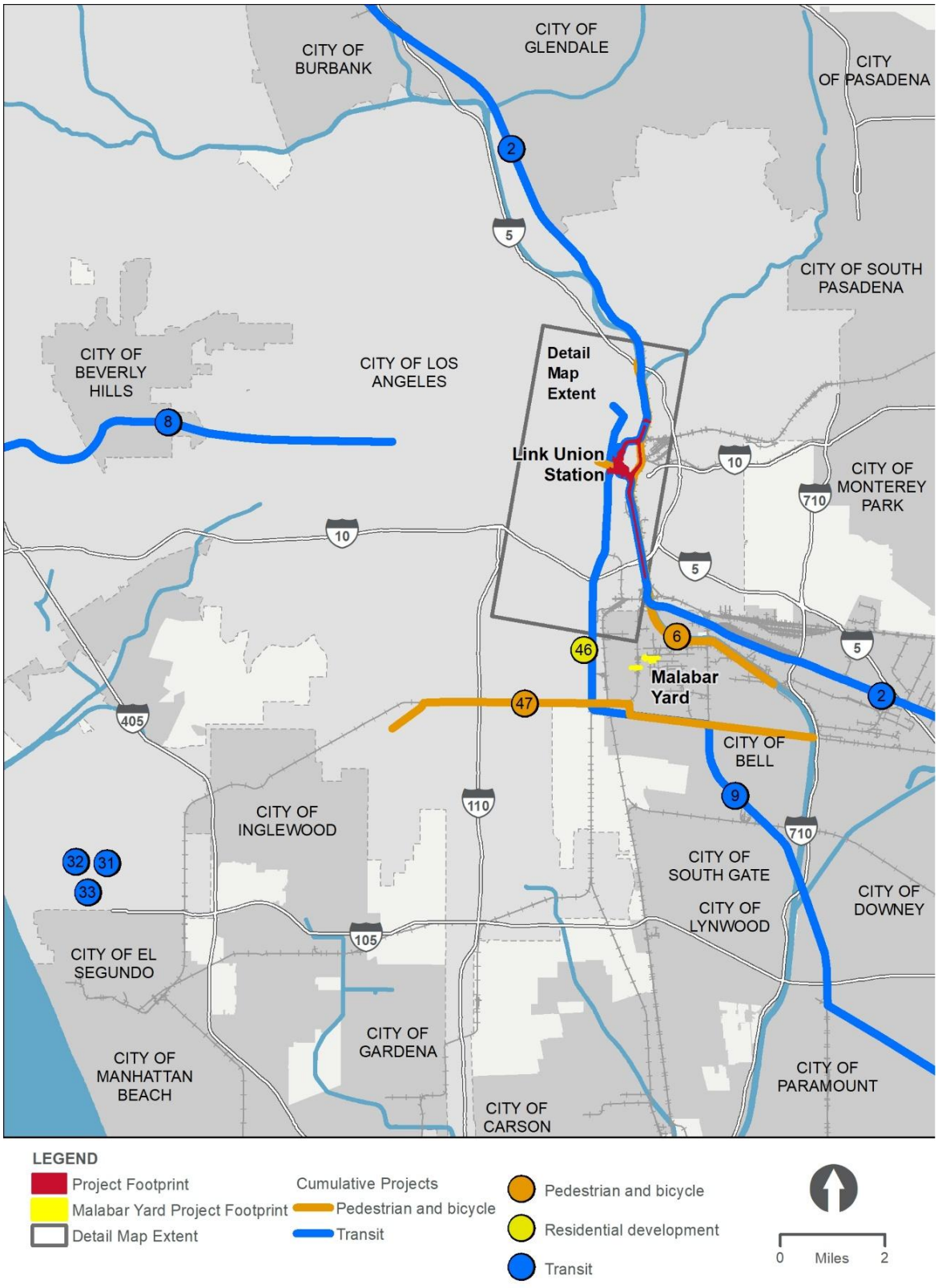
Sources: Link US Alternatives Evaluation Memorandum (Appendix D of this EIS); City of Los Angeles 2012, 2021; Metro 2022, 2023; Urbanize Los Angeles 2020
Notes:
[a] The Regional Connector Project is in-service as of June 16, 2023. This project is not included in the cumulative condition of this cumulative effects analysis because the project was completed during development of this EIS.
[b] Project implementation is planning area wide and are therefore not shown on Figure 3.16-1 or Figure 3.16-2
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; LAX=Los Angeles Airport; Link US=Link Union Station; Metro=Los Angeles County Metropolitan Transportation Authority; ROW=right-of-way; VA=Veterans Administration; WSAB=West Santa Ana Branch EIS/SEIR

Figure 3.16-1. Local Cumulative Projects



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Figure 3.16-2. Regional Cumulative Projects



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Land Use and Planning

Geographic Area

The cumulative geographic area for evaluating effects associated with land use and planning is Los Angeles County, and generally consists of dense, developed urban areas. This area includes the planning areas for the municipalities in which the Build Alternative, Malabar Yard railroad improvements are located (Cities of Los Angeles and Vernon), and where other planned cumulative projects are located. It also includes the incorporated cities and planning agencies that are considered as part of the regional planning efforts by SCAG.

Cumulative Condition

Under the cumulative condition, ongoing growth trends within the cumulative geographic area would continue which would result in temporary and permanent changes in land use patterns. This would include the conversion of land to transportation, commercial, and other uses as parcels of land are redeveloped within dense urban areas, which could result in the potential for disruptions or conflicts in land use patterns or potential land use compatibility effects.

Construction and operation of reasonably foreseeable planned transit and development projects listed in Table 3.16-2 could result in impacts that would temporarily affect current land use functions by introducing impacts from noise, dust, and traffic congestion, or by dividing communities. Some cumulative projects, like the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2) could permanently alter land use patterns or permanently convert land to transportation or other uses. These cumulative projects, combined with the Build Alternative and Malabar Yard railroad improvements, constitutes the cumulative condition for land use and planning.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Alteration of Land Use Patterns and Compatibility with Existing or Planned Land Uses/Physical Division of an Established Community

Construction

Construction of the Build Alternative and the Malabar Yard railroad improvements would result in temporary changes in land use patterns; however, none of the areas where TCEs are proposed would alter land use patterns in a manner that would render the properties unusable. No adverse effect would occur. Therefore, construction of the Build Alternative and Malabar Yard would not cause an adverse cumulative effect related to land use conversions when combined with other cumulative projects in the cumulative geographic area.

Construction activities may cause temporary incompatibilities with surrounding land uses (road detours, potential increases in light and glare, noise and vibration, and air quality emissions from construction activities). Prior to implementation of mitigation, effects related to land use

compatibility would be adverse. Several planned transit and development projects within the cumulative geographic area may have construction schedules that overlap with the Build Alternative and the Malabar Yard railroad improvements, including the Metro LAUS Forecourt and Esplanade Improvements Project (#29) and the Metro *Connect US Action Plan* and Eastside Access Improvements (formerly Los Angeles Union Station and First/Central Linkages Study) (#10). The Build Alternative and Malabar Yard railroad improvements in conjunction with the other cumulative projects may contribute to effects on residents and businesses in the Project study area related to road detours, potential increases in light and glare, noise and vibration, and air quality emissions from construction activities throughout the duration of construction, which, in some instances, could last longer than 12 months (e.g., in staging areas). These impacts could include conflicts with surrounding land uses, such as increased air emissions and dust, noise or light and glare levels in areas adjacent to schools, residences, and other sensitive land uses. Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change), Mitigation Measure TR-1 (described in Section 3.3, Transportation), Mitigation Measure AES-2 (described in Section 3.4, Visual Quality and Aesthetics), and Mitigation Measures NV-2, and NV-3 (described in Section 3.6, Noise and Vibration) would be implemented to minimize adverse effects resulting from the Build Alternative and Malabar Yard Mitigation Measures AQ-1, AQ-2, and TR-1 (described in Appendix Q of this EIS), would be implemented to minimize adverse effects resulting from Malabar Yard railroad improvements. A brief description of these mitigation measures is summarized below.

- Mitigation Measure AQ-1 and Malabar Yard Mitigation Measure AQ-1 require regular watering or other dust preventive measures using procedures specified in SCAQMD Rule 403 to reduce daily fugitive dust emissions.

- Mitigation Measure AQ-2 and Malabar Yard Mitigation Measure AQ-2 require all on-site construction equipment greater than 50 horsepower 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.

- Mitigation Measure TR-1 and Malabar Yard Mitigation Measure TR-1 require the preparation and implementation of a TMP to maintain access and connectivity during temporary access restrictions on affected roadways.

- Mitigation Measure AES-2 requires the construction contractor to install temporary lighting in a manner that directs light toward the construction area and to install temporary shields as necessary so that light spill does not occur into residential areas.

- Mitigation Measure NV-2 requires implementation of noise- and vibration-reducing measures, including, but not limited to, constructing walled enclosures around loud activities, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets, and Mitigation Measure NV-3 requires implementation of a proactive Community Notification Plan to address community concerns related to potential noise and vibration impacts.

Implementation of these mitigation measures would minimize impacts from the Build Alternative and Malabar Yard railroad improvements that may result in conflicts with surrounding land uses. Therefore, construction of the Build Alternative and Malabar Yard would not cause an adverse cumulative effect related to land use compatibility when combined with other cumulative projects in the cumulative geographic area.

Operation

Infrastructure improvements associated with the Build Alternative and Malabar Yard would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and commercial and industrial land uses; however, the Build Alternative would result in the acquisition of several properties south of US-101, some with active commercial and manufacturing land uses, that would be converted into transportation-related uses. Implementation of other cumulative projects in the cumulative geographic area, such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the of the planned HSR system (#2), the mixed-use development on 700 Cesar Chavez Avenue (#16), Care First Village (#5), and the Arts District Center Project (#38), could also result in a change to existing land uses. No direct adverse effect would occur because land uses would be developed in accordance with the long-term vision for run-through tracks as outlined in the 2020 RTP/SCS. Therefore, operation of the Build Alternative and Malabar Yard would not cause an adverse cumulative effect related to land use conversions when combined with other cumulative projects in the cumulative geographic area.

Operation of the Build Alternative may cause incompatibilities with surrounding land uses (potential increases in light and glare, noise and vibration, and air quality emissions). Prior to implementation of mitigation, effects related to land use compatibility would be adverse. When considered together, cumulative effects may occur if elements of other cumulative projects, such as new sources of nighttime lighting, increased noise or vibration from an increase in frequency of passing trains, or new sources of exhaust emissions from roadways are incompatible with existing land uses, such as parks, schools, or residential areas. The greatest potential for a cumulative effect on the local noise environment would be the incremental addition of new regional/intercity rail service combined with the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2). As described in Section 3.6, Noise and Vibration, prior to implementation of mitigation, moderate and severe impacts (as defined by FTA criteria) would occur at William Mead Homes and Care First Village; thereby requiring construction of new noise walls up to 22 feet and 13 feet in height, respectively (see Mitigation Measure NV-1). As described in Section 3.4, Visual Quality and Aesthetics, prior to implementation of mitigation, an adverse effect would occur at Mozaic Apartments due to new sources of lighting and glare. Implementation of Mitigation Measures AES-1 and AES-3 (described in Section 3.4, Visual Quality and Aesthetics) and Mitigation Measure NV-1 (described in Section 3.2.6) would minimize the potential for adverse effects related to land use incompatibility. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to land use compatibility when combined with other cumulative projects in the cumulative geographic area.

As discussed in Section 3.2, Land Use and Planning, the Build Alternative would not divide any established community; therefore, it would not cause an adverse cumulative effect relating to the division of established communities.

Conflicts with Land Use Plan Policies or Local Land Use Controls

Construction

As discussed in Section 3.2, Land Use and Planning, Metro is authorized by the State of California to develop its property under its enabling legislation (AB 152) and Public Utilities Code 30631(a).[3] Construction of the Build Alternative and the accompanying Malabar Yard railroad improvements would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over proposed facilities and/or site conditions. This includes Metro's Green Construction Policy and other applicable federal, state, regional, and local plans and policies related to construction of new transit facilities and freight railroad improvements. Other cumulative projects in the cumulative geographic area would be required to be constructed in accordance with applicable policies to avoid or minimize conflicts with land use policies or local land use controls. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to conflicts with land use policies or local land use controls when combined with other cumulative projects in the cumulative geographic area.

Operation

Once in operation, the Build Alternative would generally be consistent with the federal, regional, state, and local land use plans, policies, and controls that encourage sustainable design of public facilities, expansion of existing transportation options, and increased rail service in Southern California. As described in more detail in Section 3.2.5, the Build Alternative is necessary to implement goals and objectives of multiple planning documents that guide future growth in rail operations. The Build Alternative would implement these goals and objectives by enhancing rail yard capacity of regional and intercity rail trains and providing interconnectivity to the planned HSR system. When combined with other planned transportation projects, such as the Metro LAUS Forecourt and Esplanade Improvements Project (#29), Metro *Connect US Action Plan* and Eastside Access Improvements (formerly Los Angeles Union Station and First/Central Linkages Study) (#10), Metro Purple Line Extension (Sections 1, 2, and 3) (#8) and the Metro WSAB Line Transit Corridor (#9), these projects would result in a beneficial cumulative effect by fostering multimodal connectivity and interconnectivity throughout the region.

The Build Alternative would conflict with several city-wide plans that promote neighborhood sustainability, connectivity, and non-motorized connections from LAUS to the Los Angeles River and policies and programs that facilitate the regionally significant transportation improvements for goods movement and the flow of freight traffic. Prior to implementation of mitigation, effects

[3] Metro, as a rapid transit district, is exempt from the Building and Zoning Code requirements as long as the alteration and the use of the facility is in furtherance of the public purpose of Metro and not purely a revenue-generating venture.

related to conflicts with land use plan policies or local land use controls would be adverse. Other cumulative projects such as the Metro Los Angeles River Path Project (#6) and the Rail to Rail/River Active Transportation Corridor (#48) would include infrastructure elements to promote active transportation.

Mitigation Measure LU-1 would enhance neighborhood connectivity and non-motorized connections south of US-101 by incorporating either Class II or IV type bike lanes along Commercial Street from Alameda Street to Center Street. Implementation of Mitigation Measure TR-3 requires railroad improvements at BNSF's Malabar Yard to minimize effects on freight operations. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to conflicts with land use policies or local land use plans when combined with other cumulative projects in the cumulative geographic area.

Transportation

Geographic Area

The cumulative geographic area for evaluating effects on transportation includes the Project study area, traffic analysis zones, and the SCAG regional planning area. This area was chosen because it includes consideration of transportation network changes that could have a cumulative effect on roadway segments and intersections and railroad facilities affected by the Build Alternative and Malabar Yard railroad improvements. The portion of the cumulative geographic area selected for detailed transportation analysis includes roadways and intersections that would be crossed, built, or modified as part of the Build Alternative and Malabar Yard railroad improvements, or that would be affected by the Project due to additional traffic volumes and other railroad facilities, as discussed in further detail below.

Cumulative Condition

For the purpose of this traffic analysis, 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 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 Build Alternative that are approved or in the process of approval for use in the traffic analysis prepared for the Build Alternative. These transportation projects, combined with the Build Alternative and Malabar Yard railroad improvements, constitutes the cumulative condition for transportation.

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 all of the cumulative projects that were listed in the MOU were in the SCAG model land use assumptions, and the 0.2 percent of annual growth rate was applied, with the exception of three specific projects.
3. Based on projected growth in the study area, and direction from LADOT,[4] 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. Trip generation estimates of the three specific projects 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 3.16-3.

Table 3.16-3. 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
61	129 College Street	College Station	—	169	290	459	307	201	508
4	800 Alameda Street	HSR[b]	32% of 40,960 = 13,107	1,305	870	2,175	870	1,305	2,175

Source: Link Us Traffic Impact Assessment (Appendix E of this EIS)

Notes:
[a] Refer to Table 3.16-2 for a description of these projects.
[b] Trip generation from the planned HSR system is based on data shared by the CHSRA.
CHSRA=California High-Speed Rail Authority; HSR=high-speed rail

[4] This information was confirmed at a meeting between Metro LADOT on May 25, 2016.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Traffic Delay

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements would require temporary roadway closures and possible detours, which would disrupt the flow of traffic, thereby temporarily reducing LOS and V/C at roadway intersections and roadway segments. Construction detours and street closures that may be required for the Build Alternative are reflected in Figure 3.3-5 (see Section 3.3).

During construction, the Build Alternative would generate additional construction traffic consisting of truck haul trips on local roads, including Alameda Street, Mission Road, Cesar Chavez Avenue, Vignes Street, and US-101. Prior to implementation of mitigation, the following two intersections would experience reductions in LOS during construction, thereby resulting in an adverse effect (Table 3.3-11):

- Intersection #15: Vignes Street and Main Street (LOS F - PM peak hour)
- Intersection #27: Mission Road and Cesar Chavez Avenue (LOS E – AM peak)

In the City of Vernon, prior to implementation of mitigation, the applicable V/C ratio threshold from the *County of Los Angeles Traffic Analysis Report Guidelines* would be exceeded for the following two intersections during construction, thereby resulting in an adverse effect (Table 3.3-11 of Section 3.3 in Appendix Q of this EIS):

- Intersection #5: Vernon Avenue/Santa Fe Avenue (LOS F - PM Peak Hour)
- Intersection #6: Santa Fe Avenue/Pacific Boulevard (LOS F - AM Peak Hour)

The Build Alternative and Malabar Yard railroad improvements may contribute to construction-related effects on the local transportation network if constructed at the same time as other cumulative projects. Concurrent construction activities from other cumulative projects, such as the mixed-use development on 700 Cesar Chavez Avenue (#16) and Care First Village Phase II (#5) would contribute construction-related traffic 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 Malabar Yard Mitigation Measure TR-1 through TR-3 (described in Section 3.3 of Appendix Q of this EIS), in conjunction with maximizing opportunities for coordinated detours with other cumulative projects would minimize adverse effects. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS) both require implementation of localized TMP, and Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping of local roadways to maintain efficient traffic flow. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative

effect related to traffic delay when combined with other cumulative projects in the cumulative geographic area.

Operation

For the Build Alternative in the 2031 with Project condition, prior to implementation of mitigation, an adverse effect would occur at one intersection due to Project-related increase in traffic delays that would exceed LADOT guidelines (Table 3.3-12):

- Intersection #4: Center Street and Commercial Street (LOS F – PM peak hour)

For the Build Alternative in the 2040 with Project condition, prior to implementation of mitigation, an adverse effect would occur at one intersection due to Project-related increase in traffic delays that would exceed LADOT guidelines (Table 3.3-13).

- Intersection #4: Center Street and Commercial Street (LOS F – PM peak hour)

For the Malabar Yard railroad improvements in the Opening Year (2024) Build Condition, prior to implementation of mitigation, an adverse effect would occur at one intersection because it would be subject to potential redistribution of vehicular traffic that would exceed the applicable V/C ratio threshold per the *County of Los Angeles Traffic Analysis Report Guidelines* (Table 3.3-12 of Section 3.3 in Appendix Q of this EIS).

- Intersection #6: Santa Fe Avenue/Pacific Boulevard (LOS E - AM Peak Hour)

For the Malabar Yard railroad improvements in the Future Horizon Year (2040) Build Condition, prior to implementation of mitigation, an adverse effect would occur at one intersection and one roadway segment because of delays that would exceed the applicable V/C ratio threshold per the *County of Los Angeles Traffic Analysis Report Guidelines* (Table 3.3-13 and 3.3-14 of Section 3.3 in Appendix Q of this EIS).

- Intersection #4: Pacific Boulevard/Fruitland Avenue (LOS D - AM Peak Hour)
- Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard (PM Peak Hour)

Implementation of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) would minimize the adverse effect from the Build Alternative and Malabar Yard Mitigation Measures TR-3, TR-4, and TR-5 (described in Section 3.3, Transportation in Appendix Q of this EIS) would minimize the adverse effect from the Malabar Yard railroad improvements. Mitigation Measure LU-1 would enhance nonmotorized connectivity, facilitate a pedestrian and bicycle friendly environment in the Project study area, and encourage the use of alternate modes of transportation, consistent with LADOT Guidelines (LADOT 2016), Metro's Active Transportation Program, and the City's sustainability, smart growth, and GHG reduction objectives. Malabar Yard Mitigation Measures TR-3 and TR-4 require re-striping of local roadways and Malabar Yard Mitigation Measure TR-5 requires addition of a new vehicular lane on Fruitland Avenue in City of

Vernon. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to traffic delay when combined with other cumulative projects in the cumulative geographic area.

Design of Existing Roadways and Intersections Causing Increased Hazards

Construction

Construction activities associated with the Build Alternative and Malabar Yard railroad improvements would result in temporary construction-related roadway hazards within the Project footprint and some temporary detours and lane closures may be required. Lane width reductions and night closures on US-101 are also expected to last for 8 to 12 weeks and occur during weekends only. The on- and off-ramps at Commercial Street would also be subject to temporary lane width reductions and short-radius curves and/or short sight distances. Prior to implementation of mitigation, effects related to temporary changes to the roadway environment thereby causing temporary construction-related roadway hazards that would affect motorists, pedestrians, and bicyclists would be adverse.

The Build Alternative and Malabar Yard railroad improvements may contribute to construction-related effects on the local transportation network if constructed at the same time as other cumulative projects. Concurrent construction activities from planned transit and development projects would contribute incrementally to the local roadway network and could result in multiple roadway closures and potentially hazardous conditions at the same time if not properly coordinated. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS) require preparation and implementation of a TMP to minimize construction related roadway hazardous conditions. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to increased hazards on roadways when combined with other cumulative projects in the cumulative geographic area.

Operation

Once constructed, proposed infrastructure for the Build Alternative would not result in hazardous conditions along roadway intersections and segments. The proposed roadway infrastructure is being designed and coordinated with local agencies, including the City's Bureau of Engineering and Department of Transportation, Caltrans, Metrolink, and CHSRA, as applicable. 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. In the City of Vernon, the new Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. On Seville Avenue south of 46th Street, two separate sets of gate arms proposed near each other would introduce a potential roadway hazard due to northbound and southbound vehicle queuing. Effects related to operational roadway hazards due to queuing would be adverse. While other planned transportation projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2) and

the WSAB Line Transit Corridor (#9), may be constructed in the same general location as the Build Alternative, they would also not result in risks from hazardous conditions along roadway intersections as they would be subject to the same design and coordination requirements as the Build Alternative and Malabar Yard railroad improvements. Malabar Yard Mitigation Measure TR-6 (described in Section 3.3 of Appendix Q of this EIS) minimizes the potential roadway hazard; however, to establish the level of effectiveness for the mitigation measures, further coordination with CPUC and the City of Vernon is required. Operation of the Build Alternative and Malabar Yard railroad improvements may cause an adverse cumulative effect related to transportation safety and design hazards when combined with other cumulative projects in the cumulative geographic area.

Emergency Access

Construction

The Build Alternative and Malabar Yard railroad improvements would require temporary detours and roadway closures on the local transportation network. Traffic delay is also expected during construction. Prior to implementation of mitigation, effects related to emergency access would be adverse. These effects could incrementally increase if other planned transit and development projects are constructed at the same time. Other cumulative projects in the area, such as the Metro LAUS Forecourt and Esplanade Improvements Project (#29) and College Station (#30) may also be implemented during the same timeframe as the Build Alternative and Malabar Yard railroad improvements, which may contribute to effects on the local roadway network and potentially interfere with emergency response and access. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS) include provisions for maintaining adequate emergency response routes and requires coordination with police and fire departments regarding changes in emergency access routes prior to construction. Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize construction-related effects related to emergency response and access and evacuation along designated disaster routes. Other planned cumulative projects would also be subject to similar provisions and requirements based on local agency codes and ordinances. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to emergency access when combined with other cumulative projects in the cumulative geographic area.

Operation

Once constructed, the Build Alternative would not result in major changes to the configuration of local roadways and US-101 that would result in permanent delays or restricted access for emergency responders. Any roadway reconfigurations and modifications associated with planned transit and development projects in the cumulative geographic area would be coordinated and approved by the Fire Marshal to ensure the safest access is provided for emergency service providers. Implementation of the Malabar Yard railroad improvements would exceed the

applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may impede access for emergency responders throughout operations. Intersection #6 is located along a designated disaster route. In addition, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also impede access for emergency responders. Prior to implementation of mitigation, effects related to emergency access would be adverse. Implementation of Malabar Yard Mitigation Measure TR-3 through TR-5 would minimize operations-related effects related to emergency response and access and evacuation along designated disaster routes. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness of this mitigation measure, further coordination with CPUC and the City of Vernon is required. Operation of the Build Alternative and Malabar Yard railroad improvements could cause an adverse cumulative effect related to emergency access when combined with other cumulative projects in the cumulative geographic area.

Public Transit, Bicycle, or Pedestrian Facilities

Construction

Construction of the Build Alternative could cause potential schedule delays and increased dwell times for trains using LAUS, and potentially other station locations, because not all lead tracks and rail yard tracks and platforms would be in service at one time. Prior to implementation of mitigation, effects related to public transit would be adverse. The Build Alternative and Malabar Yard railroad improvements in conjunction with cumulative projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2), Metro Division 20 Portal Widening and Turnback Facility (#3), Purple Line Extension (Sections 1, 2, and 3) (#8), and the WSAB Line Transit Corridor (#9), may contribute to effects on public transit. Mitigation Measure TR-2 (described in Section 3.3, Transportation) 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 to minimize adverse effects related to rail service disruptions.

Construction of the Build Alternative and Malabar Yard railroad improvements could also result in an adverse effect on pedestrian and bicycle access due to the close proximity of construction work zones with pedestrians and cyclists. 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. Prior to implementation of mitigation, effects related to pedestrian and bicycle access would be adverse. The Build Alternative and Malabar Yard railroad improvements may contribute to effects related to pedestrian and bicycle access if constructed at the same time as other cumulative projects. Mitigation Measure TR-1 and Malabar Yard Mitigation Measure TR-1 require implementation of a TMP for the Build Alternative and Malabar Yard railroad improvements

respectively, with detour routes during construction, which would facilitate safe bicycle and pedestrian access through and around work zones to minimize adverse effects related to pedestrian and bicycle access during construction.

With implementation of Mitigation Measures TR-1 and TR-2 and Malabar Yard Mitigation Measure TR-1, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to public transit service, bicycle, or pedestrian facilities when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative is consistent with the plans and policies relative to 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 is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations, including the 2050 California Transportation Plan, the 2020 RTP/SCS, the 2018 California State Rail Plan, and the 2022 CHSRA Business Plan. Considering the importance of the Build Alternative to the growth of public transit in Southern California and the future interconnectivity of the planned HSR system, combined with other cumulative projects, these beneficial effects on public transit would be long-term and regional.

Although regional benefits related to public transit would occur from the Build Alternative, and roadway and safety improvements would be implemented to facilitate safe motorist and non-motorized movements as part of the Build Alternative and Malabar Yard railroad improvements, run-through track structures south of LAUS as part of the Build Alternative would impede upon, or preclude future implementation of active transportation improvements from LAUS to the Los Angeles River. Furthermore, in the City of Vernon, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also cause schedule delays to transit services or disruption of pedestrian and bicycle access. Prior to implementation of mitigation, effects related to bicycle and pedestrian facilities would be adverse. Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning) requires new active transportation infrastructure from LAUS to the west bank of the Los Angeles River to improve connectivity between neighborhoods surrounding LAUS and facilitate cycling and walking in the Project study area. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness for this mitigation measure, further coordination with CPUC and the City of Vernon is required. In addition, cumulative projects within the cumulative geographic area such as the Metro LAUS Forecourt and Esplanade Improvements Project (#29) and the Metro Alameda Street Mobility Project (#45) would better accommodate transit connections to LAUS and would contribute to beneficial cumulative effects upon operation. Operation of the Build Alternative and Malabar Yard railroad improvements could cause an adverse cumulative effect related to bicycle or pedestrian facilities when combined with other cumulative projects in the cumulative geographic area.

Freight

Construction

In the interim condition, the northerly portion of four existing storage tracks (5,500 track feet) at the BNSF West Bank Yard would be removed, comprising 18 percent of the total West Bank Yard. These tracks would be removed to facilitate the construction of a new common rail embankment on the west bank of the Los Angeles River. Prior to implementation of mitigation, effects related to freight operations would be adverse due to removal of approximately 5,500 track feet of storage capacity. Mitigation Measure TR-3 (described in Section 3.3, Transportation) which requires implementation of Malabar Yard railroad improvements to offset the loss of storage tracks from the Build Alternative is proposed to minimize the adverse effect on freight rail operations. Mitigation Measure TR-3 requires:

1. closure of an at-grade crossing at 49th Street in the City of Vernon to accommodate 3,350 new track feet of freight storage track capacity that does not exist at BNSF's Malabar Yard; and
2. a new 1,000-foot track connection to enable direct freight rail access to and from BNSF's Malabar Yard and Los Angeles Junction, which is currently not available.

With the implementation of Mitigation Measure TR-3, the net loss of freight storage track capacity resulting from the Build Alternative would be limited to 2,150 track feet, and freight rail operations would be enhanced with a new connection between two of BNSF's freight rail yards in the City of Vernon. After implementation of Mitigation Measure TR-3, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to freight rail operations when combined with other cumulative projects in the cumulative geographic area.

Operation

Prior to implementation of mitigation, the permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard would cause operational inefficiencies for BNSF when operating longer trains. Prior to implementation of mitigation, effects on freight operations would be adverse. The Build Alternative and Malabar Yard railroad improvements in conjunction with other planned transit infrastructure projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system [#2] may contribute to effects related to freight. Mitigation Measure TR-3 (described in Section 3.3, Transportation) requires railroad improvements in the City of Vernon including a new connection between two of BNSF's freight rail yards and closure of the 49th Street at-grade crossing to facilitate storage of freight trains at Malabar Yard to minimize adverse effects. Operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to freight rail operations when combined with other cumulative projects in the cumulative geographic area.

Visual Quality and Aesthetics

Geographic Area

The geographic area for evaluating cumulative effects related to visual quality and aesthetics includes the viewshed around the Build Alternative and Malabar Yard railroad improvements within the Project study area and Malabar Yard study area. This area was selected because it is the area where other cumulative projects would have visual effects that would overlap with those of the Build Alternative and the Malabar Yard railroad improvements.

Cumulative Condition

The geographic area for visual quality and aesthetics is located in a highly urban setting which has undergone construction and transformation for over a century. Currently, visual intrusions are prevalent, including warehouses, transportation facilities, power transmission and local distribution lines, satellite dishes, garbage cans, and vehicles. Construction and operation of reasonably foreseeable planned transit and development projects listed in Table 3.16-2 could intensify the urban nature of the area and redevelopment will alter the existing character by adding new visual elements. These cumulative projects, combined with the Build Alternative and Malabar Yard railroad improvements, constitutes the cumulative condition for visual quality and aesthetics.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Visual Character or Quality

Construction

Some residents and businesses would have direct sight lines to construction activities associated with the Build Alternative and Malabar Yard railroad improvements. Viewer groups located along the highly urbanized highway and railroad corridor are likely to be accustomed to seeing construction vehicles and equipment within the Project study area because of existing roadway improvement projects and ongoing rail maintenance activities. Therefore, visual changes would not be substantial for the viewer groups of the visual assessment units considered. No direct adverse effect would occur. Other planned transit, mixed use, non-transit public service, and non-transit infrastructure projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system [#2], Care First Village Phase 2 [#5] and Metro Los Angeles River Path Project [#6]) would occur in multiple areas where construction equipment is present for extended durations of time in the cumulative geographic area. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to visual character or quality when combined with other cumulative projects in the cumulative geographic area.

Operations

Long-term direct and indirect visual effects would result from construction of new retaining/sound walls. Prior to implementation of mitigation, effects related to visual quality would be adverse.

These new visual features, in combination with other development projects, would result in cumulative changes to the visual character of the cumulative geographic area. From a regional perspective, as regional/intercity rail traffic increases in the future, additional regional transit projects inside and outside of the Project study area 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. Transit projects in the geographic area (including Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system [#2], and Metro Division 20 Portal Widening and Turnback Facility Project [#3]), may result in additional retaining/sound walls, rail safety features, or other infrastructure which could cumulatively introduce new visual intrusions to the geographic area.

New mixed used development and public service projects in the geographic area, specifically the Metro Center Street Project, Emergency Security Operations Center (#1), 700 Cesar Chavez Avenue (#16), and Care First Village Phase 2 (#5) could further obstruct views for residents, commuters, and business owners/employees/patrons. New housing projects within and near the Project study area would also increase the number of viewers, and thus, the frequency and exposure with which the Build Alternative and other developments are viewed.

Some future projects could result in beneficial cumulative effects. For example, the Park 101 project (#7) would introduce a new urban park and greenery, and the Rail to Rail/River Active Transportation Corridor (#48) would introduce new active transportation amenities resulting in a positive viewer response.

The precise level of cumulative resource change at each Visual Assessment Unit is uncertain as not all future projects have completed environmental reviews or have detailed project information available regarding anticipated construction or operation timeframes. However, the cumulative geographic area is a developed area with a heavy presence of transportation and industrial, commercial, and institutional land uses. Other development projects are likely to include mitigation measures under CEQA and NEPA if adverse visual effects are identified. Furthermore, other projects would also be required to individually meet applicable building code requirements as well as the requirements of local policies and ordinances for aesthetics. Mitigation Measure AES-1 (described in Section 3.4, Visual Quality and Aesthetics) requires application of aesthetic treatments on retaining/sound walls in proximity to residential land uses to minimize adverse effects related to visual character or quality. Operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to visual character or quality when combined with other cumulative projects in the cumulative geographic area.

Light or Glare

Construction

The Build Alternative and Malabar Yard railroad improvements are located in an urban setting with substantial sources of existing light and glare associated with surrounding commercial, industrial, and transportation-related land uses. The Build Alternative would generate new

sources of lighting during construction, which would contribute to existing light sources affecting nearby drivers and residential land uses. Prior to implementation of mitigation, effects related to lighting and glare would be adverse. Cumulative effects would be greatest for those projects occurring in the geographic area in close proximity to residential land uses. If projects in the cumulative geographic area require nighttime construction and lighting, light spill could affect normal activities for residents of William Mead Homes, Care First Village and Mozaic Apartments at a greater magnitude or longer duration than the effects of the Build Alternative alone. However, night and daytime lighting is present throughout the urban environment, including, pole lights throughout the LAUS campus, streetlights, train lights, and light sources associated with other industrial, commercial, and institutional land uses. In addition, any future projects subject to CEQA or NEPA would require mitigation if potentially adverse visual effects associated with light and glare are identified. Mitigation Measure AES-2 (described in Section 3.4, Visual Quality and Aesthetics) requires temporary lighting to be installed in a manner that directs light toward the construction area or temporary shields to be installed to minimize adverse effects related to light and glare. With implementation of mitigation, the incremental contribution of light spill and glare is unlikely to result in undesired exposure to residents or drivers or disrupt any normal activities for other viewer groups. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to light or glare when combined with other cumulative projects in the cumulative geographic area.

Operations

Although the area is already heavily developed with the presence of transportation and industrial, commercial, and institutional land uses, the canopies proposed within the elevated rail yard and concourse-related improvements as part of the Build Alternative could cause additional daytime glare. Prior to implementation, effects related to daytime glare would be adverse. Mitigation Measure AES-3 (described in Section 3,4, Visual Quality and Aesthetics) requires low reflective glass and materials to be incorporated into the design of the new canopies to reduce daytime glare. In addition, 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. Therefore, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to light or glare when combined with other cumulative projects in the cumulative geographic area.

Air Quality and Global Climate Change

Geographic Area

The geographic area for evaluating cumulative impacts on air quality is the entire SCAB, which covers 6,745 square miles and includes all of Orange County and the non-desert portions of Los Angeles County, Riverside, and San Bernardino counties. This geographic area was selected to develop a broad, regional consideration of cumulative impacts. The U.S. EPA has classified all or portions of the SCAB as attainment for SO_2, attainment/maintenance for CO, PM_{10}, and NO_X, and nonattainment for O_3, $PM_{2.5}$, and Pb.

The geographic area for evaluating cumulative impacts on global climate change is the entire state of California because existing plans and emissions targets are established based on statewide goals.

Cumulative Condition

The Build Alternative and Malabar Yard railroad improvements, in conjunction with other cumulative projects listed in Table 3.16-2 constitute the cumulative condition relative to air quality and global climate change. Under the cumulative condition, ongoing urban development and construction activities would continue within the cumulative geographic area, and planned development and regional growth would contribute to the generation of air pollutant emissions.

Population growth and proposed developments are projected to result in new homes, commercial, and industrial uses in the cumulative geographic area. Emissions associated with the construction and operation of projected development would have incremental impacts on air quality and GHG emissions.

As shown Table 3.16-2, several cumulative projects are anticipated to be constructed at the same time as the Build Alternative and Malabar Yard railroad improvements. Construction of the Build Alternative and Malabar Yard railroad improvements and these other cumulative projects would result in effects on air quality from construction emissions. Past, present, and reasonably foreseeable future projects would have VOCs, NOx, fugitive dust (PM_{10} and $PM_{2.5}$), and GHG emissions during construction. Because the SCAB is designated as nonattainment for the federal 8-hour ozone and $PM_{2.5}$, cumulative projects that are constructed during the same timeframe would likely exceed an air quality standard or contribute to an existing or projected air quality exceedance for these criteria pollutants.

Population growth in the region would increase VMT and associated traffic congestion on local and regional roadways that would continue to incrementally affect air quality and GHG emissions. Emissions associated with the operation of projected development in the cumulative geographic area would also incrementally affect air quality and GHG emissions. On a regional scale, past, present, and reasonably foreseeable future projects would contribute to traffic congestion associated with long-term growth and worsen air quality. Other cumulative projects would generate additional air pollutant and GHG emissions during operation, primarily transportation and transit projects (depending on mode) or development projects that would generate additional traffic trips.

Federal and state agencies have adopted plans and policies aimed at reducing air pollutants and GHG emissions. Examples of these policies on the federal level include the EO 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability, which sets a goal for climate resilient infrastructure and operations, and CEQ's interim NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, which clarifies best practices for analysis, incorporates community analysis considerations, introduces the social cost of GHGs, and encourages agencies to mitigate GHG impacts. These actions will help reduce pollutant emissions from now until beyond the planning horizon of 2040.

Overall, air quality and GHG emissions have improved and will continue to improve in the SCAB, as demonstrated in the latest 2022 Scoping Plan for Achieving Carbon Neutrality from the California Air Resources Board (CARB).

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Construction

Air Pollutant Emissions

Construction emissions of the Build Alternative and Malabar Yard railroad improvements would increase regional air pollutant emissions, but effects on air quality would be temporary and would not impede the region's ability to attain air quality standards. Construction of the Build Alternative and Malabar Yard railroad improvements would generate emissions of VOCs, NOx, CO, sulfur oxide (SO_x), PM_{10}, $PM_{2.5}$, CO_2, CH_4, and N_2O that could result in short-term air quality and GHG effects from both equipment exhaust and fugitive dust from earthwork activities. For the Build Alternative and Malabar Yard railroad improvements combined, unmitigated annual construction emissions would exceed the *de minimis* level for NOx, which is a precursor for ozone, for which SCAB is in federal nonattainment. Prior to implementation of mitigation, effects related to pollutant emissions would be adverse.

Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5, Air Quality and Global Climate Change) and Malabar Yard Mitigation Measures AQ-1 and AQ-2 would be implemented to reduce air quality effects during construction of the Build Alternative and Malabar Yard railroad improvements, respectively.

- Mitigation Measure AQ-1 and Malabar Yard Mitigation Measure AQ-1 require regular watering or other dust preventive measures using procedures specified in SCAQMD Rule 403 to reduce daily fugitive dust emissions.
- Mitigation Measure AQ-2 and Malabar Yard Mitigation Measure AQ-2 require all on-site construction equipment greater than 50 horsepower 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.

After implementation of AQ-2 and Malabar Yard Mitigation Measure AQ-2, the annual NOx emissions during construction of the Build Alternative and Malabar Yard railroad improvements would be below the *de minimis* level. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to air quality and global climate change when combined with other cumulative projects in the cumulative geographic area.

GHG Emissions

Climate change is a global problem and GHGs are global pollutants, unlike other air pollutants, which are primarily pollutants of regional and local concern. Given their long atmospheric

lifetimes, GHGs emitted by countless sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative.

Up to 47,900 tons of CO_2e would be generated during the 6-year construction period for the Build Alternative; this is equivalent to 43,454 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 would be 1,448.5 MT of CO_2e per year. Demolition, construction, and clearing activities for Malabar Yard railroad improvements would generate approximately 2,608 MT of CO2e. Amortized over a 30-year period, the approximate life of the Malabar Yard railroad improvements, the yearly contribution to GHG from construction would be 87 MT of CO2e for a combined total of 1535 MT of CO_2e. As identified in Table 3.5-13, the total annual GHG emissions from construction and operation of the Build Alternative and Malabar Yard railroad improvements would be approximately 9,524 MT of CO_2e per year, which is less than the federal reporting threshold of 25,000 MT of CO_2e per year. The analysis conservatively assumes the first year of operations for Malabar Yard. The amount of avoided emissions from Malabar Yard would increase substantially by Year 20 and Year 30.

Although not required to reduce adverse effects under NEPA related to climate change, Mitigation Measure AQ-2 would reduce the off-road GHG emissions by 30 percent. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to air quality and global climate change when combined with other cumulative projects in the cumulative geographic area.

Operation

Air Pollutant Emissions

Although cumulative air emissions would be generated in the region, the Build Alternative and Malabar Yard railroad improvements would help the region attain its air quality standards and plans by reducing the amount of regional traffic and providing an alternative mode of transportation.

The Build Alternative and Malabar Yard railroad improvements would benefit regional air quality by reducing VMT, which would reduce criteria pollutant emissions. Summaries of the regional criteria pollutant emissions associated with operation of the Build Alternative are shown in Tables 3.5-7 through 3.5-9 for the 2026, 2031, and 2040 conditions, respectively, in Section 3.5, Air Quality and Global Climate Change. A summary of the regional criteria pollutant emissions associated with operation of the Malabar Yard railroad improvements is shown on Tables 3.5-6 in Section 3.5 of Appendix Q of this EIS. As shown in Table 3.5-7 and Table 3.5-8, in 2026 and 2031, the annual rail emissions exceed the *de minimis* levels. As shown in Table 3.5-9, the net increase in annual emissions associated with operation of the Build Alternative in 2040 would be offset by the reduction in emissions from implementation of the Malabar Yard railroad improvements and would not exceed the *de minimis* level for any criteria pollutant.

Prior to implementation of mitigation, an adverse effect would occur in 2026 and 2031. Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change) would reduce the rail exhaust emissions by requiring implementation of emerging technologies such as electric or alternative fuel technology consistent with the 2018 California State Rail Plan. As shown in Table 3.5-10, Table 3.5-11, and Table 3.5-12, the net increase in annual emissions would continue to be below the *de minimis* level after mitigation.

Furthermore, the operational emissions calculation does not take into account the decrease in VMT as there would be a modal shift towards transit use and away from single occupancy vehicles. 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 Build Alternative would indirectly reduce the number of vehicles on the road and indirectly alter regional on road motor vehicle travel. 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. Transportation emissions in the region would likely decrease further considering this decrease in VMT. As the Build Alternative is consistent with the RTP/SCS and would result in operational emissions below the *de minimis* levels, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to air quality and global climate change when combined with other cumulative projects in the cumulative geographic area.

GHG Emissions

As identified in Table 3.5-13, there would be a net reduction in total annual GHG emissions from construction and operation of the Build Alternative and Malabar Yard Improvements. While Malabar Yard operational Year 20 would be 2050 and would not directly align with 2040 annual operational emissions of the Build Alternative, the downward trend in emissions between Year 1 and Year 20 at Malabar Yard would still result in enough reduced emissions that the combined emissions would be well below the federal reporting threshold of 25,000 MT of CO2e per year. Mitigation Measure AQ-3 would reduce the locomotive emissions by 30 percent in 2026 and 50 percent in 2031 and 2040. Similar to air quality, regional transportation GHG emissions would decrease from reduced VMT and modal shift towards transit use. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions. 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 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 further reduce GHG emissions from the Build Alternative and Malabar Yard. Therefore, operation of the Build Alternative and

Malabar Yard railroad improvements would contribute to a beneficial cumulative effect related to global climate change when combined with other cumulative projects in the cumulative geographic area.

Noise and Vibration

Geographic Area

The geographic area for evaluating noise and vibration cumulative impacts is the SCAG regional planning area, which includes the Project study area and Malabar Yard study area. The SCAG regional planning area encompasses over 38,000 miles over six counties.

Cumulative Condition

Under the cumulative condition, projected growth and redevelopment trends within the region would continue. The cumulative conditions consider this growth, along with other planned development and transportation projects listed in Table 3.16-2.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Noise Levels in Excess of Established General Plan, Noise Ordinance, or Agency Standards; and Ambient Noise Levels

Construction

Construction of the Build Alternative would take place in phases over approximately 6 years, and construction of the Malabar Yard railroad improvements would take up to 18 months to complete. During this time, population growth, increased traffic and transit, and future development projects are likely to occur; all of which may influence the existing noise environment. Construction of the Build Alternative and Malabar Yard railroad improvements, in combination with these factors, may incrementally increase noise in the geographic area as detailed below. In the vicinity of LAUS, Category 2 and 3 land uses would be subject to construction noise during construction of the Build Alternative that exceeds the City's 75 dBA limit. Prior to implementation, effects related to construction noise on the following receptors would be adverse:

- William Mead Homes - 41 dwelling units and one recreational use;
- Care First Village - approximately 36 dwelling units and a playground/park;
- Mozaic Apartments - 82 dwelling units; and,
- Metro Gateway Childhood Development Center.

Construction of other projects in the Project study area could occur concurrently with the Build Alternative, which could increase noise or prolong noise exposure at noise-sensitive receptors. Future development projects near sensitive receptors that could overlap in time with construction of the Build Alternative include Care First Village Phase II (#5), 745 Spring Street (#11), and Metro LAUS Forecourt and Esplanade Improvements Project (#29). Future residential and mixed-use

development projects could also result in new noise-sensitive receptors near the proposed infrastructure in the Project study area. However, future projects would likely require noise analysis in accordance with CEQA and NEPA requirements, and mitigation would be required if adverse effects are identified. In addition, new projects would likely be designed and developed in accordance with City of Los Angeles Municipal Code, Section 91.1207.14.2. 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. In addition, Mitigation Measures NV-2, and NV-3 (described in Section 3.6, Noise and Vibration) would reduce noise impacts on sensitive receptors by requiring walled enclosures around loud activities, restricting pile driving to daytime periods, rerouting truck traffic away from residential streets, and implementation of a Community Notification Plan.

No noise sensitive land uses are located within 1,000 feet of the proposed Malabar Yard rail line along 46th Street and 49th Street intersection at Malabar Yard (without obstructions) or 650 feet from the 46th Street Connector and 49th Street intersection at Malabar Yard (with obstructions), per the FTA and FRA guidelines.

Mitigation Measures NV-2 and NV-3 would minimize adverse effects of the Build Alternative by identifying noise exceedances and requiring that the construction contractor address noise exceedances that occur by applying additional mitigation; however, some receptors would still be subject to construction-related noise that would exceed applicable thresholds. Therefore, temporary construction impacts would remain adverse and construction of the Build Alternative could cause an adverse cumulative effect related to construction noise when combined with other cumulative projects in the cumulative geographic area.

Operations

Cumulative noise and vibration impacts were considered by SCAG as part of the 2020 RTP/SCS Program EIR (SCAG 2020). The cumulative regional noise and vibration impacts identified in that EIR include those typically associated with improvements along transportation corridors (for example, railroads, highways, and transit). The most prevalent noise sources identified in the 2020 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 planned for HSR.

Operation of cumulative projects, including other infrastructure improvements 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 the Project 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 noise as a result of the land use changes and transportation projects identified in the 2020 RTP/SCS Program EIR. The 2020 RTP/SCS Program EIR identified a significant cumulative impact associated with noise because of extension of transportation and related infrastructure in the SCAG region.

The greatest potential for Project-related cumulative effects on the local noise environment would be the incremental addition of new regional/intercity rail service combined with HSR operations. As provided in the Project-level analyses, moderate and severe impacts would occur at William Mead Homes, Care First Village, and the Mozaic Apartments (see Section 3.6, Noise and Vibration). Prior to implementation of mitigation, effects related to operational noise (severe noise impacts) would be adverse. Moderate and severe impacts are summarized below:

- In the 2026 condition, 24 moderate noise impacts would occur (all William Mead Homes dwelling units) and no severe impacts would occur.
- In the 2031 condition, 34 moderate impacts would occur (16 dwelling units at William Mead Homes, 3 dwelling units at Mozaic Apartments, and 15 dwelling units at Care First Village) and 35 severe noise impacts would occur (24 dwelling units at William Mead Homes, 10 dwelling units at Care First Village, and one park at William Mead Homes).
- In the 2040 condition, 25 moderate impacts would occur (16 dwelling units at William Mead Homes and 9 dwelling units at Mozaic Apartments) and 35 severe impacts would occur (24 dwelling units at William Mead Homes, 10 dwelling units at Care First Village, and one park at William Mead Homes)

Mitigation Measure NV-1 (described in Section 3.6.6) requires Metro to implement a sound wall within the railroad ROW along the perimeter of the William Mead Homes, Care First Village property to reduce adverse operational noise effects by reducing noise levels lower than the FTA severe impact criteria.

As part of the Build Alternative, safety improvements are proposed at North Main Street because Metro is working with the City of Los Angeles to implement a future quiet zone for trains crossing at the North Main Street public at-grade crossing. Potential noise reductions that may occur to sensitive receptors were estimated if a quiet zone were implemented, as described in the *Link US Noise and Vibration Study*. Based on the results, noise levels would change only negligibly, due to the distance of the North 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 North 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 (from a quiet zone at North Main Street) may also result in reduced sleep disturbance for receptors at William Mead Homes. The noise reductions resulting from the City of Los Angeles'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's window replacement program for the William Mead Homes buildings located near the rail lines. This retrofit project would include acoustical treatments of the buildings, such as sound attenuating windows. Implementation 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.

With consideration of the Build Alternative mitigation, the potential for program level mitigation measures identified in the RTP/SCS PEIR, and future quite zone and City of Los Angeles's window replacement program, operation of the Build Alternative and Malabar Yard railroad improvements would contribute to a beneficial cumulative effect related to operational noise levels when combined with other cumulative projects in the cumulative geographic area.

Groundborne Vibration and Groundborne Noise Levels

Construction

Construction of the Build Alternative, in coordination with future development projects could increase or prolong existing rail vibration levels for residents at William Mead Homes, Care First Village, and the Mozaic Apartments. There are no noise-or vibration-sensitive land uses in the designated screening distances for the Malabar Yard railroad improvements, per the FTA and FRA guidelines.

Construction of the Build Alternative would result in temporary vibration from use of heavy equipment and machinery. Vibration from construction 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. These vibration-related effects are predicted to occur at vibration sensitive land uses in close proximity to the work zone including William Mead Homes, Care First Village, and Mozaic Apartments. Prior to implementation of mitigation, vibration-related effects would be adverse. Mitigation Measure NV-2 (described in Section 3.6, Noise and Vibration) requires implementation of noise- and vibration-reducing measures, and Mitigation Measure NV-3 (described in Section 3.6, Noise and Vibration) requires implementation of a Community Notification Plan to minimize adverse effects. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to groundborne vibration and groundborne noise levels when combined with other cumulative projects in the cumulative geographic area.

Operations

There are no predicted increases of 3 VdB or greater from operations in the 2026, 2031, or 2040 condition. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not result in an adverse effect or cause an adverse cumulative effect related to groundborne vibration when combined with other cumulative projects in the cumulative geographic area.

Biological and Wetland Resources

Geographic Area

The geographic area for evaluating cumulative impacts on biological resources consists of the cities of Los Angeles and Vernon. This geographic area encompasses the habitats used by special-status plants and animal species that could be affected by the Build Alternative and Malabar Yard railroad improvements within those cities.

Cumulative Condition

The Build Alternative and Malabar Yard railroad improvements, together with past, present and reasonably foreseeable projects identified in Table 3.16-2 constitute the cumulative condition related to biological resources. According to observations derived from aerial imagery and site reconnaissance, the cities of Los Angeles and Vernon are mostly developed, with limited open space available for future development. Due to the lack of native, undisturbed habitat within these cities, few special-status wildlife species are expected to occur. However, marginally suitable roosting and foraging habitat for two state-designated species of special concern, western mastiff bat (*Eumops perotis californicus*) and western yellow bat (*Lasiurus xanthinus*), occurs in several areas throughout the area. Western mastiff bat may roost in bridges and western yellow bat may roost in naturally occurring or planted (ornamental) trees, including palm trees in the cumulative geographic area. Habitat fragmentation by urbanization has resulted in isolated areas of natural habitat, which negatively affects wildlife movement by disrupting natural wildlife corridors. While development of future projects may have the potential to impact special-status plant and animal species, there is little potential for cumulative effects on biological resources given the existing lack of habitat and connectivity in the cumulative geographic area. Past habitat fragmentation and loss of connectivity has resulted in minimal suitable habitat within the cumulative geographic area; therefore, the Build Alternative and Malabar Yard railroad improvements would have little potential to further effects on the already fragmented habitat.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Federally and State Listed or Candidate Plant or Animal Species

Construction

The Build Alternative and Malabar Yard railroad improvements are located within a heavily developed urban area with minimal suitable habitat for special-status species. As discussed in Section 3.7, Biological and Wetland Resources, removal of naturally occurring or ornamental trees, track work, and bridge modifications at Vignes Street and Cesar Chavez Avenue could disturb western mastiff bat and western yellow bat that may use these areas to roost. Disturbance could lead to maternity site abandonment if roosting bats are present. Prior to implementation of mitigation, effects related to special-status species would be adverse. While no western mastiff bats or western yellow bats were observed within the Project study area during the general biological survey, there is still potential for occurrence.

As previously discussed, the cumulative geographic study area is located in an environment where there is minimal suitable habitat for special-status species. When combined, construction of the Build Alternative and Malabar Yard railroad improvements and other planned transit and development projects (such as the Mixed-use development at 700 Cesar Chavez Avenue [#16] and Care First Village Phase 2 [#5]), could result in cumulative effects on special status species bats even though there is limited suitable habitat for western mastiff bats or western yellow bats due to all the trees being removed at the same time. Cumulative projects would be required to mitigate for effects on special-status species and comply with regulatory requirements, including federal, state, and local government laws and regulations that protect special-status species. Mitigation Measure BIO-1 described in Section 3.7, Biological and Wetland Resources) would minimize effects on special-status bat species by requiring pre-construction surveys and tree removal to occur outside of the bat maternity season. With the implementation of Mitigation Measure BIO-1, no direct or indirect adverse effects on roosting bats would occur during construction. Cumulative impacts associated with other cumulative projects within the cumulative geographic area for biological resources would be minimized through mitigation measures and consultation with appropriate regulatory agencies (USFWS and CDFW) such that there would be limited effects on biological resources. Therefore, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to special-status species when combined with other cumulative projects in the cumulative geographic area.

Operation

Once operational, the Build Alternative would involve increased train traffic and periodic maintenance of Metro's ROW. The permanent effects of the Build Alternative and Malabar Yard railroad improvements on biological resources would be limited due to minimal suitable habitat for special-status species. Once operational, 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 BSA, the corresponding effects of operations on each species are not anticipated to substantially reduce the regional population size of these species. Therefore, no direct adverse effect would occur during operation.

Other cumulative projects within the cumulative geographic area for biological resources are also in a developed and urbanized environment where there is minimal suitable habitat for special-status species. Similar to the Build Alternative, other cumulative projects would be required to comply with regulatory requirements, including federal, state, and local government laws and regulations that protect special-status species. Cumulative effects associated with other cumulative projects within the cumulative geographic area for biological resources would be minimized through mitigation measures and consultation with appropriate regulatory agencies such that there would be limited effects on biological resources. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to special-status species when combined with other cumulative projects in the cumulative geographic area.

Nesting Birds Protected by the Migratory Bird Treaty Act

Construction

The Project study area and Malabar Yard study area provides suitable habitat for migratory birds protected by the MBTA, including mature trees, utility poles, building rafters and eaves, and bridges. Construction of the Build Alternative and Malabar Yard railroad improvements may result in the removal of suitable habitat for migratory birds, resulting in effects on active nests, and potential for moderate reductions in population sizes of these species. Prior to implementation of mitigation, effects related to nesting birds protected under the MBTA would be adverse. Construction of cumulative projects may also result in the removal of suitable habitat in areas where suitable habitat is present, including areas where mature trees, utility poles, building rafters and eaves, and bridges are located. The Build Alternative and Malabar Yard railroad improvements may contribute to effects on migratory birds if constructed at the same time as other cumulative projects. Similar to the Build Alternative, other cumulative projects subject to CEQA or NEPA would be required to mitigate for adverse effects on migratory birds and comply with regulatory requirements, ensuring their compliance with the MBTA. Mitigation Measure BIO-2 (described in Section 3.7, Biological and Wetland Resources) and Malabar Yard Mitigation Measure BIO-1 (described in Section 3.7 of Appendix Q of this EIS) requires vegetation removal to occur outside of the bird nesting season and exclusionary devices to be required to be installed around nests to minimize potential effects during construction. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to migratory birds when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative and Malabar Yard railroad improvements combined with other planned transit and development projects listed in Table 3.16.2 would cause negligible effects on nesting birds due to the already minimal amount of suitable habitat and birds' adaptation to urbanized environments. The Build Alternative and Malabar Yard railroad improvements would not result in an adverse effect or cause an adverse cumulative effect related to nesting birds when combined with other cumulative projects in the cumulative geographic area.

Wildlife Movement

Construction

The Build Alternative and Malabar Yard railroad improvements are located within a heavily developed urban area with minimal suitable habitat to support wildlife movement. As described in Section 3.7, Biological and Wetland Resources of this EIS, construction of the Build Alternative would include safety improvements at the North Main Street Bridge. These safety improvements avoid impacts to the Los Angeles River and would, therefore, not temporarily obstruct local north to south wildlife movement that may be occurring via the Los Angeles River. Furthermore, there were no sensitive species observed during the survey within the BSA and the nearest large open

spaces are 5 miles from the BSA. The BSA is within a heavily developed urban area, and the I-5 and SR-110 act as barriers to possible wildlife movement. Therefore, no direct adverse effects on wildlife movement would occur during construction.

Other cumulative projects within the cumulative geographic area for biological resources are also in a developed and urbanized environment where there is minimal suitable habitat for special-status species and wildlife movement. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to wildlife movement when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative and Malabar Yard railroad improvements are located within a heavily developed urban area with minimal suitable habitat to support wildlife movement. No direct adverse effects on wildlife movement would occur during operation.

Other cumulative projects within the cumulative geographic area for biological resources would also occur in a developed and urbanized environment where there is minimal suitable habitat for special-status species and wildlife movement. Habitat fragmentation by urbanization has resulted in isolated areas of natural habitat, which negatively affects wildlife movement by disrupting natural wildlife corridors. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to wildlife movement when combined with other cumulative projects in the cumulative geographic area.

Conflict with a Tree Preservation Ordinance

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements may cause disturbance, damage, destruction, and/or removal of trees that are subject to protection under local ordinances. The removal of trees is regulated by existing local ordinances including the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873), LA Metro's Tree Policy, and City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees). Prior to implementation, effects related to conflicts with exiting tree preservation ordinances would be adverse. Mitigation Measure BIO-3 (described in Section 3.7, Biological and Wetland Resources) requires preconstruction surveys for protected trees to be conducted at least 120 days prior to construction and that native protected trees not be removed without approval by the City of Los Angeles pursuant to Ordinance No. 186873. Malabar Yard Mitigation Measure BIO-2 (described in Section 3.7 of Appendix Q of this EIS) requires the compliance with the City of Vernon's Tree Ordinance (Code of Ordinances, Chapter 12.24, Street Trees) by preparing a Tree Removal/Tree Protection Plan for any City-owned trees that may be removed. With the implementation of Mitigation Measure BIO-3 and Malabar Yard Mitigation Measure BIO-2, no direct or indirect adverse effects related to tree removal would occur during construction.

Similar to the Build Alternative and Malabar Yard railroad improvements, other cumulative projects would be required to comply with applicable ordinances and requirements including City

approvals, tree removal protections plans, and tree replacement requirements. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to tree removal when combined with other cumulative projects in the cumulative geographic area.

Operation

Once constructed, the Build Alternative and Malabar Yard railroad improvements would not require the removal of additional trees. No adverse effects related to conflicts with tree preservation ordinances during operations are anticipated. Therefore, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to tree removal when combined with other cumulative projects in the cumulative geographic area.

Floodplains, Hydrology, and Water Quality

Geographic Area

The geographic area for evaluating cumulative effects on floodplains, hydrology, and water quality is the Los Angeles River watershed, which covers a land area of approximately 834 square miles including the Project study area and Malabar Yard study area.

Cumulative Condition

The combined environmental influence of the past, present, and reasonably foreseeable future changes described in Table 3.16-2, constitutes the cumulative condition relevant to floodplains, hydrology, and water quality. Many stormwater discharges associated with the cumulative condition are subject to the NPDES permitting system. Existing NPDES permits relevant to the Project study area and Malabar Yard project study area include:

- Caltrans Multiple Separate Storm Sewer System Permit (2022)
- NPDES Industrial General Permit (2014)
- NPDES CGP (2022)
- Small MS4 Phase II Permit (2014)
- Municipal NPDES Permit (2021 [City of Los Angeles and City of Vernon])

This stormwater permitting framework regulates point sources that discharge pollutants to waters of the United States. There are over 1,300 permitted industrial stormwater discharges in the watershed, and over 170 permitted non-stormwater dischargers in the watershed (Los Angeles Regional Water Quality Control Board 2018). Stormwater pollutants from dense clusters of residential, industrial and other urban activities have impaired water quality in the middle and lower portions of the Los Angeles River watershed. Existing industrial facilities exposed to rain RWQCB 2018). Stormwater pollutants from dense clusters of residential, industrial and other urban activities have impaired water quality in the middle and lower portions of the Los Angeles River watershed. Existing industrial facilities exposed to rain events can transport pollutants into

the Los Angles Watershed. Three wastewater treatment facilities in the geographic area (Donald C. Tillman WRP, the Los Angeles-Glendale WRP, and the Burbank WRP) discharge into the Los Angeles River and are the primary source of nitrogen compound pollutants (Los Angeles RWQCB 2014). Streets, roads, and highways are prevalent throughout the geographic area, and carry stormwater runoff pollutants from cars, trucks, and buses. These pollutants include heavy metals from tires, brakes, and engine wear, and hydrocarbons from lubricating fluids.

Existing stormwater drainage and conveyance infrastructure in the Project study area and Malabar Yard study area connects with larger flood control facilities such as 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.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Drainage Patterns, Soil Erosion, and Siltation

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements would require grading and excavation to reconfigure existing drainage patterns and affirm that connections to existing drainage infrastructure are maintained and/or improved. 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, potentially resulting in substantial erosion on adjacent properties. If not properly managed, any increases in sediment load from the construction area could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas. Prior to implementation of mitigation, effects related to erosion would be adverse.

Other cumulative projects that may be constructed at the same time as the Build Alternative and Malabar Yard railroad improvements, such as the Metro Division 20 Portal Widening and Turnback Facility Project (#3) and the 520 Mateo mixed use development project (#18) could contribute to a cumulative increase in sediment load and concentrated runoff into the Los Angeles River. Mixed-use development construction projects often require demolition, excavation, stockpiling soils, grading, and trenching. The Build Alternative and Malabar Yard railroad improvements in conjunction with cumulative projects may contribute to effects related to increased soil exposure and siltation.

However, any cumulative projects that disturb one or more acres of soil are likely subject to the NPDES General Permit for Stormwater Discharges from Construction Activities. Mitigation Measure HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8 of Appendix Q of this EIS) require preparation and implementation of SWPPPs by a Qualified SWPPP Developer to minimize effects related to drainage patterns and erosion. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to drainage patterns, soil erosion, and siltation when combined with other projects in the cumulative geographic area.

Operations

The Build Alternative would permanently increase impervious surfaces in Project study area by 5.3 acres in non-Caltrans ROW and 0.14 acres in Caltrans ROW. Prior to implementation, effects on drainage patterns would be adverse. Other transit, mixed use, and public service projects could contribute to additional acres of impervious surfaces once constructed, which could lead to an increase in the volume and velocity of runoff during a storm event. Cumulative projects that would result in new impervious surfaces on previously vacant or partially vacant lots such as Metro Center Street Project - ESOC (#1), the Camden Arts and College station mixed-use developments (#15 and #30), and the 1st and Broadway Civic Center Park Project (#39), would have the greatest potential for cumulative effects when combined with the Build Alternative. Malabar Yard railroad improvements would not increase impervious surface within the Malabar Yard study area but would replace impervious areas with pervious ballasted trackbed. Any reconstruction of impervious surfaces would be regulated to minimize potential effects on drainage or change the rate of stormwater runoff entering the public storm drain system. Once constructed, the combined effects from the total area of these projects' impervious surfaces would incrementally increase. However, other projects would likely be subject to the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, and potentially other provisions depending on the location of runoff. Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8 of Appendix Q of this EIS) include provisions for post-construction BMPs and compliance with the NPDES waste discharge requirements to minimize adverse effects related to water quality. Additionally, the project footprint for the Build Alternative and Malabar Yard rail improvements have been refined during the environmental planning process to minimize potential effects while meeting the project purpose and need. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to drainage patterns, soil erosion, and siltation when combined with other projects in the cumulative geographic area.

Stormwater

Construction

Construction-related activities for the Build Alternative and Malabar Yard railroad improvements could result in the mobilization and transportation of sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemical pollutants from Project-related construction sites. These effects may vary depending on the type and amount of waste that could end up in the Los Angeles River. Prior to implementation of mitigation, effects related to stormwater would be adverse. Other projects in the Los Angles Watershed and ongoing uses (as described under the cumulative condition) may contribute additional sources of polluted runoff though accidental leaks or spills, soil excavation, vegetation removal, ground disturbances, or through permitted stormwater discharges.

Other nearby projects could also increase stormwater runoff, potentially affecting the capacity of drainage systems in the vicinity of the cumulative geographic area. Cumulative projects which are

expected to be constructed at the same time as the Build Alternative such as the Metro LAUS Forecourt and Esplanade Improvements Project (#29) and the Metro *Connect US Action Plan* and Eastside Access Improvements (formerly Los Angeles Union Station and First/Central Linkages Study) (#10) would have the greatest potential for contributing to cumulative effects; however, the potential for exposed soils and accidental leaks or spills would be minimized during the construction phase with implementation of mitigation.

Future projects are likely subject to existing NPDES permitting requirements and local stormwater ordinances depending on the amount of ground disturbance, type of project, and location. This permitting framework minimizes the cumulative effects associated with stormwater pollutants and drainage capacity. Mitigation Measures HWQ-1 and HAZ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measures HWQ-1 and HAZ-1 (described in Section 3.8 of Appendix Q of this EIS) require preparation of SWPPPs and HMMPs to minimize effects related to stormwater runoff. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to stormwater when combined with other projects in the cumulative geographic area.

Operations

As discussed above, the Build Alternative would increase impervious surface in the Caltrans ROW by 0.14 acres. Because the runoff associated with the US-101 overhead viaduct would not exceed the capacity of the tributary Caltrans system and only a small amount of stormwater north of the Caltrans ROW would be added to the viaduct area, effects related to stormwater capacity in this area would be negligible. In non-Caltrans ROW, impervious surfaces would increase by 5.3 acres. Prior to implementation of mitigation, effects related to stormwater would be adverse. Other transit, mixed use, and public service cumulative projects could contribute to additional acres of impervious surfaces, which could exceed the capacity of existing drainage systems. Projects which could cumulatively affect drainage capacity include Care First Village Phase 2 (#5) and the College Station mixed-use development (#30) (located west of Segment 1), Metro LAUS Forecourt and Esplanade Improvements Project (#29) (located west of Segment 2), and the Vernon Westside Zone Change and Plan Amendment (#46) and 1591 E. Vernon Ave Apartments project (#47) (approximately 1 mile northwest of the Malabar Yard railroad improvements). The magnitude of cumulative effects would depend on how many new acres of impervious surfaces are constructed in the vicinity of the Project study area and Malabar Yard study area, and if reconstruction of impervious surfaces concentrates runoff to the same drainage systems. New construction projects would be also subject to NPDES permitting requirements and local stormwater ordinances upon project implementation, as discussed previously. In addition, implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8 of Appendix Q of this EIS) would minimize potential effects related to stormwater by requiring post construction BMPs. As such, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to stormwater when combined with other cumulative projects in the cumulative geographic area.

Flooding

Construction

The Build Alternative and Malabar Yard railroad improvements would not increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation during construction beyond existing conditions. In addition, the Build Alternative and Malabar Yard railroad improvements would not increase or negatively affect the Project study area or Malabar Yard study area's vulnerability to levee and dam failure during construction. As such, no adverse effects related to flooding during the construction phase are anticipated. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to flooding when combined with other cumulative projects in the cumulative geographic area.

Operations

The Build Alternative would result in improvements or modifications to drainage areas within the Project study area and Malabar Yard study area to maintain similar drainage flow patterns and to accommodate increased runoff volumes, peak flow, and reduced time of concentration. The Build Alternative would not expose people or structures to a significant flooding related risk beyond existing conditions during operations. The Build Alternative and Malabar Yard railroad improvements would be designed and constructed in accordance with standard engineering practices to limit exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. No adverse effects related to flooding during the operations phase are anticipated. While the potential for flooding does exist, and future development in nearby flood hazard areas may occur, any future projects would likely be subject to floodplain management regulations. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to flooding when combined with other cumulative projects in the cumulative geographic area.

Water Quality Standards and Waste Discharge Requirements

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements, in combination with the existing pollutant sources (as discussed under Cumulative Condition), could result in a temporary adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Prior to implementation of mitigation, effects related to water quality would be adverse. The Build Alternative and Malabar Yard railroad improvements are located in a highly urbanized area consisting primarily of impervious surface. Increased development from construction of cumulative projects would result in new areas of impervious surface and changes in land use that could introduce new sources of runoff pollution under the cumulative condition that could affect surface water quality.

The magnitude of these cumulative effects would depend on the type of project, how much ground disturbance would occur, and if the proposed project has the potential to expose or transport

existing soil or groundwater contaminants. The Build Alternative and Malabar Yard railroad improvements in conjunction with other cumulative projects requiring demolition and projects requiring soil excavation such as the 350 South Figueroa Project (#36) and the Arts District Center Project (#38), may contribute to effects on water quality from exposing or transporting existing soil or groundwater contaminants. The total area of disturbance of the Build Alternative and Malabar Yard railroad improvements combined with other cumulative transit and development projects in the cumulative geographic area is unknown at this time. However, each project disturbing more than 1-acre would likely be subject to NPDES permitting requirements and include BMPs to avoid adverse effects on water quality and local hydrology. Smaller projects may be subject to the City of Los Angeles or the City of Vernon's LID Ordinance, which provide stormwater pollution control requirements. In addition, each future project may be required to 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. Mitigation Measures HWQ-1, HWQ-5, and HWQ-6 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measures HWQ-1 through HWQ-3 (described in Section 3.8 of Appendix Q of this EIS) would reduce potential for adverse effects. These mitigation measures require implementation of SWPPPs and compliance with local dewatering requirements.

Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse effect related to water quality when combined with other cumulative projects in the cumulative geographic area.

Operations

During operation of the Build Alternative and Malabar yard railroad improvements, minor amounts of metals from brake dust, oil and grease originating from train cars (and the concourse and platforms at LAUS for the Build Alternative), could discharge pollutants into existing drainage systems. Prior to implementation of mitigation, effects related to water quality would be adverse. Project-related pollutants, in combination with pollutants from existing facilities and other cumulative projects, could contribute to adverse water quality effects to the Los Angeles River watershed. However, the greatest contributor to adverse water quality effects would come from existing industrial and commercial facilities, highways and other roads, and other urban developments as described under the Cumulative Condition. New mixed-use, transit, public facilities, and other development projects listed in Table 3.16-2 could also affect water quality standards; however, these projects would likely be subject to NPDES permitting requirements and local ordinances. Mitigation Measures HWQ-2, HWQ-3, HWQ-4 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8 of Appendix Q of this EIS) include provisions for post-construction BMPs and compliance with the NPDES waste discharge requirements to minimize adverse effects on water quality. Operation of the Build Alternative and Malabar Yard railroad improvements would

not cause an adverse cumulative effect related to water quality when combined with other cumulative projects in the cumulative geographic area.

Geology, Soils, and Seismicity

Geographic Area

The cumulative geographic area for evaluating impacts associated with geology, soils, and seismicity consists of the Project study area and Malabar Yard study area. This area was chosen because it includes all the geologic units that are partially overlain by the Build Alternative and Malabar Yard railroad improvements project footprint.

Cumulative Condition

Together, the Build Alternative and Malabar Yard railroad improvements, combined with other reasonably foreseeable cumulative projects identified in Table 3.16-2, constitutes the cumulative condition relevant to geology, soils, and seismicity. Although the Project study area and Malabar Yard study area are 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 which would have potential to affect the project during the construction phase (e.g., ground shaking, liquefaction, dam failure, landslide). Cumulative projects identified in Table 3.16-2 would be built in a seismically active region.

Contribution of the Build Alternative and Malabar Railroad Improvements

Seismic Ground Shaking or Seismic-Related Ground Failure, including Liquefaction

Construction

The Build Alternative and Malabar Yard railroad improvements, and other cumulative projects listed in Table 3.16-2 within the cumulative geographic area, would be subject to ground shaking and associated soil hazards from an earthquake occurring along one of several major active or potentially active faults in Southern California. However, construction of the Build Alternative and Malabar Yard railroad improvements in combination with cumulative projects would not increase the probability of seismic grounding shaking nor would it exacerbate existing hazards related to seismic ground shaking or seismic-related ground failure. The Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to seismic ground shaking or seismic-related ground failure when combined with other cumulative projects in the cumulative geographic area.

Operation

During operation, the Build Alternative, Malabar Yard railroad improvements, and other cumulative projects such as Care First Village Phase II (#5) and the mixed-use development at 700 Cesar Chaves Avenue (#16) would be susceptible to seismic hazards that could result in property damage. Once operational, the probability that infrastructure associated with the Build

Alternative, Malabar Yard railroad improvements and other cumulative projects would be subject to strong seismic shaking during the lifespan of the Project is considered high due to the proximity of known active faults in the region and the seismic nature of Southern California. However, no habitable structures are proposed for the Build Alternative or Malabar Yard railroad improvements and infrastructure would be designed in accordance with appropriate industry standards, including established engineering and construction practices. These design measures would reduce the potential for property damage from seismic hazards. Cumulative projects are not likely to increase seismic risks in the cumulative geographic area. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to seismic hazards or liquefaction when combined with other cumulative projects in the cumulative geographic area.

Soil Erosion

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements would include ground-disturbing activities and potential for soil erosion. Prior to implementation of mitigation, effects related to soil erosion would be adverse. The Build Alternative and Malabar Yard railroad improvements in conjunction with other cumulative projects such as the Metro Division 20 Portal Widening and Turnback Facility Project (#3) and the 520 Mateo mixed-use development project (#18), may contribute to effects related to soil erosion. Implementation of Mitigation Measure HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8 of Appendix Q of this EIS) require preparation of SWPPPs to minimize potential adverse effects related to soil erosion. Implementation of applicable regulatory requirements would reduce the potential for substantial erosion impacts resulting from construction activities. Other cumulative projects would be required to comply with applicable NPDES requirements including the General Construction Permit, at a minimum, and adhere to applicable BMP requirements. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to soil erosion when combined with other cumulative projects in the cumulative geographic area.

Operation

Once constructed, Build Alternative, Malabar Yard railroad improvements, and other cumulative projects would not have a substantial amount of exposed surface that could be subjected to accelerated soil erosion during operation (see Section 3.8, Floodplains, Hydrology, and Water Quality for details). While the throat segment and run-through segment of the Project study area for the Build Alternative would still include exposed surfaces; the placement of ballast and other soil protection materials would provide stabilization to prevent erosion. Once the Malabar Yard railroad improvements have been constructed, there would not be a substantial amount of exposed surface that could be subjected to accelerated soil erosion during operations. The placement of ballast and other soil protection materials would provide stabilization to prevent erosion. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements

would not cause an adverse cumulative effect related to soil erosion when combined with other cumulative projects in the cumulative geographic area.

Subsidence, Lateral Spreading, and Corrosive or Unstable Soils

Construction

The Build Alternative and Malabar Yard railroad improvements are not located in an area prone to landslides or hydrocollapse; however, would be, along with other planned transit and development projects such as the Metro Center Street Project (#1) and the Metro Connect US Action Plan and Eastside Access Improvements (#10), constructed in areas that are susceptible to settlement and moderate to severe soil corrosion. The effects of settlement and soil corrosion during construction are generally not cumulatively additive across projects. Implementation of Mitigation Measure GEO-1 (described in Section 3.9, Geology, Soils, and Seismicity) and Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9 of Appendix Q of this EIS) would require preparation of a final geotechnical report that would address remediation of potential effects relative to collapsible and corrosive soils during construction. Additionally, the Build Alternative and Malabar Yard railroad improvements would conform to guidelines specified by relevant transportation and building agencies and codes. With implementation of mitigation measures and adherence to applicable design standards, potential effects from unstable soil during construction of the Build Alternative and Malabar Yard railroad improvements would be minimized. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to landslides or hydrocollapse when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative, Malabar Yard railroad improvements, and other planned transit and development projects in the cumulative geographic area such as College Station (#30) may be operational on corrosive soils, which could weaken foundations and damage structures. Prior to implementation of mitigation, effects related to corrosive soils would be adverse. The Build Alternative and Malabar Yard railroad improvements would be required to adhere to guidelines specified by relevant transportation and building agencies and codes, as well as Mitigation Measure GEO-1 (described in Section 3.9, Geology, Soils, and Seismicity) and Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9 of Appendix Q of this EIS), which requires the use of coated or corrosion-resistant steel or concrete materials. This would minimize potential for structural failure resulting from corrosive soils. Additionally, the final geotechnical report required by Mitigation Measure GEO-1 and Malabar Yard Mitigation Measure GEO-1 would address remediation of any potential effects resulting from corrosive soils. With implementation of these measures, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to corrosive soils when combined with other cumulative projects in the cumulative geographic area.

Expansive Soils

Construction

Preliminary geotechnical investigations indicate that the Build Alternative and other planned transit and development projects listed in Table 3.16-2 are located in an area that is considered to have a low potential for soil expansion. Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could result in uplift pressures that could lead to structural damage to both track improvements and signal, safety, and civil improvements prior to implementation of mitigation. Prior to implementation of mitigation, effects related to expansive soils would be adverse. Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9 of Appendix Q of this EIS) requires improvements to be constructed pursuant to the professional recommendations in a final geotechnical report to minimize the potential for construction-related hazards resulting from expansive soils. Cumulative projects are unlikely to exacerbate the potential for expansive soil hazards in the Malabar Yard study area.

In addition, proposed infrastructure associated with the Build Alternative and Malabar Yard railroad improvements would be constructed in accordance with standard engineering practices to minimize adverse effects related to expansive soils. Other cumulative projects would be subject to investigation of geologic conditions to determine presence of expansive soils on site, and facilities would be required to be implemented in accordance with standard engineering practices. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to expansive soils when combined with other cumulative projects in the cumulative geographic area.

Operation

As discussed above, Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could have an adverse effect on proposed infrastructure during operations. However, Malabar Yard railroad improvements would be constructed in accordance with standard engineering practices, including those summarized in Table 3.9-1 of Appendix Q of this EIS. Additionally, implementation of Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9 of Appendix Q of this EIS) would minimize potential for railroad improvements to be subject to expansive soils during operations. Operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to expansive soils when combined with other cumulative projects in the cumulative geographic area.

Hazardous Waste and Materials

Geographic Area

The geographic area for evaluating cumulative impacts on hazardous waste and materials is the Project study area including a 0.5-mile buffer, and the Malabar Yard study area including a 0.25-mile buffer.

Cumulative Condition

The combined environmental influence of the past, present, and reasonably foreseeable future changes described in Table 3.16-2, constitutes the cumulative condition relevant to hazardous waste and materials. Most future development projects identified in Table 3.16-2 are mixed-use, transit, commercial, and public service projects, where hazardous materials would not be frequent or in large quantities compared to existing industrial uses. REC sites are present in and adjacent to the Project study area and Malabar Yard study area.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Transport, Use, or Disposal of Hazardous Materials

Construction

The Build Alternative and Malabar Yard railroad improvements would involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction, which could pose a hazard to construction employees, the public, and the environment if an accidental release were to occur. Prior to implementation of mitigation, effects related to storage, use, disposal, and transport of hazardous materials would be adverse. Similarly, future development projects may require the transportation or disposal of hazardous materials and hazardous wastes, depending on the nature of the project. For example, Metro Center Street Project (#1), Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2), Care First Village Phase 2 (#5), 700 Cesar Chavez Avenue (#16), 1591 E. Vernon Ave Apartments (#46), and Rail to Rail/River Active Transportation Corridor (#47), are all located in the Project study area or Malabar Yard study area and would likely require the use of fuel and lubricants for construction equipment. In addition, these projects could generate hazardous materials from demolition of existing structures or asphalt. However, these projects are unlikely to exacerbate the potential for an accidental spill or release of hazardous materials at the Project study area or Malabar Yard study area. 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 Build Alternative, Malabar Yard railroad improvements, and other cumulative projects would be implemented in compliance with these existing hazardous materials laws, regulations, and policies. Further, with implementation of Mitigation Measure HAZ-1 (described in Section 3.10, Hazardous Waste and Materials) and Malabar Yard Mitigation Measure HAZ-1 (described in Section 3.10 of Appendix Q of this EIS) which both require implementation of a Construction HMMP, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to the transportation, use, or disposal of hazardous materials when combined with other cumulative projects in the cumulative geographic area.

Operations

Operational activities and practices involving the routine transport, use, and storage of potentially hazardous materials would remain similar to existing conditions during operations of the Build

Alternative and Malabar Yard railroad improvements. Heavy maintenance activities would continue offsite 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. Cumulative projects would not affect the routine transport, use, storage, and disposal of hazardous materials under the Build Alternative and Malabar Yard railroad improvements. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to the transportation, use, or disposal of hazardous materials when combined with other cumulative projects in the cumulative geographic area.

Risk of Hazardous Materials Release into the Environment

Construction

Cumulative projects in combination with the Build Alternative, could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants. The potential for cumulative projects to expose contaminated soil or groundwater would depend on many factors including the depth of excavation, the proximity to existing contaminants, the extent of soil or groundwater contamination, and any remediation or mitigation that is applied. As such, there are uncertainties regarding the potential for cumulative projects to release hazardous materials into the environment. However, if contaminated soil or groundwater is transported, it is reasonable to assume that this would be conducted in accordance with federal, state, and local regulatory requirements (including Hazardous Materials Transportation Act [1975], Hazardous Materials Transportation Uniform Safety Act [1990]).

The close proximity of the Build Alternative and Malabar yard railroad improvements to existing RECs could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) during construction activities. Demolition of older railroad ties treated with creosote and newer ties treated with chromated copper arsenate can release heavy metals including PAHs and arsenic. Construction activities could also release herbicides that were applied to combat weeds within the railroad ROW, PAHs and heavy metals from coal ash and cinders in track ballast that would be removed, and volatile and semi-VOCs. Soil vapor intrusion from CH_4 seeps and area-wide groundwater contamination could also occur if changes in vapor migration pathways result from construction of the Build Alternative. The Build Alternative and Malabar Yard railroad improvements would also require the demolition of a limited number of existing structures that may contain asbestos or lead-based paint. Other cumulative projects involving demolition (such as Camden Arts mixed-use development [#15], 1024 Mateo Project [34], 350 South Figueroa Project [36], and Arts District Center Project [#38]) may also encounter asbestos or lead-based paint. Prior to implementation of mitigation, effects related to exposure of hazardous materials during construction of the of the Build Alternative and Malabar Yard railroad improvements would be adverse. However, with implementation of Mitigation Measures HAZ-1 through HAZ-8 (described in Section 3.10, Hazardous Waste and Materials) and Malabar Yard Mitigation Measures HAZ-1 through HAZ-6 (described in Section 3.10 of Appendix Q of this EIS), construction of the Build Alternative and Malabar Yard railroad improvements would not re cause

an adverse cumulative effect related to hazardous materials release when combined with other cumulative projects in the cumulative geographic area.

Operations

Future operations at LAUS, Malabar Yard, and other industrial facilities in the geographic area would involve the use of hazardous materials which could be subject to accidental release. Cumulative projects identified in Table 3.16-2 could also involve the use of hazardous materials; however, most of these projects are mixed-use, transit, commercial, and public service projects, where hazardous materials would not be frequent or in large quantities compared to existing industrial uses. Operation of the Build Alternative and Malabar Yard railroad improvements would be similar to existing conditions, and the handling of hazardous materials would be subject to approval by the applicable regulatory agency. No change to the nature or magnitude of the risk is expected. As such operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to hazardous materials release when combined with other cumulative projects in the cumulative geographic area.

Hazardous Emissions or Handling of Hazardous Waste or Materials within 0.25 mile of an Existing or Proposed School

Construction

The following cumulative projects are located within 0.25 mile of Albion Elementary School, PUC Excel Charter Academy, Ann Street Elementary School, Metro Gateway Childhood Development Center, Felicitas and Gonzalo Mendez Senior High School, Utah Elementary School, La Petite Academy (First 5 LA Headquarters), Beyond the Bell, Harry Pregerson Child Care Center, or the Southern California Institute of Architecture:

- College Station (#30), west of Ann Street Elementary School
- Metro Los Angeles River Path Project (#6), west of Felicitas and Gonzalo Mendez Senior High School, Albion Elementary School, PUC Excel Charter Academy, and Utah Elementary School
- Park 101 (#7), southwest of La Petite Academy (First 5 LA Headquarters)
- Metro LAUS Forecourt and Esplanade Improvements Project (#29), northwest of Beyond the Bell
- Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2), east of the Southern California Institute of Architecture
- Metro Alameda Street Mobility Project (#45), east of La Petite Academy (First 5 LA Headquarters) and Metro Gateway Childhood Development Center and north of Harry Pregerson Child Care Center
- Metro WSAB Transit Corridor (#9), south of La Petite Academy (First 5 LA Headquarters)

There are no schools located within the Malabar Yard study area. Prior to implementation of mitigation, effects related to exhaust emissions and fugitive dust would be adverse. The Build Alternative may contribute to effects related to construction emissions and fugitive dust if the construction timeframe overlaps with the construction timeframe for any of the seven projects listed above. However, as explained in Section 3.5, Air Quality and Global Climate Change and in Section 3.5 of Appendix Q of this EIS, Mitigation Measures AQ-1, Mitigation Measure AQ-2, Malabar Yard Mitigation Measures AQ-1, and Malabar Yard Mitigation Measures AQ-2 require implementation of fugitive dust control measures and compliance with Tier 4 exhaust requirements to reduce potential health risks associated with short term construction activities to below the SCAQMD's 10 in 1 million threshold at sensitive receptors. Hazardous emissions impacts associated with cumulative projects would also likely be evaluated in accordance with CEQA and NEPA, respectively. As such, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to handling of hazardous waste or materials within 0.25 mile of an existing or proposed school.

Operations

Prior to implementation of mitigation, effects related to increased rail emissions, fuel consumption, travel distance, idling time, and DPM emissions would be adverse. However, certain cumulative projects once constructed would contribute no or negligible hazardous emissions. For example, Metro Los Angeles River Path Project (#6), Park 101 (#7), Metro LAUS Forecourt and Esplanade Improvements Project (#29), and Metro Alameda Street Mobility Project (#45) are unlikely to produce hazardous emissions near schools once constructed. Mitigation Measure AQ-3 (described in Section 3.5, Air Quality and Global Climate Change), which requires annual emission inventories, would reduce hazardous emissions below SCAQMD's threshold of 10 in 1 million. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to hazardous emissions or handling hazardous waste or materials within 0.25 mile of an existing or proposed school when combined with other cumulative projects in the cumulative geographic area.

Hazardous Materials Sites

Construction

The Build Alternative and Malabar Yard railroad improvements would be constructed in proximity to REC sites that have the potential to affect the environment during excavation activities. Prior to implementation of mitigation, effects related to hazardous materials sites would be adverse. Site preparation, excavation, and other surface disturbing activities associated with future development projects could incrementally increase the likelihood of encountering contaminated soil and/or groundwater in the geographic area. Projects that require more extensive excavation and are more likely to contribute to cumulative effects when compared with projects requiring minimal surface disturbance. However, as discussed previously, the potential for cumulative projects to disturb existing REC sites would depend on many factors. Cumulative projects would be required to comply with existing regulations governing the handling, use, and disposal of hazardous waste. Mitigation Measures HAZ-2, HAZ-4 and HAZ-5 (described in Section 3.10,

Hazardous Waste and Materials) require preparation and implementation of professional recommendations of a Phase II ESA, parcel-specific Soil Management Plans, and coordination with DTSC to verify that construction activities on properties with LUCs would be managed in a manner protective of public health and Malabar Yard Mitigation Measures HAZ-1 and HAZ-2 (described in Section 3.10 of Appendix Q of this EIS) require preparation and implementation of an HMMP during construction and a Phase II ESA to avoid or minimize the potential for risks associated with hazardous materials sites. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to hazardous materials sites when combined with other cumulative projects in the cumulative geographic area.

Operations

During operations, the identified hazardous materials sites would not be disturbed. As such, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to hazardous materials sites when combined with other cumulative projects in the cumulative geographic area.

Public Utilities and Energy

Geographic Area

The cumulative geographic area for evaluating impacts on public utilities is the SCAG regional planning area, which includes the service areas of public utility providers. This area was used to capture impacts associated with construction and operation of the Build Alternative and Malabar Yard railroad improvements in combination with other planned development.

Cumulative Condition

Under the cumulative condition, ongoing urban development and population growth would continue, and the associated demand for utility services, including water, wastewater, solid waste collection, telecommunication facilities, and energy would continue. Together, construction and operation of the Build Alternative, Malabar Yard railroad improvements, and other cumulative projects listed in Table 3.16-2 constitute the cumulative condition.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Water Supply and Infrastructure

Construction

Construction related activities for the Build Alternative would require the use of locally available water supplies from the LADWP. Similarly, the Malabar Yard railroad improvements would require water supplies from the Central Basin or imported water from the Central Basin Municipal Water District via onsite water infrastructure. As discussed in Section 3.11, Public Utilities and Energy, construction of the Build Alternative would require up to 63,000 gallons of water per day or 70.5

water AFY (HDR 2016). Based on this anticipated water demand, and in the context of the supplies available to LADWP (up to 642,600 AF in 2025 and 678,800 AF in 2035),[5] no adverse effect would result from water demand to support construction of the Build Alternative because water use would represent a nominal 0.011 and 0.010 percentage of LADWP's available supply in 2025 and 2035, respectively.[6] For Malabar Yard railroad improvements, based on the anticipated water demand of 606,673 gallons (or 1.86 acre-feet) over 18 months, and in the context of the supplies available to the City of Vernon (10,860 acre-feet per year), water demand for construction of the Malabar Yard railroad improvements would represent a nominal percentage (0.017 percent) of the city's available supply from 2025 through 2045.

If constructed at the same time as other planned transit and development projects in the cumulative geographic area, such as the City Market (#22) and the mixed-use development at 745 Spring Street (#11), water demands to LADWP or the Central Basin could potentially exceed the available supply. For metro projects, the contractor for the Build Alternative and contractors for other Metro transit projects (such as but not limited to: Metro Center Street Project Emergency Security Operations Center [#1], Metro Division 20 Portal Widening and Turnback Facility Project [#3], Purple Line Extension [#8], Metro WSAB Transit Corridor [#9], and Metro Los Angeles Aerial Rapid Transit Project [#44]) would be required to implement Metro's General Management Water Use and Conservation Policy, which outlines guidance for potable water use during construction. While the total amount of water required for the construction of the Build Alternative and Malabar Yard railroad improvements combined with other cumulative projects is not known at this time, the contribution of construction water required by the Build Alternative and Malabar Yard railroad improvements is nominal compared to the available water supply. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not res cause an adverse cumulative effect related to water supply when combined with other cumulative projects in the cumulative geographic area.

The Build Alternative, Malabar Yard railroad improvements, and other cumulative projects would involve the abandonment, relocation, and/or extension of water utility lines to accommodate proposed infrastructure. However, abandonment, relocation, or extension of water utility lines would not decrease service capacity in the Project study area. Temporary disruptions to water utility service may occur during construction of the Build Alternative and the Malabar Yard railroad improvements and other cumulative projects. When considered together with other cumulative projects, the frequency or length of service interruptions could increase. However, any interruptions would be coordinated with respective utility providers to avoid any long-term decreases in service capacity. Therefore, construction of the Build Alternative and Malabar Yard

[5] The 2020 UMWP for LADWP assessed water supply reliability using three different conditions: single dry year, average year conditions, and multiple dry year conditions. According to the UWMP, the water supply for average year conditions has the highest probability of occurring. The water supply values identified above are for the average year conditions.

[6] 70.5 AFY / 642,600 AF * 100 = 0.011 percent in 2025.
70.5 AFY / 678,800 AF * 100 = 0.010 percent in 2035.

railroad improvements would not cause an adverse cumulative effect related to water supply infrastructure when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative would provide the capacity enhancements for Metro to accommodate the increase in train movements and associated passenger volumes forecast by existing (SCRRA, Amtrak, LOSSAN) and future (CHSRA) operators at LAUS. Increased passengers at LAUS would increase the water demand during operations. Operation of the Malabar Yard railroad improvements would not change existing water use in the Malabar Yard study area. As discussed in Section 3.11, Public Utilities and Energy, the Build Alternative has a projected total water usage from new passengers that is estimated to be approximately 30 AFY in the full build-out condition (2031) and approximately 47 AFY in 2040, both of which represent an increase above the 2016 baseline conditions of approximately 20 AFY. The incremental increase in water demand associated with operation of the Build Alternative would occur over at least 20 years in correlation to the forecasted increase in train trips and associated ridership at LAUS. When considered with train increases from other planned transit projects, such as the Burbank to LA and LA to Anaheim Project Sections of the California HSR System (#2) and the WSAB Line Transit Corridor (#9), the cumulative increase in water demand from additional passengers could result in an adverse effect on available water supply.

To support the policies listed in Metro's *Water Action Plan*, the planning, design, and construction of the Build Alternative and other planned cumulative projects would be required to address minimum requirements for water conservation, and concourse-related improvements would be designed to comply with the Metro Energy and Sustainability policy to achieve at least a LEED® Silver rating. Additionally, the Build Alternative is consistent with current planned land uses, and as a result is also anticipated to have been accommodated for within the LADWP's UWMP projections for water supply and demand through 2040. Based on these considerations, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to water supply and infrastructure when combined with other cumulative projects in the cumulative geographic area.

Drainage Capacity and Infrastructure

Construction

During construction of the Build Alternative, Malabar Yard railroad improvements, and other cumulative projects in Table 3.16-2, existing stormwater drainage infrastructure would be utilized in conjunction with construction activities that utilize water. The Build Alternative and Malabar Yard railroad improvements would require grading and excavation which could have direct impacts on prevailing drainage patterns and volume of stormwater runoff entering the public storm drain system.

As discussed in Section 3.8, Floodplains, Hydrology, and Water Quality, the existing drainage pipelines within the Project study area have adequate capacity and could accommodate runoff at

buildout; however, reconfiguration or realignment of storm drain infrastructure may be required during construction. Prior to implementation of mitigation, effects related to construction-related changes in drainage patterns, including increases in the volume and rate of runoff would be adverse. The Build Alternative and Malabar Yard railroad improvements in conjunction with other cumulative projects such as the Metro Division 20 Portal Widening and Turnback Facility Project (#3) and the 520 Mateo mixed use development project (#18), may contribute to effects on drainage infrastructure and could exceed the existing infrastructure's capacity.

However, the Build Alternative, Malabar Yard railroad improvements, and other planned cumulative projects, are required to comply with NPDES permitting requirements and incorporate construction site BMPs, such as soil stabilization and sediment control, required as part of the SWPPP to reduce effects related to runoff and drainage to the storm drain system. Implementation of Mitigation Measure HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality), and Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.11 of Appendix Q of this EIS) would minimize adverse effects. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to stormwater drainage and infrastructure when combined with other cumulative projects in the cumulative geographic area.

Operation

Once constructed, the total area of impervious surfaces for the Build Alternative may increase, and the rate and volume of runoff to the storm drain system would also increase. Malabar Yard railroad improvements would decrease impervious surface due to installation of new ballast along the new 46th Street connector railroad ROW. Prior to implementation of mitigation, effects related to drainage capacity and the public storm drain system would be adverse. As other planned cumulative projects in the cumulative geographic area are completed, this total area would incrementally increase. In addition to structural BMPS incorporated into Project design, implementation of Mitigation Measures HWQ-2, HWQ-3, and HWQ-4 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) and Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8 of Appendix Q of this EIS) that include post-construction BMP requirements would minimize adverse effects related to drainage capacity and infrastructure. Because Caltrans, Metro, CHSRA, and Cities of Los Angeles and Vernon have jurisdiction over various areas of runoff, each agency is anticipated to require different post-construction BMPs, based on applicable regulations, and each agency would retain partial responsibility for long-term maintenance of BMPs. With these requirements, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to drainage capacity and infrastructure when combined with other cumulative projects in the cumulative geographic area.

Wastewater Treatment Capacity and Infrastructure

Construction

Construction of the Build Alternative would involve the relocation, reconfiguration, and/or replacement of sanitary sewer infrastructure which typically requires temporary interruption of sewer service. Malabar Yard railroad improvements are surface level and no utility conflicts with existing wastewater facilities are expected during construction. Construction of other planned new development projects such as the Angels Landing Project (#42) and the First and Broadway Civic Center Park Project (#43) would also require the replacement or reconfiguration wastewater infrastructure, which could increase the frequency of service interruptions if construction occurs at the same time. Prior to temporary interruption of sewer service, existing sanitary sewer lines would be redirected for the continuation of service within the Project study area. These disruptions would be temporary and infrequent, consistent with interruptions typical of any urban construction project, and coordinated with approval from applicable service providers, including LASAN and the LABOE to minimize disruptions to surrounding residential and commercial utility customers. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to wastewater treatment capacity and infrastructure when combined with other cumulative projects in the cumulative geographic area.

Operation

Operation of the Build Alternative may result in increases in wastewater generation rates as a result of an increase in passengers expected through 2040. Other planned transit and mixed-use projects could add to this demand. However, the Build Alternative or Malabar Yard railroad improvements would not increase the demand for wastewater treatment facilities compared to existing conditions as no residential structures are included that would contribute to local demand increases for wastewater treatment services. In addition, local wastewater treatment plants would have adequate treatment capacity for the Build Alternative during normal and dry years. Other planned transit and development projects' wastewater demand would be evaluated during environmental review to assess local wastewater treatment plant capacity to serve respective projects. Additionally, all projects would be required to comply to local regulations and would be subject to the City's entitlement process regarding sanitary sewer facility fees. Therefore, the operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to wastewater treatment capacity and infrastructure when combined with other cumulative projects in the cumulative geographic area.

Solid Waste Collection and Landfill Capacity

Construction

Construction of the Build Alternative, Malabar Yard railroad improvements, and other planned cumulative projects would generate construction waste that would increase the demand for waste collection services and increase the amount of solid waste and debris contributed to regional landfills. Construction waste generated by the Build Alternative and Malabar Yard railroad

improvements would be removed, transported, and disposed of in accordance with the 2019 California Green Building Standards Code (CALGreen), which requires diversion of at least 65 percent of materials generated during construction and Metro's Green Construction Policy that requires construction contracts to include provisions for recycling of waste generated by construction.

Construction waste generated by the Build Alternative and the Malabar Yard railroad improvements would be adequately served by existing landfills (Scholl Canyon Landfill and Burbank Landfill Site No. 3 for the Build Alternative and Sunshine Canyon Landfill for Malabar Yard railroad improvements) which have remaining capacities and closure dates that would accommodate solid waste during construction. According to the City of Glendale's City Council, it is estimated that the Scholl Canyon Landfill will reach its fill capacity and is expected to close in December 2025 (Glendale News-Press 2022). Due to Scholl Canyon Landfill's projected closure date in 2025 (during Project construction), the remainder of construction and debris waste and non-recyclable materials from construction would be transferred to the Burbank Landfill Site No. 3. The Burbank Landfill Site No. 3 has a daily tonnage limit of 240 tons per day, a remaining capacity of 5,000,000 cubic yards, and an expected closure date of 2053 (County of Los Angeles Health Agency 2020; CalRecycle 2010). The Sunshine Canyon Landfill for Malabar Yard railroad improvements has a remaining capacity of 77,900,000 cubic yards and the anticipated closure date is 2037 (CalRecycle 2018). As such, existing landfills could accommodate the solid waste produced by the Build Alternative and Malabar Yard railroad improvements.

The Build Alternative and Malabar Yard railroad improvements in conjunction with other cumulative projects, such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2) and the Metro Alameda Street Mobility Project (#45), would contribute to the volume of waste toward landfill capacity requirements. However, other cumulative projects would be subject to the same 65-percent diversion requirements noted above pursuant to state law, and for Metro projects, general provisions of the Metro's construction contracts require recycling of waste generated by construction. Construction waste from the Build Alternative and Malabar Yard railroad improvements, would be disposed of in a landfill facility with sufficient permitted capacity to accommodate the solid waste disposal needs. Based on the waste diversion requirements noted above, landfill capacity is also anticipated to be sufficient for the combined demand. Therefore, construction the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to landfill capacity when combined with other cumulative projects in the cumulative geographic area.

Operation

Throughout operations, the Build Alternative and Malabar Yard railroad improvements would generate a negligible amount of solid waste that would typically consist of household waste (such as paper, cardboard, and plastics) that would be disposed of by rail passengers or other debris that may accumulate along the railroad ROW. Although solid waste generated by other cumulative projects, including but not limited to, the mixed-use development projects identified in Table 3.16-2 would increase the demand for waste collection services and would increase the amount of

solid waste and debris contributed to regional landfills; all solid waste disposal and recycling activities would be conducted in accordance with applicable federal, state, and local regulations in addition to applicable zero-waste goals and initiatives. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to landfill capacity when combined with other cumulative projects in the cumulative geographic area.

Telecommunication Infrastructure

Construction

Ground disturbance associated with construction of the Build Alternative and Malabar Yard railroad improvements could result in impacts to existing telecommunications infrastructure within the City of Los Angeles and the City of Vernon. Other cumulative projects in the Cities of Los Angeles and Vernon, such as the Metro Division 20 Portal Widening and Turnback Facility Project (#3) and the 520 Mateo mixed use development project (#18), may contribute to these impacts if they require telecommunication service interruptions.

During construction of the Build Alternative and Malabar Yard railroad improvements, existing telecommunications infrastructure would be protected to the greatest extent feasible. Existing utility services would be maintained throughout the construction period by relocating services into access roads and utility tunnels to protect service during construction and provide for future maintenance. Where infeasible to maintain and protect utility service during the construction period, disruptions of utility service would be temporary and minimized to the maximum extent feasible through coordination with the respective utility providers, including LADWP and AT&T, during final engineering design to avoid and/or reduce potential conflicts during construction. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to telecommunication infrastructure when combined with other cumulative projects in the cumulative geographic area.

Operation

Telecommunications infrastructure is present throughout the cumulative geographic area and long-term operation of the Build Alternative, and Malabar Yard railroad improvements in combination with other planned cumulative projects would not result in conflicts with telecommunications infrastructure because telecommunication lines would be buried under access roads and placed within utility tunnels to protect the facilities and provide for future maintenance. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to telecommunication infrastructure when combined with other cumulative projects in the cumulative geographic area.

Energy Demand, Infrastructure, and Compliance with Initiatives for Renewable Energy or Energy Efficiency

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements 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, Public Utilities and Energy. Construction of other planned cumulative projects would have similar energy requirements which could result in cumulative effects if the demand for fuel exceeded the supply. However, fuel requirements would likely be typical of common urban construction projects, temporary in nature, and would be analyzed to determine if such projects represent a substantial, permanent, or unnecessary use of energy.

For the Build Alternative, Metro's construction contractor is required to implement standard BMPs in accordance with Metro's Green Construction Policy. 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. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to energy demand when combined with other cumulative projects in the cumulative geographic area.

Operation

Operation of the Build Alternative 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 Build Alternative would indirectly contribute to reductions in regional VMT. Once constructed, other planned transit, pedestrian-oriented, and bicycle development projects in the City of Los Angeles such as the Purple Line Extension (Sections 1, 2, and 3) (#8), the WSAB Line Transit Corridor (#9), and the Metro LAUS Forecourt and Esplanade Improvements Project (#29), would improve transit connections and increase alternative transportation and facilitate cycling and walking the

in the cumulative geographic area. Additionally, the City has recently adopted and is in the planning process to update land use densities and local community plans and development regulations surrounding LAUS to advance transit-oriented development within high quality transit zones, as planned for in the 2020 RTP/SCS.

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 concourse-related improvements. Given the planning period available, energy providers have sufficient information to include the Project in their demand forecasts.

Operation of the Malabar Yard railroad improvements are not expected to require construction of new gas or electric facilities or expansion of existing facilities, nor result in unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency when combined with other future projects. Because the Malabar Yard railroad improvements would provide a shorter, direct route for BNSF trains to travel between Malabar Yard and Hobart Yard, reduced train miles and VMT from long-haul trucking would result. This would reduce gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits.

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. Therefore, the Build Alternative and Malabar Yard railroad improvements are expected to have an incremental beneficial effect and could have beneficial cumulative effects related to energy demand when combined with other cumulative projects in the cumulative geographic area.

Cultural and Paleontological Resources

Geographic Area

The cumulative geographic area for evaluating impacts associated with cultural resources consists of the APE and for paleontological resources is the RSA. The APE includes the Project Footprint for the Build Alternative and Malabar Yard railroad improvements plus a buffer of adjacent parcels.

Cumulative Condition

Together, the Build Alternative and Malabar Yard railroad improvements, combined with other reasonably foreseeable cumulative projects identified in Table 3.16-2, constitutes the cumulative condition relevant to cultural resources.

As provided in Section 3.12, Cultural Resources and Paleontological Resources, implementation of the Build Alternative may cause a substantial adverse change in the significance of the following historic properties in the APE:

- LAUS Passenger Terminal
- Vignes Street Undercrossing

- North Main Street Bridge (Bridge #53C 1010)
- Archaeological Site (CA-LAN-1575/H)

Downtown Los Angeles has a long history of human occupation from pre-contact village sites to some of the earliest settlement of the City of Los Angeles. As such, this area has the potential to contain pre-Contact and historic-era archaeological resources, as well as historic-era architectural and built environment resources. For archaeological resources, the APE is urbanized and has been subject to the past construction of infrastructure and land development; however, pre-contact and historic archaeological deposits are known to exist in the APE in both disturbed and intact contexts. Therefore, construction activities related to continued urbanization and development projected under the cumulative condition could result in exposure and disruption of cultural resources, including archaeological resources and traditional cultural properties, and could result in removal of or damage to historic architectural resources. Effects on cultural resources, including built-environment historic architectural resources, prehistoric- and historic-era archaeological resources, and traditional cultural properties, tend to be individual in nature and specific to the context of the resource and to the aspects of integrity that contribute to a resource's eligibility for listing in the NRHP. Nevertheless, because their individual significance is unknown until analyzed, potential effects on cultural resources caused by cumulative projects can collectively contribute to loss of cultural resources, often a nonrenewable resource, in the environment. In addition, implementation of multiple projects can result in cumulative impacts on particular resources, such as historic districts or landscapes that have not yet been recorded or discovered.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Cultural Resources

Construction

LAUS Passenger Terminal and Vignes Street Undercrossing – In conjunction with implementing the Build Alternative, multiple character-defining features of LAUS would be demolished or severely altered, including the pedestrian passageway, passenger ramps, platform railings, solid balustrades, platforms, butterfly shed canopies, south retaining wall, Terminal Tower, car supply building and abutting rail yard retaining wall, and Cesar Chavez Avenue Undercrossing. The Vignes Street Undercrossing, which was recorded as a separate resource but contributes the significance of LAUS, would also be demolished and replaced with a new bridge. In addition to physical impacts resulting from the demolition of these features, Project elements with modern materials and designs would introduce visual elements, such as the concourse-related improvements at LAUS, which would diminish LAUS's integrity of design, setting, feeling, and association. Prior to implementation of mitigation, effects on LAUS Passenger Terminal and Vignes Street Undercrossing would be adverse. When considered together with other cumulative projects, an adverse cumulative effect on the historical features of LAUS would occur. The settings to the south, southwest, east, and north have already been altered. The cumulative projects in and around LAUS (#29 Metro LAUS Forecourt and Esplanade

Improvements Project; #44 Metro Los Angeles Aerial Rapid Transit Project) would alter the settings to the west and would further alter the setting to the south and east such that the entire site plan immediately surrounding LAUS would have been altered, and its integrity of setting substantially diminished. The cumulative projects would also impact the integrity of design through the loss of surface parking in front of the LAUS building.

Mitigation Measure CUL-2 (described in Section 3.12, Cultural Resources and Paleontological Resources) would minimize adverse effects resulting from the Build Alternative. Development associated with cumulative projects such as the Esplanade and Forecourt Improvements Project (#29), Los Angeles Aerial Rapid Transit Project (#44), and the Alameda Street Mobility Project (#45), combined with the Build Alternative would cause some physical damage to the historic property; however, enough of the characteristics that qualify LAUS as an historic property would be preserved and it would remain eligible for the NRHP. When considering the effects of the past alterations to the LAUS's 1939 site plan and setting in conjunction with the effects of the Build Alternative in combination with cumulative projects, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect on this resource. There are other cumulative projects that would affect the Vignes Street Undercrossing. With implementation of Mitigation Measure CUL-2, construction of the Build Alternative would not cause an adverse cumulative effect related to built environment resources when combined with other cumulative projects in the cumulative geographic area.

North Main Street Bridge (Bridge #53C 1010) – Proposed safety modifications would impact character-defining features of the North Main Street Bridge. Prior to implementation of mitigation, effects on this historic property would be adverse. Mitigation Measure CUL-2 (described in Section 3.12, Cultural Resources and Paleontological Resources) requires implementation of a BETP to minimize adverse effects resulting from the Build Alternative. Because all of the Project-specific effects would be mitigated and the bridge would retain sufficient integrity to convey its significance as an early example of three-hinge bridge engineering, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to built environment resources when combined with other cumulative projects in the cumulative geographic area.

Archaeological Site CA-LAN-1575/H and Other Unknown Archaeological Resources – Past completed projects have affected portions of Archaeological Site CA-LAN-1575/H, including the construction associated with the MWD Headquarters building, the Metro Red Line Subway, the Union Station Village Apartments and Catellus Corporation Head Start Building projects, the Cesar Chavez Bus Stop Improvements Project, and the Patsaouras Plaza Busway Station Project. The boundary of Archaeological Site CA-LAN-1575/H, formerly identified within the parcel containing LAUS, has recently been expanded beyond this parcel to the east and south. Associated archaeological deposits are extremely likely to extend beyond the mapped boundary of the resource and an adverse effect may occur prior to implementation of mitigation. Given the large size of the resource (approximately 48 acres, or over 2 million square feet), past and present activities have not changed the NRHP status of Archaeological Site CA-LAN-1575/H. Mitigation Measure CUL-1 (described in Section 3.12, Cultural Resources and Paleontological Resources)

is proposed to minimize adverse effects to Archaeological Site CA-LAN-1575/H or other unknown archaeological resources that may result from implementation of the Build Alternative. However, cumulative projects may have adverse effects on Archaeological Site CA-LAN-1575/H or other unknown archaeological resources. Furthermore, even after mitigation for cumulative projects is implemented, including the Esplanade and Forecourt Improvements Project (#29) and the Alameda Street Mobility Project (#45), it may not be possible to avoid contributing features of Archaeological Site CA-LAN-1575/H or other unknown archaeological resources. Therefore, when considering the effects of the Project in combination with past, present, and probable projects, cumulative effects on Archaeological Site CA-LAN-1575/H and other unknown archaeological resources are considered adverse, even though a large portion of the site will remain undisturbed beneath existing infrastructure. Mitigation Measure CUL-1 (described in Section 3.12, Cultural and Paleontological Resources) is proposed to minimize effects of the Build Alternative on this archaeological resource, and any and unknown archaeological resources. Other related cumulative projects in the vicinity of LAUS would also be required to follow federal, state, and local regulations and ordinances to avoid or minimize effects on archaeological resources with similar mitigation measures that include archaeological data recovery and archaeological monitoring. With these measures, construction of the Build Alternative would not cause an adverse cumulative effect related to known or unknown archaeological resources when combined with other cumulative projects in the cumulative geographic area.

Malabar Yard Railroad Improvements – The Malabar Yard railroad improvements would not encroach upon or change the character of the use or physical setting of the Solar Manufacturing Corporation Building. Ground-disturbing activities associated with the Malabar Yard railroad improvements would occur in areas with elevated potential to contain buried archeological sites. Prior to implementation of mitigation, effects related to unknown archaeological resources would be adverse. Other future development projects listed in Table 3.16-2 within the cumulative geographic area would also potentially impact buried archeological sites. Implementation of Malabar Yard Mitigation Measure CUL-1 (described in Section 3.12 of Appendix Q of this EIS) would minimize potential effects during construction by requiring the preparation of an ATP and associated actions to be taken to address accidental discoveries. Therefore, with implementation of Malabar Yard Mitigation Measure CUL-1, construction of the Malabar Yard railroad improvements would not cause an adverse cumulative effect related to unknown archaeological resources when combined with other cumulative projects in the cumulative geographic area.

Operation

The anticipated noise and vibration from operation and maintenance of the Build Alternative and Malabar Yard railroad improvements would not affect any of the historic built environment properties during operations, nor alter any of the characteristics of a historic property that qualify it for inclusion in the NRHP. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to paleontological resources when combined with other cumulative projects in the cumulative geographic area.

Paleontological Resources

Construction

During construction of the Build Alternative and Malabar Yard railroad improvements, excavations and other related ground-disturbing activities have the potential to impact paleontologically sensitive deposits. Prior to implementation of mitigation, effects related to paleontological resources would be adverse. Implementation of Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12, Cultural Resources and Paleontological Resources) and Malabar Yard Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12 of Appendix Q of this EIS) would minimize potential adverse effects on paleontological resources during construction with implementation of an PMP, delivery of a Worker Environmental Awareness Program, and preparation of arrangements for curation of significant fossils that could be recovered. Cumulative projects with potentially adverse effects 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. With implementation of these mitigation measures, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to paleontological resources when combined with other cumulative projects in the cumulative geographic area.

Operation

Operation of the Build Alternative and Malabar Yard railroad improvements would not disturb below ground resources. Since intact paleontological resources, if present in the Project study area or Malabar Yard study area, are likely buried 6 feet bgs, there would be no anticipated corresponding effects on paleontological resources during operation. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to paleontological resources when combined with other cumulative projects in the cumulative geographic area.

Economic and Fiscal Impacts

Geographic Area

The geographic area for evaluating cumulative impacts on economic and fiscal conditions is Los Angeles County, which includes the Project study area and Malabar Yard study area.

Cumulative Condition

Under the cumulative condition, current employment, income, and tax revenue trends would continue as described in Section 3.13.4 and in Appendix Q of this EIS (Section 3.13.3). Commercial, industrial, and residential development would continue throughout the SCAG regional planning area and is expected to increase property tax revenues. Mixed-use development projects, residential housing, and transit projects would continue to support growth in jobs, housing, and population.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Employment, Income, and Tax Revenues

Construction

The Build Alternative and Malabar Yard railroad improvements, combined with cumulative projects, is anticipated to generate direct, indirect, and induced economic effects on a scale that would be felt throughout the County's economy. Job displacement and property tax losses from industrial/manufacturing and commercial ROW acquisitions would occur for the Build Alternative and both design options for the Malabar Yard railroad improvements. However, both the Build Alternative and Malabar Yard railroad improvements are expected to have an incremental beneficial effect when compared to existing conditions with regards to employment, income, and tax revenue that would more than offset the ROW acquisition effects. In addition, construction and operation of other development projects may contribute additional economic benefits similar to the Build Alternative and Malabar Yard railroad improvements. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would contribute to a beneficial cumulative effect related to employment, income, and tax revenue when combined with other cumulative projects in the cumulative geographic area.

Operations

Cumulative effects associated with operation of the Build Alternative and Malabar Yard railroad improvements would be the same as described above under construction. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would contribute to a beneficial cumulative effect related to employment, income, and tax revenue when combined with other cumulative projects in the cumulative geographic area.

Safety and Security

Geographic Area

The cumulative geographic area for evaluating impacts associated with safety and security for the Build Alternative and the Malabar Yard railroad improvements consists of the relevant Project study areas within the City of Los Angeles and Vernon, respectively. This area allows for a review of cumulative projects under the cumulative condition that could affect emergency response and evacuation routes because of impacts on roadway connectivity to emergency service providers.

Cumulative Condition

Under the cumulative condition, current growth trends within the cumulative geographic area would continue. As discussed in Section 3.15, Socioeconomics and Communities, the population of the City of Los Angeles is projected to increase approximately 18 percent through 2020. This projected population growth would result in increased demand on emergency response services. Projected population growth through 2040 combined with the Build Alternative, Malabar Yard

railroad improvements, and other reasonably foreseeable cumulative projects identified in Table 3.16-2, constitutes the cumulative condition relevant to safety and security.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Community Safety Services

Construction

Prior to implementation of mitigation, during construction of the Build Alternative and Malabar Yard railroad improvements, temporary road closures and construction-related vehicle traffic would result in intersection delays or access disruptions which could affect response times for emergency, police, and fire service. Prior to implementation of mitigation, effects related to the local transportation network would be adverse.

The Build Alternative and Malabar Yard railroad improvements may contribute to construction-related effects on the local transportation network if constructed at the same time as other cumulative projects. Concurrent construction activities associated with the Metro Division 20 Portal Widening and Turnback Facility Project (#3), the 520 Mateo mixed-use development (#18), and planned mixed-use developments on 7th Street (#24 and #25) could result in an increase in temporary road closures and an increase traffic and congestion, which would result in temporary interference with emergency vehicle access and the associated increase in response times. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS) would minimize these temporary disruptions with implementation of a TMP to reduce construction-related vehicular traffic delays and effects related to emergency response and access. Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. In this context, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to community safety services when combined with other cumulative projects in the cumulative geographic area.

Operations

The localized operational, safety, and accessibility upgrades in and around LAUS proposed as part of the Build Alternative would meet existing demand and future growth that is planned for at LAUS. Additionally, operation of the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may affect response times or performance objectives of emergency responders during operations. In addition, a potential roadway hazard may occur from vehicle queuing along Seville

Avenue, which in turn may also affect response times. Prior to implementation of mitigation, effects related to response times, or performance objectives of emergency responders would be adverse. Other planned transportation projects in the geographic area, including the Burbank to Los Angeles and Los Angeles to Anaheim project sections of the of the planned HSR system (#2), and the Metro Alameda Street Mobility Project (#45), would expand existing public transportation options, build new pedestrian and bicycle paths, and link existing facilities to other transportation services. These improvements are intended to reduce congestion and increase safety within the Project study area and Malabar Yard study area and would contribute to a cumulatively benefit by positively affecting response times and performance objectives of emergency responders. Implementation of Malabar Yard Mitigation Measure TR-3 through TR-5 (described in Section 3.3 of Appendix Q of this EIS) would minimize operations-related effects related to response times or performance objectives of emergency responders during operations. Malabar Yard Mitigation Measure TR-6 (described in Section 3.3 of Appendix Q of this EIS) minimizes the potential roadway hazard; however, to establish the level of effectiveness of this mitigation measure, further coordination with CPUC and the City of Vernon is required. Therefore, the Build Alternative and Malabar Yard railroad improvements could cause an adverse cumulative effect related to community safety services in the cumulative geographic study area.

Safety Conditions

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements may result in the use of heavy equipment in close proximity to pedestrians and bicyclists, particularly near LAUS and on affected roadways. Prior to implementation, effects related to safety conditions would be adverse. Construction of other cumulative projects in the cumulative geographic area, including the Metro LAUS Forecourt and Esplanade Improvements Project (#29) and the Metro Los Angeles Aerial Rapid Transit Project (#44), and 1591 E. Vernon Ave Apartments (#47), may contribute to effects related to safety conditions if these projects were to be constructed at the same time as the Build Alternative or Malabar Yard railroad improvements. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS), require specific safety measures (e.g., barriers, detours, safe sidewalks, etc.) to be implemented to maintain safety for pedestrians, bicyclists, LAUS patrons, and construction workers throughout construction. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to safety conditions when combined with other cumulative projects in the cumulative geographic area.

Construction activities associated with the Build Alternative would also result in effects on public health resulting from air quality emissions of construction vehicles. Prior to implementation of mitigation, air quality effects related to public health of construction workers and sensitive receptors near the Project study area for the Build Alternative would be adverse. Other cumulative projects in the geographic area may be constructed at the same time, increasing potential effects on air quality. Implementation of Mitigation Measures AQ-1 and AQ-2 (described in 3.5, Air Quality

and Global Climate Change) and Malabar Yard Mitigation Measures AQ-1 and AQ-2 (described in Section 3.5 of Appendix Q of this EIS) would reduce emissions from the Build Alternative and Malabar yard railroad improvements.

- Mitigation Measure AQ-1 and Malabar Yard Mitigation Measure AQ-1 require regular watering or other dust preventive measures using procedures specified in SCAQMD Rule 403 to reduce daily fugitive dust emissions.
- Mitigation Measure AQ-2 and Malabar Yard Mitigation Measure AQ-2 require all on-site construction equipment greater than 50 horsepower 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.

With implementation of these mitigation measures, the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to the public health of construction workers and sensitive receptors.

Operation

Once constructed, increased train movements facilitated by the Build Alternative, Malabar Yard railroad improvements, and other planned transit projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the of the planned HSR system (#2), and the WSAB Line Transit Corridor (#9), may contribute to effects related to the potential for train-to-train collisions and/or other accidents/incidents involving pedestrians, bicyclists, or vehicles, or derailment. For the Malabar Yard railroad improvements, the potential roadway hazard that may occur from vehicle queuing along Seville Avenue may expose pedestrians, bicyclists, or vehicles to accidents/incidents. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements could cause an adverse cumulative effect related to safety conditions when combined with other cumulative projects in the cumulative geographic area.

Security Conditions

Construction

Construction of the Build Alternative and Malabar Yard railroad improvements are not expected to increase crime at LAUS, throughout the Project study area, or the Malabar Yard study area. Existing security measures are already in place within and adjacent to LAUS. In addition, criminal activity is expected to be typical of crimes that occur at similar construction sites, such as theft of equipment and materials or vandalism and trespassing. However, the construction contractor for both the Build Alternative and Malabar Yard railroad improvements would be responsible for providing fencing, no trespassing signage, security lighting, and on-site security during and after construction hours. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to security conditions when combined with other cumulative projects in the cumulative geographic area.

Operation

Both human-caused and natural threats present security risks to the Build Alternative, Malabar Yard railroad improvements, and other planned development projects. Operation of the Build Alternative and Malabar Yard railroad improvements would not exacerbate existing conditions regarding security at LAUS or within the Project study area and Malabar Yard study area. Existing security measures are already in place within and adjacent to LAUS. Security of the Malabar Yard railroad improvements during operations would be maintained by City of Vernon Police Department in conjunction with BNSF railroad police officers commissioned under the provisions of 49 CFR 207. With the incorporation of design elements that maximize security in conjunction with the amending of Metro's existing safety and security plan to accommodate the proposed concourse-related improvements, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to security conditions in the cumulative geographic area.

Socioeconomics and Communities Affected/Minority Communities, Low-Income Communities, and Non-Minority Communities

Geographic Area

The geographic area for evaluating cumulative impacts associated with communities consists of the cities of Los Angeles and Vernon. This geographic area was selected because it includes the communities and census tracts in which the Build Alternative, Malabar Yard railroad improvements, and other planned cumulative projects are located. The geographic area for evaluating economic effects is Los Angeles County.

Cumulative Condition

Under the cumulative condition, current growth trends would continue in the City of Los Angeles. The population of the City of Los Angeles is projected to increase approximately 18 percent through 2040. The projected population growth would result in increased demand on community facilities and emergency response services. SCAG has historically assigned the City of Vernon very low housing production goals due to the industrial nature of the city. However, in the city's 2014-2021 Housing Element, the city established a policy to increase the city's population through the construction of approximately 30 to 50 low- and very low-income units. The City of Vernon is predicted to have a population of 300 in the year 2040, which indicates no substantial population growth from 2020 conditions. Compared to the City of Los Angeles, there would not be an increase demand on community facilities and emergency response services in the City of Vernon.

Construction of the Build Alternative, Malabar Yard railroad improvements, and other cumulative projects would cause temporary delays and changes in circulation patterns due to detours and delays. In addition, there is a potential for other cumulative projects, particularly larger transportation projects, such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2) and Metro WSAB Transit Corridor (#9) to require residential and/or business displacements.

Contribution of the Build Alternative and Malabar Yard Railroad Improvements

Community Facilities and Government Services

Construction

The Build Alternative and Malabar Yard railroad improvements are not anticipated to substantially increase demand for government services compared to existing conditions because LAUS and Malabar Yard would operate similarly to the existing facilities and are located within an urbanized area with the growth already forecasted in multiple planning documents. The Malabar Yard railroad improvements do not include residential development that would directly generate population growth or substantially increase the demand for fire protection and law enforcement services. The Build Alternative or Malabar Yard railroad improvements would not result in the need for additional staffing or expansion of existing government service facilities resulting in physical impacts associated with the provision of new or physically altered government service facilities. Prior to implementation of mitigation, construction of the Build Alternative and Malabar Yard railroad improvements would result in construction-related traffic delays and access restrictions to community facilities such as parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries and places of worship and the Stacy Medical Center in the City of Vernon. Prior to implementation of mitigation, effects related to community facilities and government services would be adverse. Mitigation Measure TR-1 (described in Section 3.3, Transportation) and Malabar Yard Mitigation Measure TR-1 (described in Section 3.3 of Appendix Q of this EIS) require a TMP to be prepared to minimize construction related vehicular traffic delays. The TMP will require identifying site-specific detours to maintain peak traffic flow to the degree feasible, coordination with LADOT, Caltrans, City of Vernon, private businesses, public transit and bus operators, emergency service providers, and residents, and posting advance notices prior to construction. Malabar Yard Mitigation Measures TR-2 and TR-3 (described in Section 3.3 of Appendix Q of this EIS) require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize construction-related effects on community facilities during construction. Other cumulative projects such as Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2), Care First Village Phase 2 (#5), Metro Los Angeles River Path Project (#6), and Metro WSAB Transit Corridor (#9) could have overlapping construction schedules and could contribute incrementally to construction-related traffic delays, detours, and multiple roadway closures at the same time if not properly coordinated. Implementation of Mitigation Measure TR-1 and Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize adverse effects. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to traffic delays and access to community facilities when combined with other cumulative projects in the cumulative geographic area.

Operation

No direct adverse effects are expected to community facilities such as libraries, health care facilities, or places of worship during operation of the Build Alternative. Additionally,

implementation of the Build Alternative and Malabar Yard railroad improvements would not result in the need for additional staffing or expansion of existing government service facilities resulting in physical impacts associated with the provision of new or physically altered government service facilities.

Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may affect access to one community facility during operations, the Stacy Medical Facility. In addition, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. Implementation of Malabar Yard Mitigation Measure TR-3 through TR-5 (described in Section 3.3 of Appendix Q of this EIS) would minimize operations-related effects on access to the Stacy Medical Center during operations. Malabar Yard Mitigation Measure TR-6 (described in Section 3.3 of Appendix Q of this EIS) minimizes the potential roadway hazard; however, to establish the level of effectiveness of this mitigation measure, further coordination with CPUC and the City of Vernon is required. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements may cause an adverse cumulative effect related to community facilities when combined with other cumulative projects in the cumulative geographic area.

Population Growth

Construction

While the Build Alternative, Malabar Yard railroad improvements, and other cumulative projects would generate additional short-term employment opportunities during construction, the majority of these jobs are expected to be filled by residents of the cities of Los Angeles and Vernon and surrounding communities, and these temporary jobs would cease upon construction completion. Construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to population growth when combined with other cumulative projects in the cumulative geographic area.

Operation

While the Build Alternative and other cumulative projects would generate long-term employment opportunities, the majority of these jobs are expected to be filled by residents of the cities of Los Angeles and Vernon and surrounding communities. There would be no substantial increase in population as a direct result of the Build Alternative and Malabar Yard railroad improvements. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to population growth when combined with other cumulative projects in the cumulative geographic area.

Business Displacements and the Economy

Construction

The Build Alternative would require the full or partial acquisition of seven industrial/manufacturing parcels (with two buildings or 34,784 building square feet) and two commercial parcels (with one building or 122,050 building square feet). Approximately 60 jobs could be displaced due to the demolition of the industrial/manufacturing and commercial buildings described above. Up to 46 additional jobs could be displaced upon implementation of the Malabar Yard railroad improvements. Given that there is available land within the Project study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed. Displaced businesses would be provided individualized relocation assistance under the Uniform Act to minimize adverse effects.

Other cumulative projects such as the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system (#2) would also require the acquisition of property for ROW and facilities. The extent and locations for any future property acquisitions are unknown at this point. However, relocation assistance to displaced residents and businesses would also occur in compliance with the Uniform Act. Commercial businesses adjacent to construction activities for these projects could experience temporary adverse effects due to reduced accessibility, which could result in a loss of revenue from less customers visiting these businesses. Construction impacts on businesses would be temporary but could contribute to cumulative effects to depending on the location and duration of construction. As discussed in Section 3.13, Economic and Fiscal Impacts, the majority of businesses in the cumulative geographic area are industrial/manufacturing businesses which are not dependent on local patronage that would be affected by restricted access. When combined with other cumulative projects, the Build Alternative and Malabar Yard railroad improvements are expected to result in land use changes via new transit-serving retail businesses and, thus, new retail sales. Additionally, and as discussed in Section 3.15, Socioeconomics and Communities Affected and in Section 3.15 of Appendix Q of this EIS, the Build Alternative and Malabar Yard railroad improvements would have an overall beneficial effect on the regional and local economy through generation of employment, labor income, and federal, state, and local tax revenues. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would contribute to a beneficial cumulative effect related to business displacements and economic conditions when combined with other cumulative projects in the cumulative geographic area.

Operation

Although permanent, property acquisitions and resulting business displacements and relocations would occur during the construction phase of the Build Alternative and Malabar Yard railroad improvements, operation of the Build Alternative, Malabar Yard railroad improvements, and similar planned development projects would generate employment opportunities and increase economic activity. Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect prior to implementation of mitigation. Mitigation Measure TR-3 requires

implementation of railroad improvements in the City of Vernon at BNSF's Malabar Yard to offset the loss of storage track capacity resulting from the partial acquisition of the facility. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to business displacements and economic conditions when combined with other cumulative projects in the cumulative geographic area.

Community Character and Cohesion

Construction

The Build Alternative and Malabar yard railroad improvements would not create barriers or change the character of residential communities, nor would residential communities be displaced. Therefore, construction of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to community character and cohesion when combined with other cumulative projects in the cumulative geographic area.

Operation

The Build Alternative and Malabar Yard railroad improvements would not permanently separate or sever residential populations from existing community facilities in the area or affect changes to the quality of life and/or viability of shopping areas after construction of proposed infrastructure. There would be no permanent street closures affecting residential parcels and proposed infrastructure would be similar to existing transportation uses with minimal change to existing visual character. Access and connectivity would be maintained. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect related to community character and cohesion when combined with other cumulative projects in the cumulative geographic area.

Minority Communities, Low-Income Communities, and Non-Minority Communities

As discussed in Chapter 4.0, Community Analysis, the community analysis study area is defined as the six census tracts traversed by the boundary of the Project study area and the four census tracts traversed by the boundary of the Little Tokyo District (outermost boundary of all ten census tracts). The community analysis study area also includes the following additional minority communities, low-income communities, and non-minority communities:

- Chinatown District
- William Mead Homes
- Hilda J. Solis Care First Village
- El Pueblo District
- Little Tokyo District
- Los Angeles County Men's Central Jail and Twin Towers Correctional Facility
- Federal Complex

- Arts District
- Southern Industrial District

Additionally, the Malabar Yard community analysis study area is considered a minority community because the demographic characteristics for the resident population meets the minority threshold.

Planned projects within the community analysis study area include commercial, mixed-use, and residential development, parks, pedestrian and bicycle improvements, public services, and transit improvements. Construction of these planned projects, including eight projects planned within areas where minority communities are present and where non-minority communities are present, could result in temporary or permanent effects. Temporary construction impacts could include noise, vibration, traffic detours and delay, loss of business during construction, and loss of parking. Potential long-term impacts from operations impacts could include noise, property acquisitions, potential displacement, and the potential for increased property values that would result in higher rents and prices for property. Planned development would also include beneficial effects on communities through the creation of local jobs, the potential for affordable housing requirements within residential and mixed-use development, an expanded property tax and sales tax revenues and increased connectivity provided by improved mobility.

Construction

The Build Alternative would result in adverse effects related to the following topics related to communities and neighborhoods:

- Land use and planning;
- Transportation;
- Visual quality and aesthetics;
- Air quality and global climate change;
- Noise and vibration;
- Floodplains, hydrology, and water quality;
- Geology, soils, and seismicity;
- Hazards and hazardous materials;
- Public utilities and energy; and
- Cultural and paleontological resources.

Mitigation measures, BMPs, and compliance with federal, state, and local requirements would minimize these adverse effects. However, for the Build Alternative, effects related to cultural and paleontological resources and temporary construction noise would remain adverse under NEPA even after implementation of applicable mitigation measures.

There would be no noise impacts to the additional minority communities, low-income communities, or non-minority communities considered, or the City of Vernon minority community based on the distance to construction activities associated with the Build Alternative and Malabar Yard railroad improvements. There would be noise impacts at William Mead Homes and Care First Village (minority and/or low-income communities), and the Mozaic Apartments (a non-minority and/or non-low-income community). These receptors would be subject to similar construction noise impacts at varying degrees and frequencies.

- At William Mead Homes, 41 residential units and one recreational area would be subject to construction noise that exceeds the City's 75 dBA limit.
- At Care First Village, 36 units and a playground/park would be subject to construction noise levels that exceed the City's 75 dBA limit.
- At Mozaic Apartments, 82 units would be subject to construction noise levels that would exceed the City's 75 dBA limit.

Because construction noise impacts would affect both minority and/or low-income communities and non-minority and/or non-low-income communities at a similar intensity and frequency (77 units within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit and 82 units not within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit), the temporary adverse effects associated with construction noise would not be predominantly borne by a minority and/or non-low-income community and would not result in disproportionate and adverse effects. There is a potential that construction of Phase 2 of the Care First Village could be constructed at the same time as construction in Segment 1 of the Build Alternative, which could cause an adverse cumulative effect on minority and/or low-income communities resulting from Project-related noise effects combined with other planned projects in the cumulative geographic area.

As discussed in Chapter 4.0, Community Analysis, construction of the Build Alternative would result in an adverse effect on four historic properties, including: LAUS Passenger Terminal, Vignes Street Undercrossing, North Main Street Bridge, Archaeological Site CA-LAN-1575/H, and paleontological resources. The adverse effects related to cultural resources would be directly related to the Build Alternative and the features that make these properties listed or eligible for listing on the NRHP. Additionally, there are no planned projects in the vicinity of the affected historic properties that would alter character-defining features of any of the four properties.

Adverse effects that remain following implementation of mitigation measures would be experienced equally by both the minority and/or low-income communities and non-minority and/or non-low-income communities living and working within the community analysis study area, as well as the traveling public. Adverse effects on minority and/or low-income communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority or non-low-income communities; or vice-versa. Therefore, the Build Alternative and Malabar yard railroad improvements would not cause an adverse cumulative effect on minority communities, low-

income communities, or non-minority communities related to cultural and paleontological resources when combined with other planned projects in the cumulative geographic area.

Operation

Considering the beneficial effects of the Build Alternative discussed in Section 4.6.2 of the EIS, there are no potential for adverse effects that are appreciably more severe or greater in magnitude on minority and/or low-income communities than the effects on non-minority and/or non-low-income communities; or vice-versa. For the Malabar yard railroad improvements, operational effects related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures; however, minority and/or low-income communities are not located within Malabar Yard study area where the Malabar Yard railroad improvements would be implemented. Based the location of minority and/or low-income communities relative to the Malabar Yard study area, potential roadway hazards from vehicle queuing along Seville Avenue and the associated transportation, safety and security, and impacts to community facilities would primarily be experienced by the traveling public and people who work in the City of Vernon, which includes both minority and/or low-income communities and non-minority and/or non- low-income communities. The potential adverse effects related to transportation, safety, and community facilities would not be predominantly borne by a minority and/or low-income community, nor would they be appreciably more severe or greater in magnitude than adverse effects on non-minority or non-low-income communities; or vice-versa. Therefore, operation of the Build Alternative and Malabar Yard railroad improvements would not cause an adverse cumulative effect on any minority community, low-income community, or non-minority community when combined with other cumulative projects in the cumulative geographic area.

3.16.5 NEPA Impact Summary

The cumulative effects analysis determined that, without mitigation, the Build Alternative and Malabar Yard would result in beneficial effects that would contribute to cumulative effects for 1 resource during construction, adverse effects that would contribute to cumulative effects on 13 resources during construction, and 11 resources during operation. Table 3.16-4 lists those resources. With incorporation of mitigation listed below for each resource, adverse effects could contribute to cumulative effects for 5 resources (2 during construction and 3 during operations) when combined with other planned transit and development projects listed in Table 3.16-2.

Table 3.16-4 provides an impact summary for the Build Alternative.

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Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Land Use and Planning	*Construction* Adverse Effect	*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** **TR-1: Prepare a Construction Traffic Management Plan** **AES-2: Minimize Nighttime Work and Screen Direct Lighting** **NV-2: Employ Noise- and Vibration-Reducing Measures during Construction** **NV-3: Prepare a Community Notification Plan for Project Construction** **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**	*Construction* No Adverse Effect
	Operation Adverse Effect	*Operation* **AES-1: Aesthetic Treatments** **AES-3: Screen Direct Lighting and Glare** **LU-1: Enhance Neighborhood Connectivity** **TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)**	*Operation* No Adverse Effect
Transportation	*Construction* Adverse Effect	*Construction* **TR-1: Prepare a Construction Traffic Management Plan** **TR-2: Prepare Passenger Rail Operations Temporary Construction Staging Plan**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street) **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**	
	Operation Adverse Effect	*Operation* **LU-1: Enhance Neighborhood Connectivity** **TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY TR-4: Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**	*Operation* Adverse Effect
Visual Quality and Aesthetics	*Construction* Adverse Effect	*Construction* **AES-2: Minimize Nighttime Work and Screen Direct Lighting**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Operation Adverse Effect	*Operation* **AES-1: Aesthetic Treatments** **AES-3: Screen Direct Lighting and Glare**	*Operation* No Adverse Effect
Air Quality and Global Climate Change	*Construction* Adverse Effect	*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** **MY AQ-1: Fugitive Dust Control** **MY AQ-2: Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment**	*Construction* No Adverse Effect
	Operation Adverse Effect	*Operation* **AQ-3: Adaptive Air Quality Mitigation Plan**	*Operation* No Adverse Effect
Noise and Vibration	*Construction* Adverse Effect	*Construction* **NV-2: Employ Noise- and Vibration-Reducing Measures during Construction** **NV-3: Prepare a Community Notification Plan for Project Construction**	*Construction* Adverse Effect
	Operation Adverse Effect	*Operation* **NV-1: Construct Sound Walls**	*Operation* No Adverse Effect
Biological and Wetland Resources	*Construction* Adverse Effect	*Construction* **BIO-1: Bats**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		BIO-2: MBTA Species **BIO-3: Protected Trees** **MY BIO-1: MBTA species** **MY BIO-2: Protected Trees**	
	Operation No Adverse Effect	*Operation* No mitigation is required	*Operation* No Adverse Effect
Floodplains, Hydrology, and Water Quality	*Construction* Adverse Effect	*Construction* **HWQ-1: Prepare and Implement an SWPPP** **HWQ-5: Comply with Local Dewatering Requirements** **HWQ-6: Comply with Local Dewatering Requirements for Contaminated Sites** **HAZ-1: Prepare and Implement an SWPPP** **MY HWQ-1: Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements** **MY HWQ-2: Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements** **MY HWQ-3: Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements** **MY HWQ-4: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements** **MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan (HMMP)**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
	Operation Adverse Effect	*Operation* **HWQ-2: Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3: Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4: Final Water Quality BMP Selection (City of Los Angeles)** **MY HWQ-5: Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements**	*Operation* No Adverse Effect
Geology, Soils, and Seismicity	*Construction* Adverse Effect	*Construction* **GEO-1: Prepare Final Geotechnical Report** **MY GEO-1: Prepare Final Geotechnical Report**	*Construction* No Adverse Effect
	Operation Adverse Effect	*Operation* **GEO-1: Prepare Final Geotechnical Report** **MY GEO-1: Prepare Final Geotechnical Report**	*Operation* No Adverse Effect
Hazardous Waste and Materials	*Construction* Adverse Effect	*Construction* **HAZ-1: Prepare a Construction Hazardous Materials Management Plan** **HAZ-2: Final Water Quality BMP Selection (Caltrans ROW)** **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** **MY AQ-1: Fugitive Dust Control** **MY AQ-2: Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan (HMMP) **MY HAZ-2: Prepare Phase II ESA** **MY HAZ-3: Prepare a General Construction Soil Management Plan** **MY HAZ-4: Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP)** **MY HAZ-5: Halt Construction Work if Potentially Hazardous Materials are Encountered** **MY HAZ-6: Pre-Demolition Investigation**	
	Operation Adverse Effect	*Operation* **AQ-3: Adaptive Air Quality Mitigation Plan**	*Operation* No Adverse Effect
Public Utilities and Energy	*Construction* Adverse Effect	*Construction* **HWQ-1: Prepare and Implement an SWPPP** **MY HWQ-1: Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements**	*Construction* No Adverse Effect
	Operation Adverse Effect	*Operation* **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)** **MY HWQ-5: Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements**	*Operation* No Adverse Effect
	Construction	*Construction*	*Construction*

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Cultural and Paleontological Resources	Adverse Effect	**CUL-1: Archaeological Treatment Plan (ATP)** **CUL-2: Built Environment Treatment Plan (BETP)** **PAL-1: Paleontological Mitigation Plan (PMP)** **PAL-2: Paleontological WEAP Training** **PAL-3: Curation** **MY CUL-1: Archaeological Treatment Plan (ATP)** **MY PAL-1: Paleontological Mitigation Plan (PMP)** **MY PAL-2: Paleontological WEAP Training** **MY PAL-3: Curation**	Adverse Effect
	Operation No Adverse Effect	*Operation* No mitigation is required	*Operation* No Adverse Effect
Economic and Fiscal Impacts	*Construction* Beneficial Effect	*Construction* No mitigation is required	*Construction* Beneficial Effect
	Operation No Adverse Effect	*Operation* No mitigation is required	*Operation* No Adverse Effect
Safety and Security	*Construction* Adverse Effect	*Construction* **TR-1: Prepare a Construction Traffic Management Plan** **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**	*Construction* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**	
	Operation Adverse Effect	*Operation* **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY TR-4: Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**	*Operation* Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Socioeconomics and Communities Affected	*Construction* Adverse Effect	*Construction* **TR-1: Prepare a Construction Traffic Management Plan** **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**	*Construction* No Adverse Effect
	Operation Adverse Effect	*Operation* **TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY TR-4: Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**	*Operation* Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
Community Analysis	*Construction* Adverse Effect	*Construction* **TR-1: Prepare a Construction Traffic Management Plan** **TR-2: Prepare Passenger Rail Operations Temporary Construction Staging Plan** **TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)** **AES-2: Minimize Nighttime Work and Screen Direct Lighting** **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** **NV-1: Construct Sound Wall at William Mead Homes and Care First Village** **NV-2: Employ Noise and Vibration Reducing Measures during Construction** **NV-3: Prepare a Community Notification Plan for Project Construction** **HWQ-1: Prepare and Implement an SWPPP** **HWQ-5: Comply with Local Dewatering Requirements** **HWQ-6: Comply with Local Dewatering Requirements for Contaminated Sites** **HWQ-7: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses**	*Construction* Adverse Effect (Noise, Cultural and Paleontological Resources)

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined			
Evaluation Topic	**Level of Effect before Mitigation**	**Mitigation Measure(s)**	**Level of Effect after Implementation of Mitigation Measure(s)**
		HAZ-1: Prepare a Construction Hazardous Materials Management Plan **HAZ-2: Prepare Project wide Phase II ESA** **HAZ-3: Prepare a General Construction Soil Management Plan** **HAZ-4: Prepare Parcel Specific Soil Management Plans and HASPs** **HAZ-5: LUC Sites and Coordination with the DTSC** **HAZ-6: Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered** **HAZ-7: Compliance with the City of Los Angeles Building Code Methane Regulations** **HAZ-8: Pre-Demolition Investigation** **GEO-1: Prepare Final Geotechnical Report** **CUL-1: Archaeological Treatment Plan (ATP)** **CUL-2: Built Environment Treatment Plan (BETP)** **PAL-1: Paleontological Mitigation Plan (PMP)** **PAL-2: Paleontological WEAP Training** **PAL-3: Curation**	

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** **MY AQ-1: Fugitive Dust Control** **MY AQ-2: Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment** **MY BIO-1: MBTA species** **MY BIO-2: Protected Trees** **MY HWQ-1: Prepare and Implement an SWPPP for the Malabar Yard Railroad Improvements** **MY HWQ-2: Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements** **MY HWQ-3: Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements** **MY HWQ-4: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements** **MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan (HMMP)** **MY HAZ-2: Prepare Phase II ESA** **MY HAZ-3: Prepare a General Construction Soil Management Plan**	

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		MY HAZ-4: Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) **MY HAZ-5: Halt Construction Work if Potentially Hazardous Materials are Encountered** **MY HAZ-6: Pre-Demolition Investigation** **MY GEO-1: Prepare Final Geotechnical Report** **MY CUL-1: Archaeological Treatment Plan (ATP)** **MY PAL-1: Paleontological Mitigation Plan (PMP)** **MY PAL-2: Paleontological WEAP Training** **MY PAL-3: Curation**	
	Operation No Adverse Effect	*Operation* **AES-1: Aesthetic Treatments** **AES-3: Screen Direct Lighting and Glare** **LU-1: Enhance Neighborhood Connectivity** **TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)** **AQ-3: Adaptive Air Quality Management Plan.** **NV-1: Construct Sound Walls** **HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)** **HWQ-3 Final Water Quality BMP Selection (Railroad ROW)** **HWQ-4: Final Water Quality BMP Selection (City of Los Angeles)** **HWQ-5 Comply with Local Dewatering Requirements** **GEO-1: Prepare Final Geotechnical Report**	*Operation* No Adverse Effect

Table 3.16-4. NEPA Impact Summary for the Build Alternative and Malabar Yard Railroad Improvements Combined

Evaluation Topic	Level of Effect before Mitigation	Mitigation Measure(s)	Level of Effect after Implementation of Mitigation Measure(s)
		MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection **MY TR-4: Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings** **MY HWQ-5: Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements** **MY GEO-1: Prepare Final Geotechnical Report**	

4.0 Community Analysis

4.1 Introduction

This chapter provides a community analysis of minority communities, low-income communities, and non-minority communities. To support the evaluation, this chapter describes the methods used in defining minority communities, low-income communities, and non-minority communities; it includes an analysis of potential disproportionate and adverse effects on minority communities, low-income communities, and non-minority communities; and it includes a discussion of how such disproportionate effects may be avoided or minimized. This analysis is based on the impacts identified in Sections 3.2 through 3.16 of this EIS and discusses only those impacts that remain adverse after all mitigation measures have been considered.

The Draft EIS/SEIR was issued in June 2024, prior to the issuance of recent federal EOs and regulatory directions. Therefore, this section still includes a summary of the regulatory framework at the time when the Draft EIS/SEIR was prepared. This document also includes a summary of recent federal EOs and guidance, which may not apply to this project.

Demographic data used in the analysis to identify minority communities, low-income communities, non-minority communities within the community analysis study area were derived from various sources, including the U.S. Census Bureau 2020 Decennial Census and U.S. ACS 2016–2021 dataset. Information contained in this chapter is summarized from the *Link US Community Impact Assessment* (Appendix D of this EIS) and published sources.

4.2 Regulatory Framework

4.2.1 Federal Regulations

Title VI of the Civil Rights Act (42 United States Code § 2000(d) et seq.)

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs receiving federal funding. Federal agencies are required to ensure that no person is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance.

Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (1994) (Executive Order 12898)

EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, was signed February 11, 1994. It directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse human health or environmental effects of federal projects and programs on minority populations and low-income populations to the greatest extent practicable and permitted by law. As a result, NEPA requires project recipients of federal funding to analyze environmental justice concerns (USDOT 1997).

EO 12898 seeks the "fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies" (U.S. EPA 2017). Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

CEQ responded to EO 12898 by issuing guidance for agencies on how to address EJ under NEPA. The CEQ EJ guidance includes general principles for addressing EJ during the NEPA process, such as considering relevant public health data; recognizing interrelated cultural, social, occupational, historical, or economic factors; and developing effective public participation strategies.

Section 1-102 of EO 12898 was amended on January 27, 2021. The amended order creates a government-wide initiative with the goal of delivering 40 percent of the overall benefits of relevant federal investments to disadvantaged communities and tracks performance toward that goal through the establishment of an Environmental Justice Scorecard. The order also establishes a new White House Environmental Justice Interagency Council and a White House Environmental Justice Advisory Council.

Revitalizing Our Nation's Commitment to Environmental Justice for All (Executive Order 14096)

EO 14096 was signed on April 21, 2023, establishing a policy for federal agencies to prioritize investment in environmental justice communities, consider the cumulative effects of legacy pollution and historic federal actions on environmental justice communities and integrate environmental justice into the core mission of each federal agency. This EO is an update to EO 12898. Under EO 14096, environmental justice is now evaluated based simply on disproportionate and adverse impacts. The Fact Sheet that accompanied the EO indicates that "The Executive Order uses the term "disproportionate and adverse" as a simpler, modernized version of the phrase "disproportionately high and adverse" used in EO 12898. Those phrases have the same meaning but removing the word "high" eliminates potential misunderstanding that agencies should only be considering large disproportionate effects."

U.S. Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (2012) (U.S. Department of Transportation Order 5610.2(c))

In 1997, the United States Department of Transportation (USDOT) issued the Order to Address Environmental Justice in Minority Populations and Low-Income Populations (USDOT Order 5610.2(a), and sets guidelines to ensure that all federally funded transportation-related programs, policies, or activities that have the potential to adversely affect human health or the environment involve a planning and programming process that explicitly considers effects on minority and low-income populations.

USDOT Order 5610.2(a) defines low-income as a person whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. Minority is defined as a person who is Black; Hispanic or Latino, regardless of race; Asian American; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander.

On May 16, 2021, USDOT issued USDOT Order 5610.2(c), which is an update to the 1997 order and subsequent USDOT Order 5610.2(b), which had removed many requirements from the 1997 order. USDOT Order 5610(c) rescinded the changes in USDOT Order 5610.2(b) in full. USDOT Order 5610.2(c) (2021) defines a disproportionately high and adverse effect as one that would meet either characteristic below.

- The adverse effect would be predominantly borne by a minority and/or low-income population.
- The adverse effect suffered by the minority population and/or low-income population would be appreciably more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income population.

Improving Access to Services for Persons with Limited English Proficiency (2000) (Executive Order 13166)

EO 13166, Improving Access to Services for Persons with LEP, was signed on August 11, 2000. EO 13166 requires development and implementation of a system for federally funded programs that provides meaningful access for limited-English proficiency (LEP) populations.

Federal Transit Administration Circular C 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients

FTA Circular C 4702.1B was issued to provide federal grant recipients with a framework for integrating principles of environmental justice into public transportation decision-making processes. Circular 4702.1B provides guidance on the development and implementation of a Title VI plan, including inclusive public participation requirements and LEP assistance. The guidelines provide instructions for a Four-Factor Analysis to determine language services that should be provided and how to develop a Language Assistance Plan.

Federal Transit Administration Circular C 4703.1B, Environmental Justice Policy Guidance for Federal Transit Administration Recipients

FTA Circular C 4703.1 was issued to provide federal grant recipients with guidance for incorporating environmental justice principles into projects and activities that receive funding from FTA. Circular 4703.1 defines low-income as person whose household is at or below the DHHS poverty guidelines. The Circular further encourages recipients to use a locally developed threshold, such as that used for the FTA grant program, which is 150 percent of the poverty line.

Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (Executive Order 13990)

EO 13990 was signed on January 20, 2021, and seeks to prioritize environmental justice in federal decision making.

Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)

EO 13045 requires federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its regulatory actions address disproportionate risks to children that result from environmental health risks or safety risks.

Americans with Disabilities Act (42 United States Code Sections 12101 to 12213)

The ADA prohibits, under certain circumstances, discrimination based on disability.

Age Discrimination Act of 1975 (42 United States Code Sections 6101-6107)

The Age Discrimination Act of 1975 prohibits discrimination on the basis of age in programs or activities receiving federal funding.

Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 United States Code Chapter 61)

The Uniform Relocation Assistance and Real Property Acquisition Policies Act ensures that persons displaced because of a federal action or an undertaking involving federal funds are treated fairly, consistently, and equitably so that such persons would not suffer disproportionate injuries because of projects designed for the benefit of the public as a whole.

Initial Rescissions of Harmful Executive Orders and Actions (Executive Order 14148)

EO 14148 commenced policies to make our Nation united, fair, safe, and prosperous again by restoring common sense to the Federal Government and unleashing the potential of the American citizen. It revoked a list of executive orders.

Unleashing American Energy (Executive Order 14154)

EO 14154 recognized that the United States is blessed with an abundance of energy and natural resources that have historically powered our Nation's economic prosperity. It aimed to guarantee that all executive departments and agencies (agencies) provide opportunity for public comment and rigorous, peer-reviewed scientific analysis while expediting and simplifying the permitting process. It revoked a list of executive orders, and it directed federal agencies to undertake all available efforts to eliminate all delays within their respective permitting processes.

Ending Illegal Discrimination and Restoring Merit-Based Opportunity (Executive Order 14173)

EO 14173 recognized the longstanding Federal civil-rights laws that protect individual Americans from discrimination based on race, color, religion, sex, or national origin. It recognized that these civil-rights protections serve as a bedrock supporting equality of opportunity for all Americans. It revoked a list of executive orders and it aimed to streamline federal contracting process to enhance speed and efficiency, reduce costs, and require Federal contractors and subcontractors to comply with civil-rights laws.

Designating English as the Official Language of the United States (Executive Order 14224)

Executive Order 14224 designated English as the official language of the United States. It revoked Executive Order 13166.

4.2.2 State and Local Regulations

California Government Code 65040.12(e)

California Government Code 65040.12(e) defines environmental justice as the "fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the… enforcement of environmental laws, regulations, and policies." Section 65040.12(e)(2)(D) requires agencies to, at a minimum, meaningfully consider input from those most impacted by pollution during environmental and land use decision making.

City of Los Angeles General Plan, Mobility Plan 2035 (2016) and Plan for a Healthy Los Angeles (2021)

The City of Los Angeles General Plan's Mobility Plan 2035 and subsequent Health Framework, Plan for a Healthy Los Angeles, both outline the City's environmental justice policy to, "Assure that fair treatment of people of all races, cultures, incomes and education levels with respect to the development, implementation and enforcement of environmental laws, regulations, and policies, including affirmative efforts to inform and involve environmental groups, especially environmental justice groups, in early planning stages through notification and two-way communication."

Metro's Measure M (2016)

Measure M: The Los Angeles County Traffic Improvement Plan, was a ballot measure passed by Los Angeles County voters in 2016. Measure M raises money (through a no-sunset half-cent sales tax) to ease traffic congestion; expand rail and rapid transit system; repave local streets, potholes, and synchronize signals; make public transportation more accessible, convenient, and affordable for seniors, students, and the disabled; earthquake-retrofit bridges; and create jobs, reduce pollution, and generate local economic benefits. Measure M includes a low-income fare subsidy program and would benefit low-income populations.

Metro Equity Platform

In 2018, Metro Board adopted the Equity Platform that guides how the agency works to address inequities and create more equitable access to opportunity. It considers existing disparities and evaluates how the project can effectively reduce disparities between communities through transit service, station amenities, and safety infrastructure that meets the needs of the historically underserved community. The Equity Platform is designed to inform, shape and guide every facet of the agency's business, on a continuing basis, to shape projects, investments, and new initiatives.

The four main areas of action, called Pillars of the Equity Platform, are:

- Define and Measure
- Listen and Learn
- Focus and Deliver
- Train and Grow

As part of the Equity Platform framework, Metro created Equity Focus Communities (EFCs) designations to help identify areas with the greatest mobility needs for equity prioritization. EFCs were identified by areas by mapping areas with higher concentrations of more burdened populations, including low-income households earning less than $60,000 per year, Black, Indigenous, or People of Color populations, and households without a vehicle.

Metro Public Participation Plan (2022)

Metro's Public Participation Plan outlines its commitment and methods to comply with Title VI, EO 12898, EO 13166, FTA Circulars C 4702.1B regarding responsibilities to LEP persons, and FTA Circular C 4703.1 regarding the integration of EJ principles into the transportation decision-making process. The plan is also consistent with Section 162(a) of the Federal-Aid Highway Act of 1973 and the Age Discrimination Act of 1975.

Metro 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 2015b).

4.3 Methods for Evaluating Environmental Effects

This analysis uses a six-step process to determine impacts to minority communities, low-income communities, or non-minority communities, as outlined below and described in the following subsections:

1. Identify the community analysis area;

2. Determine whether there are minority communities, low-income communities, or non-minority communities within the community analysis study area that would potentially be affected by the Build Alternative;
3. Conduct a comparison of minority communities and low-income communities to the county average or local benchmark to identify minority communities, low-income communities, or non-minority communities for further analysis;
4. Identify additional communities, if any, that may be considered minority communities, low-income communities, or non-minority communities through other data sources, such as local planning documents, site visits, and input from public engagement;
5. Identify adverse effects for each resource area and determine whether adverse effects remain after implementation of mitigation measures; and
6. Determine if remaining adverse effects would be predominantly borne by the minority communities, low-income communities, or non-minority communities identified in Steps 2 through 4 or would have a disproportionate and adverse effect on these communities.

4.3.1 Definition of the Community Analysis Study Area

The community analysis study area is defined as the six census tracts traversed by the boundary of the Project study area and the four census tracts traversed by the boundary of the Little Tokyo District (outermost boundary of all ten census tracts). The community analysis study area is located entirely within the downtown portion of the City of Los Angeles. The entire City of Los Angeles is defined as the Community of Comparison, with which the effects of Build Alternative are compared to identify the potential for disproportionate and adverse effects borne by minority communities, low-income communities, or non-minority communities within the community analysis study area.

4.3.2 Identification of Minority Communities, Low-Income Communities, and Non-Minority Communities

ACS 5-Year 2021 data were reviewed at the census tract level to determine the presence of minority communities and low-income households in the community analysis study area. Census tract data were verified against 2020 Decennial Census data at the block level to help identify the location of specific areas of analysis nearest to the Project footprint.

The following definitions were used to identify minority communities and low-income communities:

- Minority Individuals: Individuals who identify as Black or African American; Hispanic or Latino, regardless of race; Asian; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander; some other race alone, or two or more races.
- Low-Income: Households with income below 150 percent of the U.S. Census poverty threshold.

- A low-income community is considered any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons who will be similarly affected by a proposed USDOT program, policy, or activity.

4.3.3 Determination of Minority Communities, Low-Income Communities, and Non-Minority Communities

Minority communities should be defined when:

- The minority population of the affected area exceeds 50 percent, or
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

As described in Section 3.15 of this EIS and Table 4-3, the minority community in the City of Los Angeles is 71.9 percent. For the purpose of this analysis, a census tract identified as having a minority community that is meaningfully greater than the community of comparison occurs when the percentage of minority individuals in a census tract is greater than 110 percent of the minority population in the City of Los Angeles, which is 79.1 percent.

Non-minority communities include communities that do not qualify as minority communities.

The DHHS issues poverty guidelines for the 48 contiguous states each year. The poverty guidelines, sometimes referred to as the “federal poverty level,” are based on household size. In 2022, the federal poverty level for a household size of 4 was $26,500. FTA Circular 4703.1 references Public Law 112-141, which includes a definition of low-income individuals to mean an “individual whose family income is below 150 percent of the poverty line.”

For the purposes of this analysis, a community is considered a low-income community when the median income is below 150 percent of the federal poverty level, which would be $39,750. The 2019 Metro Equity Platform identifies an EFC community if the household income in less than $60,000, which reflects incomes in the Los Angeles area. The low-income communities identified within this chapter are consistent with the communities identified as EFC communities by Metro. Household income information for correctional facilities is not available and is excluded from this analysis.

4.3.4 Identification of Additional Minority Communities, Low-Income Communities, and Non-Minority Communities

Additional minority and/or low-income communities were also identified within and adjacent to the Project study area based on demographic characteristics, stakeholder interviews and desktop reviews (See Section 4.3.6).

4.3.5 Identification of Adverse Effects Before and After Mitigation

To determine the potential for the Build Alternative to result in disproportionate and adverse human health or environmental effects on minority communities, low-income communities, or non-minority communities, the effects discussed in the resource sections in Chapter 3.0 of this EIS were reviewed and the likelihood of any of these effects to affect minority communities, low-income communities, or non-minority communities was assessed. Realizing that the City of Los Angeles contains a unique set of communities, outreach to local stakeholders was also conducted to identify potential effects on minority communities, low-income communities, or non-minority communities that had not been considered through analysis of the resource areas evaluated in Chapter 3.0 of this EIS. Community input provided through the outreach process is summarized in Section 4.3.3, Public Outreach. No additional effects were identified.

Temporary construction and permanent effects throughout operation of the Build Alternative prior to mitigation were identified for all environmental topics. Adverse effects were then reviewed to determine whether implementation of proposed infrastructure and mitigation measures would reduce the adverse effects. Where the Build Alternative would result in no adverse effects on communities in general and thereby not disproportionately affect minority communities, low-income communities, or non-minority communities, no further analysis was conducted.

4.3.6 Evaluation of Disproportionate and Adverse Effects on Minority Communities, Low-Income Communities, and Non-Minority Communities

Adverse effects that cannot be mitigated were then compared to the minority communities, low-income communities, and non-minority communities' existing conditions to determine if there would be a disproportionate and adverse effect on a minority community, low-income community, or non-minority community (e.g., an adverse impact that is predominantly borne by a minority community, low-income community, or non-minority community or is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority and/or non-low-income community; or vice-versa). The assessment of whether adverse effects would be disproportionate and adverse included consideration of:

- The location of adverse effects in relation to minority communities, low-income communities, or non-minority communities;
- The severity of the adverse effect and the success of the proposed mitigation measures in reducing the effect;
- Whether mitigation measures reduce effects equally for both minority communities and low-income communities as for non-minority communities and non-low-income communities; and
- The benefits that minority communities, low-income communities, or non-minority communities would receive from the Build Alternative.

The determination considers the totality of the locations of adverse effects relative to minority communities, low-income communities, or non-minority communities, the severity of the adverse effect and the success of proposed mitigation in reducing the effect, whether mitigation measures reduce effects equally for both minority and/or low-income communities and non-minority and/or non-low-income communities, and the benefits that these communities would receive.

4.4 Outreach to Communities

Outreach to affected communities has been and will continue to be conducted as part of Metro and CHSRA's decision making process. The public involvement process is geared toward the inclusion of all stakeholders. The *Link US Public Outreach Plan* (Appendix R of the EIS) outlines multiple outreach methods to ensure Project information is widely accessible and comprehensible, allowing the communities the opportunity to participate meaningfully in the process and provide feedback. The *Link US Public Outreach Plan* was revised at certain milestones to incorporate input from communities, update demographic information as needed, and adjust outreach methods and LEP considerations accordingly.

Metro is taking steps to provide meaningful access to those LEP individuals expected to be most regularly encountered. At the onset of the Project, the project team conducted a demographic survey of the Project study area to determine the demographic makeup of census data to determine the LEP communities and the languages that would initially be used for translation of project materials. The *Link US Public Outreach Plan* summarizes demographics in the community analysis study area, identifies community group stakeholders, and identifies LEP communities. The initial version of the *Link US Public Outreach Plan* prepared in 2016 provided for print and digital materials to be provided in English, Spanish, Chinese (simplified), and Japanese, based on several of the communities surrounding LAUS – Chinatown, Little Tokyo and Olvera Street. All public notices indicated that translation for other languages was available upon request. Based on feedback from stakeholders and the public, the *Link US Public Outreach Plan* was updated after the NOI scoping meeting to indicate that print and digital materials would also be provided in Vietnamese, Korean, Khmer (Cambodian).

The current version of the *Link US Public Outreach Plan* indicates that translation services will be made available at public and stakeholder meetings as appropriate. Meeting notification materials were advertised in multiple languages, including English, Spanish, Chinese (simplified), Japanese, Vietnamese, Korean, and Khmer (Cambodian), with additional interpretation services offered upon stakeholder request.

The outreach conducted to date is fully documented in Chapter 8.0, Public and Agency Outreach of this EIS. An extensive public and agency outreach program was conducted throughout the environmental review process and will continue through the design and construction phases.

4.4.1 Notice of Intent and Public Information Materials

Pursuant to NEPA, a NOI was prepared to inform the public and interested parties of the plan to prepare an EIS and of the upcoming scoping Meeting. The NOI also provided general Project information, Project website and contact information, as well as information on how to provide comments. The NOI was published in the FR (Appendix A of this EIS) and the comment period was from May 31 through June 30, 2016. A revised NOI was published on September 17, 2020, to inform public agencies and the general public of the potential mitigation in City of Vernon, solicit their comments, and obtain feedback on the scope of analysis in the Draft EIS. See Appendix A of this EIS for information specific to the Revised NOI and scoping process for the Malabar Yard railroad improvements in the City of Vernon. Outreach to potentially affected minority communities, low-income communities, and non-minority communities is also discussed in Section 3.16 of the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of the EIS).

Notice of Intent

The NOI was distributed to the public through mail and advertisements and was also available on the Project website. A notice was mailed to approximately 23,000 stakeholders (residents, businesses, and property owners) within a 1-mile radius of LAUS on May 27, 2016. The combined notice included English, Spanish, Chinese (simplified), and Japanese text offering translated versions of the documents upon request. A combined notice was also published in several local, multicultural publications in different languages, including the following: *LA 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 to the NOI and notice that was distributed to the public, a save-the-date pamphlet was also mailed to stakeholders within a 1-mile radius around LAUS on May 19, 2016. This tri-fold pamphlet contained general information, Project website and contact information and scoping meeting information. The pamphlet also contained full content translated into Spanish and Chinese (simplified). This notice was also provided in multiple email blasts to approximately 1,800 emails of interested stakeholders. The email blasts were sent on May 12 and June 1, 2016, and included links to translate the information into Spanish and Chinese (simplified). A third email blast was also sent on June 6, 2016, to remind stakeholders of the NOI comment period and how to submit comments.

Public information materials were created for the scoping process to introduce the Project to the public and facilitate discussion at the scoping Meeting. A Project fact sheet was developed that includes a Project overview, history, components, benefits, map, timeline, and contact information. A document containing frequently asked questions (FAQ) was also developed to answer common Project questions. Fact sheets and FAQs were distributed at all Project briefings and the scoping Meeting, and were available in English, Spanish, Chinese (simplified), and Japanese. Public information materials, including the scoping notice, fact sheet and FAQs, were also distributed throughout LAUS to individual patrons and in the community at local public

facilities (libraries, recreation centers, etc.). For William Mead Homes, door-to-door noticing was also conducted to disseminate the flyers and meeting invitations.

4.4.2 Scoping Meeting

As part of the community outreach process for the Project, a scoping meeting was held in 2016 to educate the public on the Project and offer an opportunity to provide comments on the Project purpose and need, concepts under consideration, and issues and areas of concern to be considered in the EIS. The scoping meeting was held on June 2, 2016, from 6 to 8 PM on the first-floor plaza of Metro Headquarters at One Gateway Plaza, Los Angeles, CA 90012.

Attendees were provided copies of the Project fact sheet, FAQs, comment sheet, meeting agenda, venue layout with stations, and copies of the NOI. The comment sheet included English, Spanish, and Chinese (simplified) languages. Spanish and Chinese interpretation services were also offered at the meeting and interpretation was available for other languages upon request. The fact sheet and FAQs were also provided in English, Spanish, Chinese (simplified), and Japanese. Display boards were located around the meeting space for stakeholders to walk around, speak to Project and Metro staff, and view Project information.

Briefings with stakeholder organizations were held to inform key stakeholders and their constituencies of the upcoming public scoping meeting. Individual calls were made to key stakeholders and one-on-one briefings were offered to 30 organizations (comprising elected officials, business organizations, and community organizations).

Public Outreach was completed to predominantly minority communities, to predominantly non-minority communities to predominantly low-income communities, and to predominantly non-low-income communities. Many meetings were held with local officials; public, local, and regional organizations; and government agencies, as listed in Table 4 1 and discussed in detail in the *Link US Public Outreach Plan*. Meetings were also held with representatives of affected communities within the Project study area. Outreach activities conducted by Metro and FRA (previous NEPA lead agency at the time) included advertising meetings in Spanish, Chinese (simplified), and Japanese, making Project related materials available in Spanish, Chinese (simplified), and Japanese, and having interpreters available at public meetings in areas that included Hispanic, Chinese, and Japanese communities. Following the 2016 NOI and scoping meeting, meeting advertisements and materials were also provided in Vietnamese, Korean, and Khmer (Cambodian).

Outreach activities were conducted to determine the extent of the affected communities and to gather information on the best ways of communicating with all communities. Through review of input received from the public and corresponding environmental analysis, staff identified whether the Build Alternative would potentially disproportionately affect any minority communities, low-income communities, or non-minority communities relative to the potential benefit gained by the community from the Build Alternative, and appropriate alternatives or changes to the Project or required mitigation measures were implemented. Starting in April 2016, various outreach meetings were held, including meetings to identify communities and leaders to identify strategies

for outreach to their communities and gain their input, as listed in Table 4 2. A full list of these meetings is provided in Chapter 8.0, Public and Agency Outreach of this EIS.

Table 4-1. Outreach to Stakeholders and Community Groups

Stakeholder	Date
Arts District Community Council Los Angeles	E-blast/Call – FEIR
Arts District Los Angeles Business Improvement District	October 14, 2016 January 18, 2018 September 14, 2018
Boyle Heights Chamber of Commerce	June 14, 2016 November 8, 2016
Boyle Heights Neighborhood Council	July 27, 2016 November 15, 2016 – Community Update Meeting November 30, 2016 April 2019 – E-blast/Call – FEIR
Boyle Heights Neighborhood Council – Planning and Land Use Committee	November 10, 2016 September 13, 2018 October 24, 2018
Central City Association of Los Angeles	November 30, 2018 March 13, 2019
Chinatown Business Improvement District	July 28, 2016 November 2, 2017 – LAUS Roundtable Workshop May 2, 2018 – LAUS Roundtable Workshop November 15, 2018 April 2019 – E-blast/Call – FEIR
Chinese American Museum	November 15, 2016 – Community Update Meeting
Chinese Historical Society	November 15, 2016 – Community Update Meeting
Christian Life Assembly (CLA) Faith Event	January 18, 2019 – DEIR briefing
Downtown Los Angeles Neighborhood Council	June 21, 2016
El Pueblo de Los Angeles Historical Monument	July 14, 2016

Table 4-1. Outreach to Stakeholders and Community Groups

	November 2, 2017 – LAUS Roundtable Workshop October 22, 2018 April 2019 – E-blast/Call – FEIR
First 5 LA	May 13, 2019 – FEIR
Historic Cultural Neighborhood Council	June 15, 2016 – Land Use Committee and Board July 12, 2016 – Land Use Committee and Board September 21, 2016 – Land Use Committee November 15, 2016 – Community Update Meeting November 2, 2017 – LAUS Roundtable Workshop February 12, 2018 - Land Use Committee and Board
Housing Authority of the City of Los Angeles	November 15, 2016 – Community Update Meeting January 12, 2017 October 26, 2017 – One-on-One briefing November 2, 2017 – LAUS Roundtable Workshop February 12, 2018 May 30, 2018 June 21, 2018 December 5, 2018 January 9, 2019 January 11, 2019 – DEIR briefing June 27, 2023 August 14, 2023
Lincoln Heights Chamber of Commerce	August 2, 2016 October 4, 2016 January 18, 2018
Lincoln Heights Neighborhood Council	June 16, 2016
Little Tokyo Business Association/Little Tokyo Business Improvement District	June 16, 2016 September 21, 2016 November 15, 2016 – Community Update Meeting

Table 4-1. Outreach to Stakeholders and Community Groups	
	January 18, 2018 May 2, 2018 – LAUS Roundtable Workshop November 30, 2018 – LAUS Roundtable Workshop April 17, 2019 – FEIR June 3, 2019 February 20, 2025 – Final EIS
Little Tokyo Community Council - All Committees	January 10, 2019 January 17, 2019 – DEIR briefing April 23, 2019 – FEIR
Little Tokyo Community Council	November 2, 2017 – LAUS Roundtable Workshop November 30, 2018 – LAUS Roundtable Workshop
Los Angeles Area Chamber of Commerce	April 2019 - E-blast/Call – FEIR
Los Angeles Area Chamber of Commerce (Land Use/ Construction and Housing/Transportation and Goods Movement Council)	June 22, 2016 November 28, 2018
Los Angeles City Council District 1, Councilmember Gil Cedillo	May 27, 2016 September 22, 2016 January 12, 2017 October 26, 2017 July 13, 2018 December 5, 2018 March 27, 2019 – FEIR
Los Angeles City Council District 14, Councilmember Jose Huizar	May 23, 2016 September 20, 2016 December 8, 2016 May 24, 2018 June 18, 2019 (letter sent) – FEIR
Los Angeles Latino Chamber of Commerce	June 30, 2016
Los Angeles River Artists and Business Association	June 6, 2016 February 12, 2018
Los Angeles County Board of Supervisors, District 1, Supervisor Hilda Solis	May 25, 2016

Table 4-1. Outreach to Stakeholders and Community Groups	
	May 24, 2018
Los Angeles County Board of Supervisors, District 4, Supervisor/Metro Board Chair Janice Hahn	January 7, 2025 April 7, 2025 May 15, 2025
Metro Accessibility Advisory Board Meeting	November 8, 2018 May 9, 2019
Metro Central LA Roundtable	May 29, 2019
Metro Citizen's Advisory Committee	October 24, 2018
William Mead Homes Resident Advisory Committee	January 12, 2017 October 26, 2017 – One-on-One Briefing with Board Members June 5, 2018 June 21, 2018 December 5, 2018 January 9, 2019 January 11, 2019 – DEIR briefing
William Mead Homes Resident Presentation	April 29, 2017 January 26, 2019 – Community Workshop May 13, 2024 – Project Update Meeting

William Mead Homes

William Mead Homes is a 415-unit public housing community located adjacent to the railroad ROW where a portion of the Project footprint traverses the property. According to 2022 Housing Authority of City of Los Angeles (HACLA) records, approximately 98 percent of the William Mead Homes residents qualify as minority. The median income is $17,811, which is below the federal poverty level. William Mead Homes has a Resident Advisory Council with members that are elected by residents to represent the community in policy decisions, community administration, and to organize events and activities. Metro held briefings with the Resident Advisory Committee in advance of broader public outreach events to gain an understanding of best techniques to obtain input and identify specific concerns in advance of the larger meetings with all members of the William Mead Homes community. Metro sought to present information that was responsive to concerns and design workshops that would encourage participation. The advance briefings were held with Council District 1 (CD1), HACLA, and the William Mead Homes Resident Advisory Committee in January 2017 to inform key stakeholders of upcoming meetings and workshops and obtain feedback to prepare for the meetings. An on-site Community Workshop with residents was held on April 29, 2017, to provide a project overview and conduct a listening session to understand

resident concerns. Residents were also informed about upcoming noise, vibration, and soil testing that would take place for the Project. The Project team also informed residents about the expected release of the CEQA Draft EIR by discussing what to expect, how the document is structured, and how public comments can be submitted. Additional meetings were held with the Resident Advisory Committee in 2017, 2018, and 2019. On January 26, 2019, the Project team facilitated another on-site community meeting with residents at the William Mead Homes property to provide a project update and an opportunity for residents to give input on the project during the Link US Draft EIR 45-day public review and comment period (which had been extended from January 17 through March 4, 2019). In 2023, additional meetings with HACLA were held to provide a Project update and overview of potential effects to support the NEPA and Section 106 processes. On May 13, 2024, the Project team facilitated another on-site community meeting at the William Mead Homes property to provide a project update and increase awareness for residents to give input on the project during the upcoming Link US Draft EIS/SEIR 45-day public review and comment period.

Metro Equity Platform and Community Input

The Project delivers on the "Listen and Learn" Pillar of the Equity Platform. As described above, during the outreach and environmental review process, there were numerous public engagement meetings with stakeholders, including minority communities, low-income communities, non-minority communities. Attendees were provided copies of the Project fact sheet, FAQs, and comment sheet. The fact sheet and FAQs were provided in English, Spanish, Chinese (simplified), Japanese, Vietnamese, Korean, and Khmer (Cambodian). The comment sheet included English, Spanish, Chinese (simplified), and Japanese, and were made available in additional languages upon request. Display boards were located around the meeting spaces (pre-COVID) for stakeholders to walk around, speak to Project and Metro staff, and view Project information. Stakeholders were invited to write directly on the boards and/or fill out comment sheets located at each table. Interpretation was available in Spanish, Chinese, and Japanese to all stakeholders in attendance and was also made available for other languages upon advanced request. The information learned was incorporated as feedback in the environmental review process. Further efforts will be made to meet with key stakeholders and equity-focused community representatives during the environmental reviews process.

Table 4-2 summarizes input provided by stakeholders at outreach events and briefings. This input was reviewed and considered during the analysis for each resource area, identification of potential impacts, and development of mitigation measures.

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
Air Quality	• Impacts to air quality associated with project/increased train activity	• An analysis of air quality impacts to nearby sensitive receptors of the Build Alternative footprint was performed along with a Health Risk Assessment to consider the cancer risk to

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
	and impacts to residents with health issues. • Request for post-project completion air quality analysis. • Request for air quality monitoring during construction at William Mead Homes	receptors within a 2-kilometer buffer of the Build Alternative footprint during both construction and operations. Mitigation measures were identified to reduce potential adverse effects related to air quality during construction and operations (see Section 3.5 of this EIS). • Mitigation Measure AQ-3, Adaptive Air Quality Mitigation Plan, requires Metro to conduct an annual emissions inventory to determine if pollutant emissions and diesel pollutant concentrations would exceed thresholds at any residential land use, and to work with regional/intercity rail operators to implement emerging technology on trains passing through LAUS or limit train movements so applicable thresholds would not be exceeded (see Section 3.5 of this EIS). • Offsetting Mitigation Measure AQ-4, Construction Air Quality Monitoring at William Mead Homes, requires Metro to develop a construction air quality monitoring plan and complete monitoring within the William Mead Homes property during the adjacent sound wall construction, throat track reconstruction, and elevated rail yard phases of construction (see Section 4.0 of the EIS).
Businesses	• Effects on businesses in the Commercial Street corridor near US-101, where new viaducts would be constructed to accommodate the run-through tracks. • Closure of US-101 On/Off Ramps, effects on Little Tokyo legacy businesses, and acknowledgement of other religious institutions in Little Tokyo	• A food processing facility, self-storage facility, and a portion of the BNSF West Bank Yard are planned to be acquired to implement the Build Alternative. Relocation of active businesses on affected parcels would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (see Section 3.15 of this EIS). • Construction of the run-through tracks would also take place on vacant property north of Commercial Street. Commercial Street would remain open during construction and access to all businesses would be maintained (see Section 3.3 of this EIS). • Noise and vibration effects on sensitive receptors were evaluated. None of the businesses along the Commercial Street corridor are classified as sensitive receptors (see Section 3.6 of this EIS). • Mitigation Measure TR-1, Traffic Management Plan requires advance coordination with businesses and facilities prior to temporary street closures (See Section 3.3 of this EIS). • Figure 3.15-2 was updated to include Hiroshima Kenji-Kai of SoCal (#50) and the Japanese

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
		Evangelical Missionary Society (#51) on Page 3.15-17.
Community Impacts	• Impacts to fields, handball court, open space at William Mead Homes. • Opportunities for educational internships to involve community youth in internships and educational programs, allow more exposure to programs for young adults. • Request for presentation to William Mead Homes residents on methods to obtain jobs on Metro projects and work/training opportunities. • Displacement of unhoused community	• Temporary or permanent impacts to the recreational areas at William Mead homes would not occur with implementation of the Build Alternative. The area adjacent to Bolero Lane alongside the existing fence would be temporarily impacted during construction of the noise wall and would be restored to the existing condition or better after completion of the noise wall in coordination with HACLA. • Metro encourages participation in its student and emerging professional programs, which includes summer internships for high school juniors and seniors, and other internship programs. • Small and Disadvantaged Businesses interested in bidding work are encouraged to access Metro's Vendor Portal to learn about opportunities, bonding assistance, and become a certified Disadvantaged Business Enterprise or Small Business Enterprise. • Community Outreach meetings held on November 15, 2016, included stations for the Metro Jobs Programs through the Diversity and Economic Opportunity Department. The Metro Jobs Programs stations provided collateral materials about construction careers and Metro's Small Business Programs. A Metro Jobs Program station will also be set up at the public hearing for the DEIS. Metro's staff will also meet with William Mead Homes to provide an overview of Metro's jobs programs. • Construction will take place on existing ROW and on fenced, private parcels acquired for the Project. Displacement of unhoused individuals are not anticipated.
Construction	• Duration of construction. • Construction staging and vehicles driving through the community. • Impacts to parking during construction. • Impacts to cultural and religious institutions in Little Tokyo and request to include additional facilities (Hiroshima Kenjinkai, St. Francis Xavier Japanese Catholic Church, Japanese	• Construction of the Build Alternative would occur in multiple stages and would be phased to minimize impacts to local street circulation during construction. Temporary traffic delays and disruptions to traffic would occur during reconstruction of the Vignes Street Bridge and the Cesar Chavez Avenue Bridge. Reconstruction of these bridges would be phased and occur consecutively so that road closures would not be concurrent (see Section 3.3 of this EIS). • Noise mitigation measures include rerouting truck traffic away from residential streets to the extent possible and implementation of a proactive Community Notification Plan to address community

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
	Evangelical Missionary Society) in Community Facilities map	noise and vibration concerns during construction (see Section 3.6 of this EIS). Construction site access in the throat segment is expected to be at Alhambra Avenue and College Street (see Section 3.3 of this EIS). • There may be temporary impacts to parking at William Mead Homes during construction to allow for excavation of noise wall footings and equipment staging. This temporary encroachment would be coordinated with HACLA and the William Mead Homes Resident Advisory Committee prior to construction. A construction traffic management plan will be prepared prior to construction, which will require the contractor to coordinate construction closures and traffic detours with the local affected community. Advance notice will be provided to residents and communities to 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 (see Section 3.3 of this EIS). No other impacts to public or private parking areas are anticipated. • The Little Tokyo District would not be subject to construction proximity impacts, as construction activities would take place multiple blocks away and within existing ROW along the west bank of the Los Angeles River and there are no construction haul routes through the Little Tokyo District (See Section 4.6.1 of this EIS). Representatives from the Little Tokyo Business Association were presented this conclusion in February 2025 after the close of the Draft EIS/SEIR 45-day public comment period and no objections to this conclusion were received.
Hazardous Materials	• Concerns regarding possible existing contamination. • Concerns on potential health impacts due to the expected increase of train activity. • Concerns regarding potential groundwater contamination from project. • Concerns/questions regarding health risks due to dust resulting from soil testing. • Concerns of location of soil testing (Metro side vs. from William Mead Homes).	• An analysis was conducted to identify the potential to encounter contaminated soils and/or groundwater, or migration of contaminants during construction activities. Mitigation measures were identified to minimize adverse effects. A Phase II ESA is required to be prepared prior to final design for properties that will be affected by excavation (see Section 3.10 of this EIS). • An analysis was conducted to evaluate the potential for cancer risk to nearby sensitive receptors. After implementation of Mitigation Measure AQ-3, Adaptive Air Quality Mitigation Plan, there would be a reduction of pollutant concentrations to below SCAQMD's threshold of 10 in 1 million for cancer risk at any of the identified sensitive receptors near the Build

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
		Alternative. Pollutant concentrations would decrease by 30 percent in 2026 and 2031 and 37 percent in 2040 with implementation of emerging rail technologies (see Section 3.5 of this EIS). • Geotechnical and Phase II soil testing near William Mead Homes was conducted from within the railroad ROW. A site-specific HASP was prepared for that soil testing work. A HMMP, parcel-specific Soil Management Plan, and HASPs will be prepared prior to any further investigations and construction to identify specific hazards and to outline provisions for how soils will be managed to reduce potential public health impacts. HASPs will be prepared to meet OSHA requirements and all applicable federal, state, and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during construction. All plans pertaining to work on properties with LUCs will be reviewed by the Department of Toxic Substances Control to verify that construction activities would be managed in a manner protective of public health (see Section 3.10 of this EIS).
Historical resources	• Archaeological remains in historic Chinatown and the Mexican-American neighborhood north of Cesar Chavez Avenue. • Effects on the historical significance and structural integrity of the historic Macy Street school building (no longer a school). • Cultural resources evaluation of US-101 to determine its eligibility for listing in the National Register of Historic Places. • Historical aspects of Bauchet Street. • Consideration of Union Station as site for gatherings, meetings and performances, and local cultural museum offerings. • Preservation or reuse of historic canopies.	• Historic resources within the defined APE were evaluated to determine potential eligibility for the National Register of Historic Properties (NRHP) as well as potential impacts for properties listed or eligible for the NRHP. Coordination about the eligibility and assessment of effects is ongoing with the State Historic Preservation Office, Tribes, and other consulting parties. US-101 was determined not eligible for the NRHP. No adverse effect was identified for Macy Street School (see Section 3.12 of this EIS). • US-101 between Grand Avenue and Vignes Street was evaluated and determined not eligible for the NRHP, nor was it a CEQA historical resource. • Mitigation Measure CUL-1, ATP, was developed to minimize adverse effects to known archaeological properties and address accidental discoveries. This plan provides for monitoring during construction, stop work protocols for unanticipated discoveries, and development of visual exhibits within LAUS regarding the significance of the historic site, along with other measures to guide work in archaeologically sensitive areas (see Section 3.12 of this EIS). • Historical aspects of Bauchet Street were not considered because the location is outside the APEs considered for the historical analysis.

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
		• Union Station is available for events and community gatherings. Mitigation Measure CUL-1 includes provisions for development of visual exhibits within LAUS regarding the significance of the historic site. The existing spaces on the west side of LAUS that are used for gatherings, meetings, and performances, including the passenger waiting area, former ticketing room, Harvey House restaurant, and courtyards would not be altered during construction. The community spaces, including the newly constructed East and West Plazas, will be available for public use during operations. • The existing butterfly shed canopies would be too narrow to perform their historic function (protection from sun and inclement weather) effectively or safely and would not align with the widened platforms as part of the Build Alternative. As part of the Section 106 process, Metro is considering the feasibility of salvaging significant architectural details from LAUS, including a butterfly canopy, for potential use in an educational display.
Noise	• Current impacts to residents from existing operations. • Potential increase of impacts due to more trains resulting from the project. • Train activity impacts TV signals for William Mead Homes residents without satellite TV. • Consideration of Quiet Zone for William Mead Homes/request for elimination of horn blowing near William Mead Homes. • Sound walls as potential mitigation. • Sound wall details, including location, design, height, construction duration. • Request that sound walls be constructed before demolition or other substantial construction-related activities • Noise impacts to children during school time (William Mead Homes)	• A noise analysis was conducted to identify potential noise impacts to surrounding communities during construction and operations with increased train movements through LAUS. Sound walls are required to reduce operational noise levels and may be constructed during the first phase of the project to reduce construction-related noise at William Mead Homes and Care First Village for subsequent phases of construction. Details of the sound walls are specified in Mitigation Measure NV-1 and will be coordinated with William Mead Homes and Care First Village during design (see Section 3.6 and Section 4.5.1 of this EIS). • In response to comments about train activity impacting TV signals at William Mead Homes, sources of potential signal interference were discussed with communications engineers. PTC transmitters, which are federally required safety measures, already operate at the top end of the VHF TV spectrum and may already cause some signal interference with Channels 12 and 13 for households with over-the-air antennas for households near the railroad tracks. All residences with over-the-air antennas located near railroad tracks have the potential for signal interference for a short duration of time, similar to existing conditions.

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
	• Construction noise	• Safety improvements are proposed at the rail crossing on North Main Street to support the City of Los Angeles' future application to FRA for a quiet zone. Horns are used at the private crossings adjacent to William Mead Homes for safety purposes at the discretion of conductors per FRA protocol. • Noise impacts at Ann Street School were assessed and no moderate or severe impacts would occur (see Section 3.6 of this EIS). • Mitigation Measure NV-2 provides that continuous construction noise and vibration monitoring would occur, and if FTA's construction noise or vibration criteria are exceeded, the contractor would be directed to incorporate additional noise and vibration reduction methods. In addition, a community notification plan would be implemented to proactively address community concerns related to construction noise and vibration, prior to and during construction (see Section 3.6 of this EIS). • Mitigation Measure NV-1 was updated to specify that construction of two sound walls would be constructed as early as possible in the Project construction phase, including prior to any demolition, and prior to substantial construction-related activities.
Safety	• Safety measures to block access to tracks. • Current gates/fences are in bad condition. • Earthquakes. • Unhoused individuals in and around area	• Up to 33 new security positions would be required at LAUS upon implementation of the Build Alternative. • ROW fencing is incorporated into the design to block access to the tracks (see Section 3.14 of this EIS). • An analysis of the active faults and seismic regions in the Project area was reviewed. The Project study area would be subject to the same level of ground motion and associated seismic hazards in the event of an earthquake as under existing conditions; however, standard construction safety protocols, in accordance with OSHA requirements would be implemented during construction. Construction of the Build Alternative would not increase the probability of seismic ground shaking occurring. New infrastructure would be constructed to be seismically sound and would be designed and constructed per current building code requirements for seismic safety (see Section 3.9 of this EIS). • Metro developed a Homeless Outreach Plan in 2017 that has continued to evolve through a

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
		partnership with People Assisting the Homeless. Metro's Outreach Team consists of nurses, substance abuse counselors, mental health clinicians, former homeless individuals and other outreach workers seeking to help unhoused individuals who shelter within Metro's stations, trains and buses.
Transportation	• Access to nearby areas – desire for improved pedestrian access and bikeway connectivity and direct connections to transit (Downtown Los Angeles Streetcar, West Santa Anna Branch light rail, Blue Line, Silver Line). • Reduction of cars on Los Angeles Street. • Addition of bridge or other grade separated connection from Union Station to El Pueblo and Civic Center. • Parking during and after construction at William Mead Homes. • HSR options and potential to build underground. • Overall impacts from high-speed rail trains. • Impacts on bus routes and train on-time performance. • Closure of Vignes Street • US-101 on-off ramp improvements • US-101 HOV lane configuration • Widening of Alameda Street Bridge • Simultaneous detours/closure of roads during construction • Construction traffic impacts • Need for advanced notification to community ahead of construction related activities	• The Build Alternative includes improved pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit, which would decrease reliance on single-occupancy vehicles in the area. Due to the need to raise the concourse to allow for adequate vertical clearance for the run-through tracks, underground options for HSR would not be feasible (see Section 2.0 of this EIS). • A pedestrian bridge to connect LAUS to El Pueblo and Civic Center is outside the scope of this project. • There may be temporary impacts to parking at William Mead Homes during construction to allow for excavation of noise wall footings and equipment staging. This temporary encroachment would be coordinated with HACLA and the William Mead Homes Resident Advisory Committee prior to construction. A construction traffic management plan will be prepared prior to construction, which will require the contractor to coordinate construction closures and traffic detours with the local affected community. There would be no impacts to parking after construction. • The project team explored the potential for 14 configurations to accommodate high speed rail system. Design parameters identified for the project included avoiding impacts to the existing Red and Purple Line subway. Construction of underground high speed rail infrastructure would require tunneling below or lowering the existing Red and Purple Line subway tunnels, which are located 40 feet below ground level at the station, directly below the existing passenger tunnel floor. Alternatives that require lowering of the Red and Purple Line would be financially infeasible and would produce more construction than what is required to fulfill the purpose and need of the Project. Additionally, this would increase the potential for greater subsurface environmental impacts related to archaeological and paleontological resources, hazardous materials, geology, and soils. • The planned HSR system will operate within an existing rail corridor that is already characterized

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
		by existing train noise, vibration, visual impacts, air quality impacts, and an existing physical barrier. The addition of HSR service would provide permanent beneficial effects through improved regional accessibility, reduced vehicle trips on freeways, and improvements to transportation infrastructure. As discussed above, pollutant concentrations would decrease by 30 percent in 2031 and 37 percent in 2040 with implementation of emerging rail technologies (see Section 3.5 of this EIS). Construction of a noise wall would reduce operational noise to levels lower than the FTA severe impact criteria and safety improvements at the Main Street Bridge to support future application for a Quiet Zone would further reduce operational noise levels. • Mitigation Measure TR-1 requires alternative routes to be implemented to maintain access and connectivity during road closures and detours. Advance notice would be provided to public transit and bus operators to help maintain on-time performance during construction (see Section 3.3 of this EIS). • The Build Alternative does not require closure of Vignes Street (south of US-101) or realignment of Commercial Street. The run-through track alignment south of LAUS is Final EIR Project alignment. • With the Build Alternative, safety improvements and modifications would still be implemented at the NB US-101 Off-ramp to Alameda Street and SB US-101 On-ramp from Commercial Street. Changes to the SB US-101Off-Ramp to Commercial Street are not required. • Reconfiguration of the HOV lane along the US-101 is not part of the Build Alternative. • The Build Alternative would not cause long-term traffic impacts that would require widening of Alameda Street. • Mitigation Measure TR-1 includes advanced construction notifications for surrounding residents and communities and includes a requirement that the contractor avoid concurrent closures of Cesar Chavez Avenue and Vignes Street north of LAUS during peak hours, where feasible. • With implementation of proposed mitigation, temporary construction-related impacts in the AM or PM peak hours would not result in significant traffic delays per LADOT guidelines.

Table 4-2. Summary of Stakeholder Input from Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
Visual	• Visual impacts of run-through tracks over 101 to drivers. • Gateway Signage at 101 and Olvera Street District. • Cleanliness of trains and LAUS. • Opportunities for public art and murals as part of the project • Collaborative approach for the design of the sound walls at William Mead Homes • Commitment to the future maintenance of the sound wall	• An analysis was performed to consider the visual impacts of run-through tracks over US-101. • Gateway signage at US-101 and the Olvera Street District is outside the scope of this project and the Build Alternative. • Up to 13 new janitorial positions would be required as part of the Build Alternative to help ensure the cleanliness of LAUS. • Metro's onboard Ambassadors help to report maintenance, cleanliness, or safety concerns for an expedited response. • Opportunity for art installations may be considered during final design. • Mitigation Measure AES-1, Aesthetic Treatments requires coordination with HACLA regarding aesthetic enhancements to the sound walls. After construction is complete, the sound wall would be maintained per the provisions of a future agreement between HACLA and Metro.

4.5 Affected Environment

This section describes the affected environment within the community analysis study area, including minority communities, low-income communities, and non-minority communities; and minority demographics, low-income demographics, and non-minority demographics for the City of Los Angeles, the Community of Comparison.

Table 4-3 provides a summary of minority demographics, low-income demographics, and non-minority demographics for the City of Los Angeles and the community analysis study area as a whole. Low-income households comprise 16.6 percent of the population in the City of Los Angeles compared to 26.2 percent in the community analysis study area. Minority residents represent 71.9 percent of the population in the City of Los Angeles, compared to 80.9 percent of the community analysis study area.

Table 4-3. Community of Comparison and Community Analysis Study Area Demographic Characteristics

Characteristics	City of Los Angeles (Community of Comparison)	Community Analysis Study Area
Total Population	3,902,440	31,971

Table 4-3. Community of Comparison and Community Analysis Study Area Demographic Characteristics

Characteristics	City of Los Angeles (Community of Comparison)	Community Analysis Study Area
Minority Population (%)	71.9	80.9
Low-Income Households (%)	16.6	26.2

4.5.1 Minority Communities

Table 4-4 provides a summary of minority communities by Census Tract within the community analysis study area and identifies if the minority community percentage for each census tract exceeds the 79.1 percent threshold of the Community of Comparison (City of Los Angeles). As shown on Figure 4-1 and Table 4-4, Census Tracts 2060.10, 2060.20, 2062.01, 2062.02, 2071.02, 2071.03, and 2074 have minority communities that exceed the 79.1 percent threshold.

Within Census Tract 2060.20, 2020 Decennial Census data were reviewed to determine minority communities at the block level to better understand where minority communities are in proximity to the Project to assess impacts. William Mead Homes is a 415-unit public housing community located adjacent to the railroad ROW where a portion of the Project footprint traverses the property. As discussed previously, approximately 98 percent of the residents are part of a minority community. The Mozaic Apartments at Union Station is located within Census Block 1013 and includes 272 housing units. With a population of 545, data show a minority community of 61 percent. Census Blocks 1002 and 1003 include the Los Angeles County Men's Central Jail and Twin Towers Correctional Facility and have minority communities of 86 percent and 80 percent, respectively. Block level demographic information was not available for the Hilda J. Solis Care First Village, a 232-unit interim housing complex for unsheltered individuals, because it opened in May 2021 after the 2020 Decennial Census.

The Chinatown District is adjacent to the Project study area and located within the community analysis study area within Census Tracts 2071.02 and 2071.03 and a portion of Census Tract 2060.10. These Census Tracts have minority communities that exceed the 79.1 percent threshold.

The El Pueblo District is within Census Tract 2071.02, adjacent to Segment 2 of the Project study area and located within the community analysis study area. The El Pueblo District includes Olvera Street and the El Pueblo de Los Angeles Historical Monument. This Census tract has minority communities that exceed the 79.1 percent threshold. The El Pueblo District is considered a minority community.

The Little Tokyo District is located within portions of Census Tracts 2062.01, 2062.02, 2062.52. 2073.06, and 2074. There are no residences in the portion of the Little Tokyo District traversed by the community analysis study area and collectively, the minority community in the Census

Tracts located within the community boundary do not exceed the 79.1 percent minority threshold. However, Census Tracts 2062.01, 2062.02, and 2074 have minority communities that exceed the 79 percent minority community threshold and there are also minority-owned businesses within the greater Little Tokyo District community boundaries. Therefore, the entire Little Tokyo District is considered a minority community and is evaluated as part of this analysis.

Census Tract 2060.51 south of LAUS encompasses the Arts District, which is an area of former warehouses and factories that have been transformed to work/live studios, galleries, and restaurants. Likewise, the Southern Industrial District in Census Tract 2060.52 is mostly industrial and commercial. These communities have minority communities below the 79.1 percent threshold, so they do not qualify as minority communities.

4.5.2 Low-Income Communities

Table 4-4 provides a summary of low-income communities by Census Tract within the community analysis study area compared to the City and identifies if the low-income community percentage for each census tract exceeds the $39,750 threshold of the Community of Comparison (City of Los Angeles). As shown on Figure 4-1 and Table 4-4, Census Tracts 2060.10, 2062.02, 2071.02, and 2071.03 have median incomes that are lower than 150 percent of the U.S. Census Bureau's poverty thresholds of the City of Los Angeles ($39,750).

The Arts District and Southern Industrial District in Census Tracts 2060.51 and 2060.52, respectively, do not have low-income communities that are meaningfully greater than the City of Los Angeles.

Although the median income for Census Tract 2060.10 is higher than the federal poverty level, the median income for the Census Tract 2060.10, Block Group 2 containing William Mead Homes is $17,111, which is below the federal poverty level. William Mead Homes is considered a low-income community. Demographic census information was not available for the Care First Village, located in Census Tract 2060.20 adjacent to the railroad ROW north of LAUS; however, because the purpose of the complex is to provide interim housing to unsheltered individuals, it is considered a low-income community.

The median income for Census Tracts 2071.02 and 2071.03, the Chinatown District, is $32,450, which is below the federal poverty level. Likewise, the median income for Census Tract 2071.02, the El Pueblo District, is $31,071. Both communities are considered low-income communities.

One Census Tract within the Little Tokyo District, Census Tract 2062.02, has a median income of $19,420. Little Tokyo District is considered a low-income community.

Section 3.15, Socioeconomics and Communities Affected, of this EIS and the *Link US Community Impact Assessment* (Appendix D of this EIS) contain a detailed discussion of the demographic and community characteristics of the LAUS socioeconomic planning area, which is synonymous with the community analysis study area.

4.5.3 Identification of Additional Minority Communities, Low-Income Communities, and Non-Minority Communities

For the purposes of this analysis, additional minority communities, low-income communities, and non-minority communities within and adjacent to the Project study area were also considered based on demographic characteristics, stakeholder interviews and desktop reviews. Reviews included newer developments that were not captured in 2020 Census Data, institutionalized communities, recognized community boundaries, and workers that travel through LAUS on a daily basis. These minority communities, low-income communities, and non-minority communities are discussed below and depicted in Figure 4-2.

- ***Los Angeles County Men's Central Jail and Twin Towers Correctional Facility*** - As noted in Section 3.15, Socioeconomics and Communities Affected, of this EIS, a large percentage of the community in the community analysis study area is institutionalized at the Los Angeles County Men's Central Jail and Twin Towers Correctional Facility, which are located in Census Tract 2060.20 east of the railroad tracks. All other housing units in this Census Tract are located west of the railroad tracks. Because of the correctional facilities' locations relative to the Project footprint and limited exposure to the proposed infrastructure from the facility, minority communities for incarcerated and non-incarcerated individuals were calculated separately for Census Tract 2060.20 and reviewed at the Census Block level (See Table 4-1, Census Tract 2060.20, Block Groups 1001 and 1002, Block 1) to better understand potential effects. Incarcerated communities are considered as part of this analysis unless otherwise specified.

- ***Hilda J. Solis Care First Village (Care First Village)*** - Care First Village is a 232-unit interim housing complex for unsheltered individuals located in Census Tract 2060.20, adjacent to the railroad ROW north of LAUS. Demographics for Care First Village were not included in census data because it opened in May 2021 after the 2020 Decennial Census. Care First Village is considered a low-income community.

- ***William Mead Homes*** - Although the median income in Census Tract 2060.10 is higher than 150 percent of the federal poverty level, William Mead Homes is a public housing complex adjacent to the railroad ROW north of LAUS. Census Block information for William Mead Homes indicate the median household income is below 150 percent of the federal poverty level. William Mead Homes is considered a low-income community.

- ***Chinatown*** - The northwestern portion of the community analysis study area is within the Chinatown District. The Chinatown District is adjacent to, but not within, the Project study area. 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 is considered a minority and/or low-income community and is evaluated as part of this analysis.

- ***El Pueblo District*** - A portion of the community analysis study area that contains the El Pueblo District is immediately adjacent to Segment 2 of the Project study area. The El

Pueblo District includes Olvera Street and the El Pueblo de Los Angeles Historical Monument. Olvera Street contains several of Los Angeles's oldest historic buildings along with dozens of craft shops, restaurants, and other businesses. The El Pueblo District is evaluated as part of this analysis.

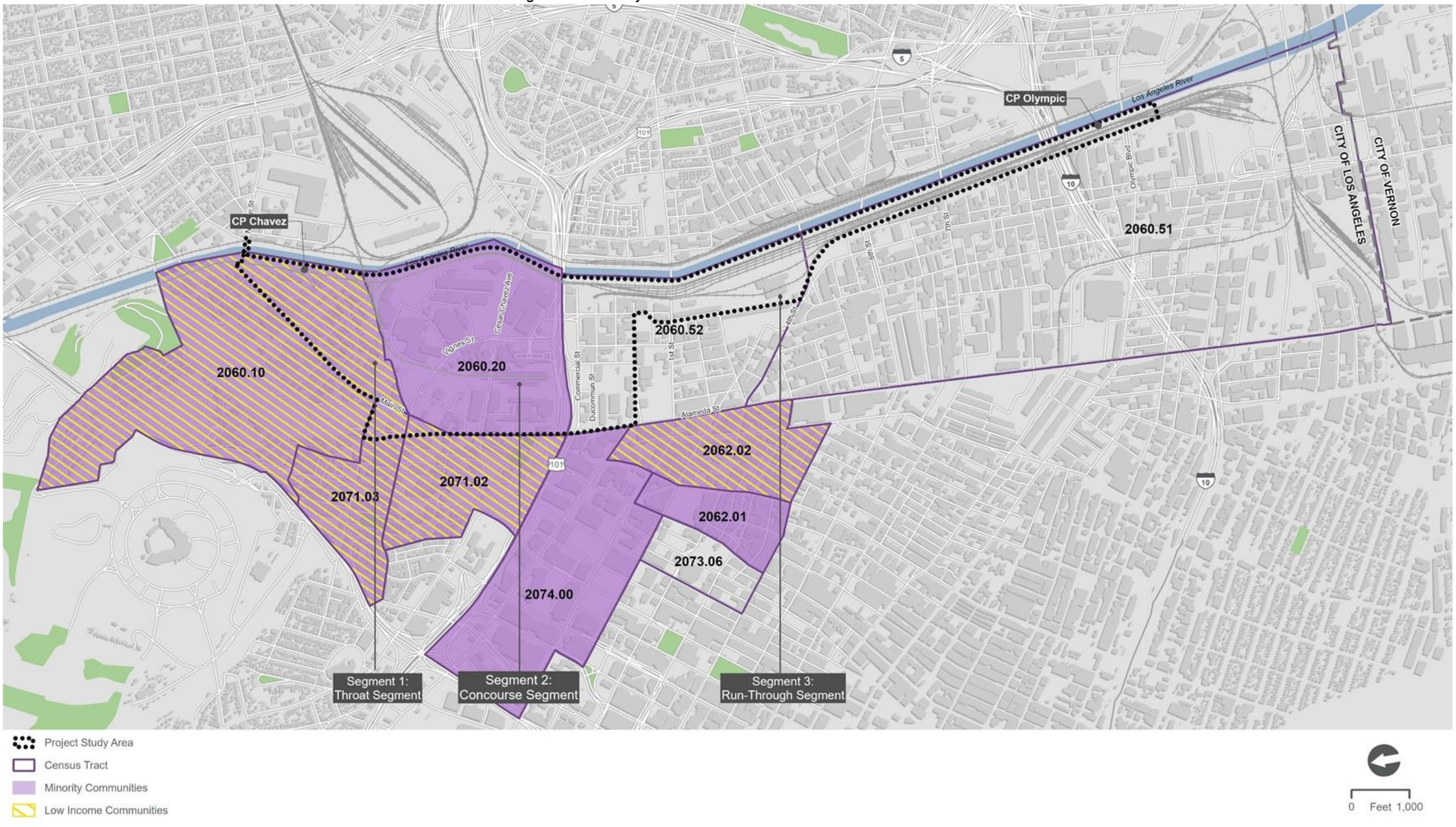
- ***Little Tokyo District*** - The western boundary of the community analysis study area south of US 101 was originally Alameda Street. A small portion of the City of Los Angeles' Little Tokyo Community Design Overlay District boundary (Little Tokyo District) overlaps with the Arts District and is located east of Alameda Street along 1st Street. ACS 2021 Census Block information (Block 1015, Block Group 1, Tract 2060.52) indicate there are no residences in the portion of the Little Tokyo District east of Alameda Street; however, there are residences and minority-owned businesses within the greater Little Tokyo District. To fully consider impacts to the Little Tokyo District community, the community analysis study area was expanded to include the entirety of the Little Tokyo District, located within Census Tracts 2062.01, 2062.02, 2062.52. 2073.06, and 2074. The Little Tokyo District is considered a minority and/or low-income community and is evaluated as part of this analysis.

- ***Federal Complex*** - A federal complex containing a Veterans Affairs Outpatient Clinic, the Federal Bureau of Prisons Metropolitan Detention Center, and the H. Pregerson Child Care Center is located along Alameda Street between Commercial Street and Temple Street, immediately west of the community analysis study area. These facilities may serve, or house disadvantaged communities and access to these facilities is considered as part of this analysis.

To better understand the demographics of workers in and around LAUS who would travel through the area on a daily basis, OnTheMap data was also reviewed for Census Tract 2060.20, Block Group 1. Data indicate that workers in the Block Group are 58.2 percent White Alone and 80.1 percent earn more than 150 percent of the federal poverty level. Communities working in this area would not be considered a minority and/or low-income communities. They would qualify as a non-minority community.

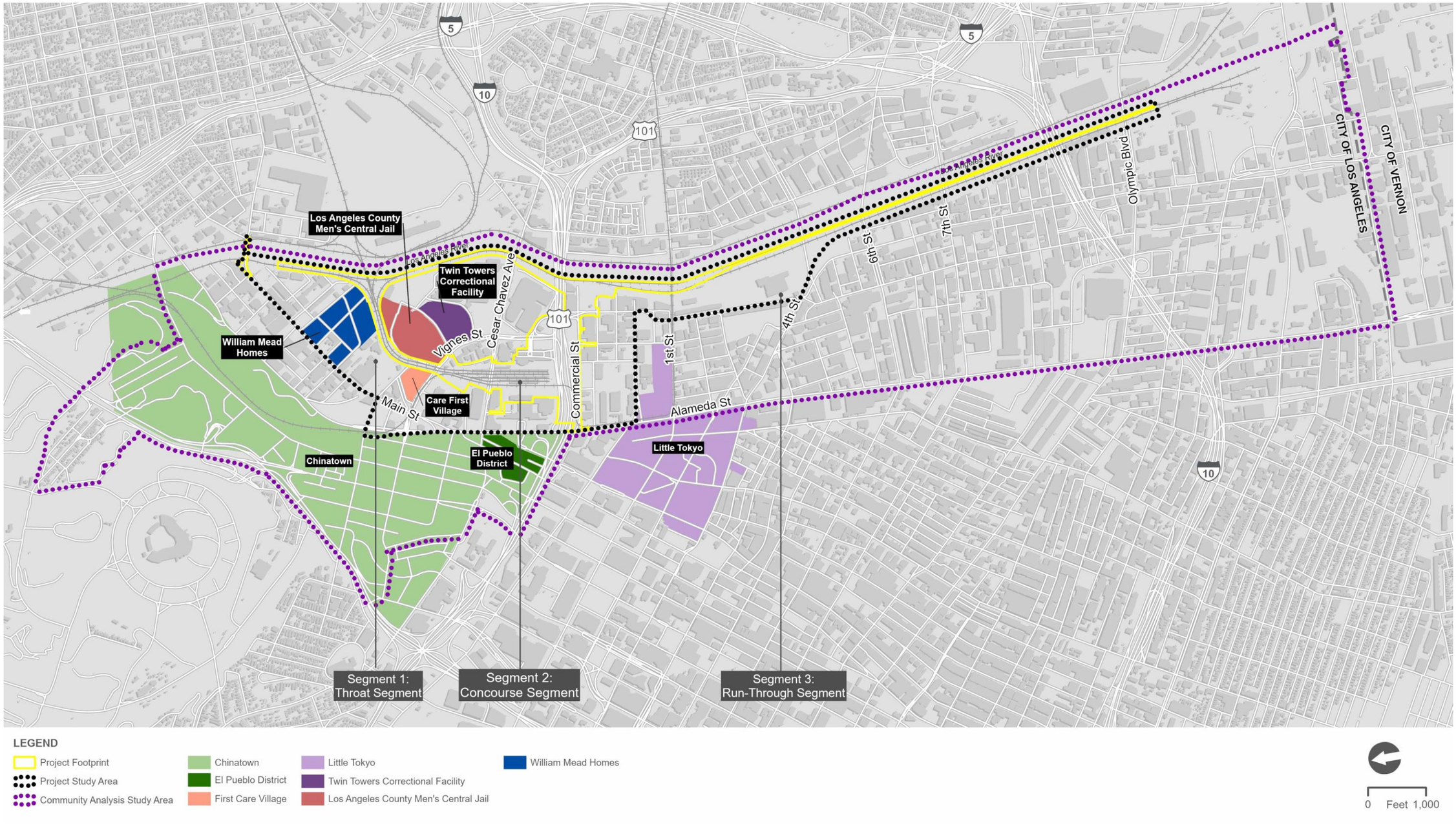
CalEnviroScreen 4.0, a map containing the disadvantaged communities designated by CalEPA for the purpose of Senate Bill (SB) 535, was also reviewed to determine if additional minority communities, low-income communities, and non-minority communities not described above may be present in the study area. The communities of William Mead Homes, Chinatown, El Pueblo District, and Little Tokyo District are identified as disadvantaged communities, defined as located within census tracts receiving the highest 25 percent overall scores in CalEnviroScreen 4.0.

Figure 4-1. Minority Communities and Low-Income Communities



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Figure 4-2. Additional Minority and/or Low-Income Communities



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Table 4-4. Minority and Low-Income Communities in the Community Analysis Study Area

Geographic Area	Minority Community			Low-Income Community			Metro EFC [c]
	Non-White/ Minority (%)[a]	Percent Minority in Affected Community >110% of Community of Comparison (79%)	Evaluated for Further Analysis?	Median Household Income ($)	Median Household Income <150% of DHHS Poverty Guideline ($39,750)?	Evaluated for Further Analysis?	
Community of Comparison							
City of Los Angeles	72	—	—	69,778	—	—	—
Affected Community							
Census Tract 2060.10 *(Total Population)* *(Segment 1: Throat Segment; Northern Industrial District/ Chinatown)*	89	Yes	Yes	46,250	No	No	Yes
Census Tract 2060.10 *(Block Group 2 – William Mead Homes)* *(Segment 1: Throat Segment; Northern Industrial District/ Chinatown)*	88	Yes	Yes	17,111	Yes	Yes	Yes
Census Tract 2060.20 (*Total Population)* *(Segment 2: Concourse Segment; Northern Industrial District)*	83	Yes	Yes	89,333	No	No	No

Table 4-4. Minority and Low-Income Communities in the Community Analysis Study Area

Geographic Area	Minority Community			Low-Income Community			Metro EFC [c]
	Non-White/ Minority (%)[a]	Percent Minority in Affected Community >110% of Community of Comparison (79%)	Evaluated for Further Analysis?	Median Household Income ($)	Median Household Income <150% of DHHS Poverty Guideline ($39,750)?	Evaluated for Further Analysis?	
Census Tract 2060.20 *(Block Groups 1001 and 1002, Block 1 - incarcerated population)[d,]* *(Segment 2: Concourse Segment; Northern Industrial District)*	86	Yes	Yes	N/A	N/A	N/A	No
Census Tract 2060.20 *(Block 1013, Block Group 1 - Mozaic Apartments)* *(Segment 2: Concourse Segment; Northern Industrial District)*	61	No	No	89,333	No	No	No
Census Tract 2060.51 *(Segment 3: Run-Through Segment; Arts District/Southern Industrial District)*	44	No	No	123,947	No	No	No
Census Tract 2060.52	73	No	No	102,996	No	No	No

Table 4-4. Minority and Low-Income Communities in the Community Analysis Study Area

Geographic Area	Minority Community			Low-Income Community			Metro EFC [c]
	Non-White/ Minority (%)[a]	Percent Minority in Affected Community >110% of Community of Comparison (79%)	Evaluated for Further Analysis?	Median Household Income ($)	Median Household Income <150% of DHHS Poverty Guideline ($39,750)?	Evaluated for Further Analysis?	
(Segment 3: Arts District/Southern Industrial District)							
Census Tract 2071.02 *(Segment 2: Concourse Segment; El Pueblo District)*	91	Yes	Yes	31,071	Yes	Yes	Yes
Census Tract 2071.03 *(Segment 2: Concourse Segment; Chinatown)*	92	Yes	Yes	32,450	Yes	Yes	Yes
Census Tract 2062.01 *(Segment 3: Little Tokyo District)*	79	Yes	Yes	43,103	No	No	Yes
Census Tract 2062.02 *(Segment 3: Little Tokyo District)*	83	Yes	Yes	19,420	Yes	Yes	Yes
Census Tract 2073.06 *(Segment 3: Little Tokyo District)*	61	No	No	41,686	No	No	Yes

Table 4-4. Minority and Low-Income Communities in the Community Analysis Study Area

Geographic Area	Minority Community			Low-Income Community			Metro EFC [c]
	Non-White/ Minority (%)[a]	Percent Minority in Affected Community >110% of Community of Comparison (79%)	Evaluated for Further Analysis?	Median Household Income ($)	Median Household Income <150% of DHHS Poverty Guideline ($39,750)?	Evaluated for Further Analysis?	
Census Tract 2074 *(Segment 3: Little Tokyo District)*	80	Yes	Yes	72,750	No	No	Yes

Source: Community Impact Assessment, Appendix D of this EIS, U.S. Census Bureau 2021
Notes:
[a] ***U.S. Census Bureau 2021 5-Year Estimate, Table B03002.***
[b] ***U.S. Census Bureau 2021 5-Year Estimate, Table S1901.***
[c] ***For purposes of this evaluation Minority and/or Low-Income Communities are considered Equity Focus Communities pursuant to Metro's Equity Platform.***
[d] ***U.S. Census Bureau 2021 5-Year Estimate, Table P18.***

4.6 Environmental Consequences

This section provides an evaluation of potential effects on minority communities, low-income communities, or non-minority communities within the community analysis study area to determine potential disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities and how such disproportionate effects may be avoided or minimized. The methods used to determine effects are presented above.

All environmental topics were reviewed to identify those that would not result in adverse effects or would not result in adverse effects after mitigation, based on the analysis described in Chapter 3.0 of this EIS. The topics with “not adverse’” identified under the Build Alternative column were not considered for additional community analysis because there would be no potential for disproportionate and adverse effects to minority communities, low-income communities, or non-minority communities. Topics that would result in adverse effects under the Build Alternative were further evaluated to determine if and to what extent these adverse effects would affect minority communities, low-income communities, or non-minority communities (i.e., have the potential to be disproportionate and predominately borne by minority communities, low-income communities, or non-minority communities). Table 4-5 includes all topics considered and identifies which topics were eliminated from further community analysis and which were retained and discussed below.

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Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
Land Use	Construction – Adverse Effect: • Construction activities adjacent to residential communities could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). • No physical or perceived division of an established community would occur. Operations – Adverse Effect: • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River and conflicts with a policy and program related to goods movement and the flow of freight traffic. Indirect: No Adverse Effect related to land use.	Construction: • TR-1: Prepare a Construction TMP. • AES-2: Minimize Nighttime Work and Screen Direct Lighting. • 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. • NV-1: Construct Sound Wall at William Mead Homes and Care First Village. • NV-2: Employ Noise- and Vibration-Reducing Measures during Construction. • NV-3: Prepare a Community Notification Plan for Project Construction. Operations: • AES-1: Aesthetic Treatments.	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
		• AES-3: Screen Direct Lighting and Glare. • LU-1: Enhance Neighborhood Connectivity. • TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street).		
Transportation	Construction – Adverse Effect: • Traffic delays on Vignes Street and Main Street intersection, and Mission Road and Cesar Chavez Avenue intersection, exceeding the 2.5 second delay significance criteria. • Temporary lane width reductions resulting in increased hazards. • Impacts to emergency response and access, due to potential delays in response times for emergency vehicles. • Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns. • Impacts to pedestrian and bicycle access and increased safety hazards near work zones.	Construction: • TR-1: Prepare a Construction TMP. • TR-2: Prepare Passenger Rail Operations Temporary Construction Staging Plan. • TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street). Operations: • LU-1: Enhance Neighborhood Connectivity. • TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street).	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Loss of approximately 5,500 feet of freight storage track capacity would cause operational inefficiencies when BNSF operates longer trains. Operations – Adverse Effect: • Increased traffic delays at the intersection of Center Street and Commercial Street. • Loss of approximately 5,500 feet of freight storage track capacity would cause operational inefficiencies when BNSF operates longer trains. Indirect Effects – Adverse Effect: • Loss of storage track capacity at the BNSF West Bank Yard would potentially increase rail operating costs, increased emissions, and traffic queuing/delays.	Indirect: • TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street).		
Visual Quality and Aesthetics	Construction – Adverse Effect: • Direct lighting on nearby residences would potentially expose residents of William Mead Homes, Care First Village and Mozaic Apartments to higher levels of lighting during the nighttime hours. Operations – Adverse Effect:	Construction: • AES-2: Minimize Nighttime Work and Screen Direct Lighting. Operations: • AES-1: Aesthetic Treatments.	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Construction of a sound wall on top of the retaining wall at William Mead Homes and along Care First Village would result in a moderately high change to visual quality. • Exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views and degrade the existing visual character for residents at the Mozaic Apartments. • Light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities for some of the units in the Mozaic Apartments. Indirect Effects: No adverse effects related Visual Quality and Aesthetics.	• AES-3: Screen Direct Lighting and Glare.		
Air Quality and Global Climate Change	Construction – Adverse Effect: • The total annual construction emissions associated with the Build Alternative would exceed the *de minimis* level for NOx. Operations – Adverse Effect:	Construction: • AQ-1: Fugitive Dust Control.[1] • AQ-2: Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and	Construction: No Adverse Effect Operation: No Adverse Effect Indirect:	Yes

[1] Although applicable thresholds are not exceeded, Mitigation Measure AQ-1 would still be implemented as a requirement of the Link US Final EIR and SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts.

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• The net increase in annual emissions in years 2026 and 2031 would exceed the *de minimis* level for NOx. • The net increase in annual emissions in year 2040 would be offset by the reduction in emissions from the Malabar Yard railroad improvements and would not exceed the *de minimis* level for any criteria pollutant. Indirect: A beneficial effect related to air quality and global climate change would result due to modal shift toward transit use and away from single-occupancy vehicle use.	Renewable Diesel Fuel for Off-Road Equipment. Operations: • AQ-3: Adaptive Air Quality Management Plan.	Beneficial Effect	
Noise and Vibration	Construction – Adverse Effect: • Construction noise impacts at William Mead Homes and Care First Village associated with construction of the sound wall. • Construction noise and vibration impacts at William Mead Homes, Care First Village, and Mozaic Apartments. Operations – Adverse Effect: • Severe operational noise impacts at William Mead Homes, Care First Village, and Mozaic Apartments.	Construction: • NV-1: Construct Sound Walls. • NV-2: Employ Noise- and Vibration-Reducing Measures during Construction. • NV 3: Prepare a Community Notification Plan for Project Construction Operation. Operations: • NV-1: Construct Sound Walls.	Construction: Adverse Effect Operation: No Adverse Effect Indirect No Adverse Effect	No – Construction advanced for further analysis

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	Indirect: No Adverse Effect related to noise and vibration.			
Biological and Wetland Resources	Construction – Adverse Effect: • Removal of naturally occurring or ornamental (planted) trees, including palms, may result in direct effects on western mastiff bat and western yellow bat. • Direct effects on active nests for migratory birds could result in moderate reductions in population size. • Removal or disturbance of one or more native tree species may conflict with the City of Los Angeles Protected Tree and Shrub Regulations (Ordinance No. 186873) and LA Metro's Tree Policy. Operations: No Adverse Effect Indirect: • Indirect effects on active nests may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.	Construction: • BIO 1: Bats. • BIO-2: MBTA Species. • BIO-3: Protected Trees.	Construction: No Adverse Effect Operation: No Adverse Effect Indirect No Adverse Effect	Yes
Floodplains, Hydrology, and Water Quality	Construction – Adverse Effect:	Construction:	Construction:	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial erosion on adjacent properties. • Sediments, 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 into the Los Angeles River. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. • Construction activities could result in exceedance of stormwater and non-stormwater discharge if runoff is not properly managed. • Extracted contaminated groundwater could degrade surface water and exceed water quality objectives. Operations – Adverse Effect: • Alteration of existing drainage patterns in the Project study area could result in localized flooding if not properly managed.	• HWQ-1: Prepare and Implement an SWPPP. • HAZ-1: Prepare a Construction Hazardous Materials Management Plan. • HWQ-5: Comply with Local Dewatering Requirements. • HWQ-6: Comply with Local Dewatering Requirements for Contaminated Sites. Operations: • HWQ-2: Final Water Quality BMP Selection (Caltrans ROW). • HWQ-3: Final Water Quality BMP Selection (Railroad ROW). • HWQ-4: Final Water Quality BMP Selection (City of Los Angeles). Indirect: • HWQ-7: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses.	No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Increased impervious area would increase the volume of flow and would exceed the capacity of some on-site drainage systems. • Minor amounts of metals from brake dust, oil and grease could discharge into the existing drainage systems. Indirect – Adverse Effect: • The increase in impervious surface would result in increased pollutant build up and wash off during rain events. The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport. • Acquisition of parcels with existing Industrial General Permits (IGP) include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.			
Geology, Soils, and Seismicity	Construction – Adverse Effect: • Settlement, both long term and immediate, is anticipated to occur in Segment 2.	Construction: • GEO-1: Prepare Final Geotechnical Report. Operations:	Construction: No Adverse Effect Operation: No Adverse Effect	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• There is an increased risk of damage from corrosive soils, which over a period of time could react with construction materials, such as concrete and ferrous metals, and damage foundations and buried pipelines. Operations – Adverse Effect: • Corrosion, if not accounted for during the design process, can weaken structures built on corrosive soils, potentially causing structural failure. Indirect – Adverse Effect: • Displacements and bearing capacity failures could occur due to construction in areas susceptible to liquefaction	• GEO-1: Prepare Final Geotechnical Report. Indirect: • GEO-1: Prepare Final Geotechnical Report.	Indirect: No Adverse Effect	
Hazardous Waste and Materials	Construction – Adverse Effect: • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. • The accidental release of hazardous materials could pose a hazard to construction employees, the public, and the environment.	Construction: • HAZ-1: Prepare a Construction Hazardous Materials Management Plan. • HAZ-2: Prepare Project-wide Phase II ESA. • HAZ-3: Prepare a General Construction Soil Management Plan. • HAZ-4: Prepare Parcel-Specific Soil	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Soil vapor intrusion from methane seeps and area wide groundwater contamination could occur if changes in vapor migration pathways result from construction. • Construction activities could cause the migration of contaminants through changes in groundwater flow. • LUCs 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. Operations – Adverse Effect: • Rail emissions will impact the net influence of emissions. The net increase in annual emissions associated with operation would not exceed the *de minimis* level for NOx. Indirect – Adverse Effect: REC sites located within the Project footprint may result in the migration of hazardous materials into other properties while construction is occurring.	Management Plans and HASPs. • HAZ-5: LUC Sites and Coordination with the DTSC. • HAZ-6: Halt Construction Work if Potentially Hazardous Materials/ Abandoned Oil Wells are Encountered. • HAZ-7: Compliance with the City of Los Angeles Building Code Methane Regulations. • HAZ-8: Pre-Demolition Investigation. Indirect: • HAZ-6: Halt Construction Work if Potentially Hazardous Materials/ Abandoned Oil Wells are Encountered.		

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
Public Utilities and Energy	Construction – Adverse Effect: • Construction-related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. Operations – Adverse Effect: • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. Indirect – Beneficial Effect: • Future increases in rail/transit for the region is an indirect beneficial effect on energy resources.	Construction: • HWQ-1: Prepare and Implement an SWPPP. Operations: • HWQ-2: Final Water Quality BMP Selection (Caltrans ROW). • HWQ-3: Final Water Quality BMP Selection (Railroad ROW). • HWQ-4: Final Water Quality BMP Selection (City of Los Angeles).	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: Beneficial Effect	Yes
Cultural and Paleontological Resources	Construction – Adverse Effect: • Adverse effects may occur on one archaeological historic property (CA-LAN-1575/H) and three built environment historic properties (Los Angeles Union Station Passenger Terminal, Vignes Street	Construction: • CUL-1: Archaeological Treatment Plan (ATP). • CUL-2: Built Environment Treatment Plan (BETP). • PAL-1: Paleontological Mitigation Plan (PMP).	Construction: Adverse Effect Operation: No Adverse Effect Indirect: Adverse Effect	No – Construction and Indirect Effects advanced for further analysis

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	Undercrossing, and North Main Street Bridge). • Adverse effects may occur in paleontologically sensitive sediments where resources could be encountered during excavation. Operations: No Adverse Effect. Indirect – Adverse Effect: • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources. • Adverse effects may occur from increased accessibility to fossils buried in subsurface sediments.	• PAL-2: Paleontological WEAP Training. • PAL-3: Curation. Indirect: • CUL-1: Archaeological Treatment Plan (ATP). • PAL-1: Paleontological Mitigation Plan (PMP). • PAL-2: Paleontological WEAP Training. • PAL-3: Curation.		
Economic and Fiscal Impacts	Construction, Operations, and Indirect – Beneficial Effect: Beneficial economic impacts would occur from generated employment, labor income, and tax revenues.	N/A	Construction: Beneficial Effect Operation: Beneficial Effect Indirect: Beneficial Effect	Yes
Safety and Security	Construction – Adverse Effect:	Construction:	Construction:	Yes

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Impacts to emergency response and access, due to potential delays in response times for emergency vehicles. • Construction of proposed infrastructure over and adjacent to City streets could affect accessibility to private driveways, parking areas, loading docks, sidewalks, and bike lanes. • Construction activities would potentially create air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. Operations – Beneficial Effect: • New bridges will be designed to meet current seismic design standards and support the additional loading requirements. • Safety and accessibility upgrades associated with the proposed concourse-related improvements would improve emergency access for first responders and improve passenger concourse egress and ingress and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements.	• TR-1: Prepare a Construction Traffic Management Plan. • 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.	No Adverse Effect Operation: Beneficial Effect Indirect: No Adverse Effect	

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	• Safety improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. • Improvements on Vignes Street and Cesar Chavez Avenue would enhance pedestrian and bicycle safety. Indirect: No adverse effect.			
Socioeconomics and Communities	Construction – Adverse Effect/Beneficial Effect: • Roadway closures and detours within the Project footprint may temporarily restrict or impede access to community facilities such as parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries and places of worship outside of the Project footprint and within the Socioeconomic Planning Area. • Impacts to emergency response and access, due to potential delays in response times for emergency vehicles. • Generation of employment, labor income, and federal, state, and local tax revenues.	Construction: • TR-1: Prepare a Construction Traffic Management Plan. • TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street).	Construction: No Adverse Effect Operation: No Adverse Effect Indirect: No Adverse Effect	Yes (Displacement Effects advanced for further analysis)

Table 4-5. Summary of Effects for the Build Alternative

Resources	Build Alternative			Topic Eliminated from Further Community Analysis
	Summary of Adverse Effects	Proposed Mitigation (Full Descriptions Provided in EIS Section 3.2 through 3.15)	Effect After Mitigation	
	Operations – Adverse Effect/Beneficial Effect: • Three non-residential displacements would be required; one of which is the BNSF West Bank Yard with regional importance to goods movement. • Generation of employment, labor income, and federal, state, and local tax revenues. Indirect – Beneficial Effect: • Wages paid to workers in construction trades or supporting industries would be spent on other goods and services. • Roadway improvements south of LAUS would encourage active transportation and non-motorized accessibility in the surrounding areas.			

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4.6.1 Topics Evaluated

The Build Alternative would have a disproportionate and adverse effect on a minority community, low-income community, or non-minority community if implementation would:

A. Result in an adverse effect that is predominantly borne by a minority community, low-income community, or non-minority community; or

B. Result in an adverse effect that will be suffered by the minority community, the low-income community, or the non-minority community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by another community.

TOPIC 4.0-A	Result in an adverse effect that is predominantly borne by a minority community, low-income community, or non-minority community.

No Action Alternative

Under the No Action Alternative, existing baseline conditions are expected to continue. LAUS would continue to operate as it does today, with passenger rail service that causes noise impacts to the communities adjacent to the railroad ROW and LAUS. Pedestrian safety improvements would not be implemented at the Main Street at-grade crossing, which would preclude the opportunity for the City of Los Angeles to implement a Quiet Zone at this crossing. Noise levels would remain high for sensitive receptors located near the existing track alignment, including William Mead Homes and Care First Village. Train movements in the Project study area are assumed to remain similar to existing conditions.

The No Action Alternative would not include new infrastructure and, therefore, would not result in physical impacts or changes to existing conditions within the Project study area. LAUS Passenger Terminal, Vignes Street Undercrossing, North Main Street Bridge, Archaeological Site P-19-001575 (CA-LAN-1575/H), and paleontological resources would remain in their current states. The Vignes Street Bridge would not be reconstructed and would continue to deteriorate. Safety and ADA improvements would not be implemented at the North Main Street Bridge. The pedestrian passageway below the rail yard would not be expanded and concourse improvements would not be constructed, eliminating the potential to encounter archaeological resources. The traveling public and the community living and working within the community analysis study area, including minority and low-income communities as well as non-minority and non-low-income communities, would continue to experience constrained circulation in the LAUS platforms, concourse, and passageway. No displacements would occur. No new direct or indirect adverse effects would be predominantly borne by minority communities, low-income communities, or non-minority communities, and there would not be disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities under the No Action Alternative.

Build Alternative

Direct Effects – Construction

Analysis of Effects on Minority Communities, Low-Income Communities, or Non-Minority Communities

The Chinatown District is located west and northwest of the Project study area and the El Pueblo District is located west of the Project study area. Both communities include businesses, residences, and community resources within their boundaries. Based on the analysis performed in Chapter 3.0 of this EIS, neither the Chinatown District or the El Pueblo District would be subject to proximity impacts related to noise, vibration, air quality, access, loss of parking, or other construction or operations impacts even before mitigation measures are implemented.

As shown on Figure 4-3, identified construction haul routes include US-101 and short sections of Grand Avenue and Broadway to access US-101 entrances and exits, Cesar Chavez Avenue, and Vignes Street. Cesar Chavez Avenue forms the northern community boundary of the El Pueblo District and travels through the Chinatown District. In addition, the sections of Grand Avenue and Broadway that would be used by construction trucks to access US-101 are within the Chinatown District. Each of these roadways are designated truck routes by LADOT. The *Link US Traffic Impact Assessment* 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. It is estimated that only 30 percent of the trucks, or 9 trucks, would travel to and from US-101, utilizing Cesar Chavez Avenue. The remaining trucks would use the Mission Road and Vignes Street ramps to US-101. The additional 9 trucks would not impact traffic operations, create physical or perceived barriers, or limit access or circulation within these Districts. No adverse effect on either the Chinatown District or El Pueblo District would occur.

The City of Los Angeles' Little Tokyo Community Design Overlay District boundary (Little Tokyo District) is located south and west of Segment 3 of the Project study area. The majority of the Little Tokyo District is located west of Alameda Street and a small portion of the community boundary overlaps with the Arts District east of Alameda Street along 1st Street. The portion of the Little Tokyo District located west of Alameda Street includes residences, businesses, the Arts District/Little Tokyo Metro Station, and community resources. There are no identified residences within the portion of the Little Tokyo District that is east of Alameda Street, which is the closest area to the Project footprint. The area east of Alameda Street and north of 1st Street includes the Los Angeles Hompa Hongwanji Buddhist Temple (Nishi Betsuin) and Nishi Child Development Center on 1st Street, institutional uses, and surface parking lots. Zenshuji Soto Mission, Hiroshima Kenjikai, and St. Francis Xavier Japanese Catholic Church are located east of Alameda Street and south of 1st Street. Hompa Hongwanji Buddhist Temple is located closest to construction activities; however, based on the analysis performed in Chapter 3.0 of this EIS, the Little Tokyo District would not be subject to proximity impacts related to traffic, noise, loss of parking, or other construction or operations impacts even before mitigation measures are implemented. Construction activities closest to the Little Tokyo District would take place multiple blocks away on Commercial Street and within existing railroad ROW along the west bank of the

Los Angeles River. There are no construction haul routes that would travel through the Little Tokyo District. There would be no interruptions to traffic patterns or access restrictions to residences, businesses, and parking facilities within the Little Tokyo District. There would be no construction activities or construction traffic routing that would create physical or perceived barriers within the community, limit access to the Temple or any other community facilities or disrupt religious or cultural ceremonies. No adverse effect on the Los Angeles Hompa Hongwanji Buddhist Temple (Nishi Betsuin), Nishi Child Development Center, Zenshuji Soto Mission, Hiroshima Kenjikai, St. Francis Xavier Japanese Catholic Church, or the Little Tokyo District would occur.

A federal complex containing a Veterans Affairs Outpatient Clinic, the Federal Bureau of Prisons Metropolitan Detention Center, and the H. Pregerson Child Care Center is located along Alameda Street between Commercial Street and Temple Street, immediately west of the community analysis study area. Construction truck haul routes shown in the *Link US Traffic Impact Assessment* and on Figure 4-3 indicate that construction truck traffic would not travel on the segment of Alameda between Commercial Street and Temple Street and there would be no degradation of operations at these intersections as a result of construction traffic. There would be no construction activities that would limit access to the services provided at this complex and no adverse effect would occur on these community services or the jail population.

The non-minority communities in the Arts District or in the Southern Industrial District are south of 1st Street, so they would not be subject to proximity impacts related to traffic, noise, loss of parking, or other construction or operations impacts even before mitigation measures are implemented. Construction truck haul routes shown in the *Link US Traffic Impact Assessment* and on Figure 4-3 show construction truck traffic would remain blocks north of 1st Street, and there would be no degradation of operations at intersections in the Arts District or in the Southern Industrial District as a result of construction traffic. Based on the analysis performed in Chapter 3.0 of this EIS, the Arts District and the Southern Industrial District would not be subject to proximity impacts related to traffic, noise, loss of parking, or other construction or operations impacts even before mitigation measures are implemented.

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Figure 4-3. Truck Haul Routes



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Analysis of Adverse Effects After Implementation of Mitigation

With implementation of proposed mitigation measures for the Build Alternative, impacts related to land use and planning; transportation; visual quality and aesthetics; air quality and global climate change; biological and wetland resources; floodplains, hydrology, and water quality; geology, soils, and seismicity; hazardous waste and materials; public utilities and energy; economic and fiscal impacts; safety and security; and socioeconomics and communities would not be adverse. Mitigation measures would apply uniformly to minority and/or low-income communities and non-minority and/or non-low-income communities.

The Build Alternative would result in temporary adverse environmental and human health effects during construction for noise and vibration (Section 3.6 of this EIS) and cultural and paleontological resources (Section 3.12 of this EIS). Although mitigation measures are proposed to avoid and minimize adverse effects, temporary effects would remain adverse after implementation of mitigation during construction. No adverse effects would remain during operations.

Further consideration of these adverse effects is provided below in the context of whether the effect would be predominantly borne by a minority community, low-income community, or non-minority community.

Noise and Vibration

Noise from construction activities would temporarily exceed noise standards and affect sensitive receptors nearest to the Project footprint for the Build Alternative. Sensitive receptors (in areas containing both minority and/or low-income communities and non-minority and/or non-low-income communities) in the community analysis study area closest to the construction area would be subject to the same level of daytime and nighttime noise levels. These construction noise impacts would occur within the following two census tracts:

- Census Tract 2060.10 contains a minority and/or low-income community (both minority and low-income) primarily concentrated within William Mead Homes.
- Census Tract 2060.20 includes two jails (Twin Towers Correctional Facility and Los Angeles Men's Central Jail), Care First Village (low-income), and the Mozaic Apartments (a market-rate apartment complex). Census data for Census Tract 2060.20 indicate that the Census Tract as a whole contains minority communities; however, census data at the block group level indicate that the Mozaic Apartments is not a low-income or a minority community.

As identified in Section 3.6, Noise and Vibration, exterior noise experienced during construction at the two jail complexes would exceed FTA noise thresholds. However, the two jail complexes do not have outdoor uses and communities within the complexes would not be impacted. Interior noise levels are estimated to be at least 20 dB lower than those experienced at the exterior of the jail structures consistent with FHWA guidance for interior sound level attenuation, which would be similar for railroad noise sources (FHWA 2011). Because of the building characteristics of the two jail complexes (e.g., buildings made with concrete and containing thick windows), interior noise

experienced during construction would be below 45 A-weighted decibels day-night average sound level, which is a level that U.S. EPA (U.S. EPA 1974) has identified as a level that does not interfere with interior activities (e.g., speech and sleeping). Therefore, there are no adverse effects related to noise at the two jail complexes.

Construction activities associated with the Build Alternative would result in temporary periods of relatively high noise levels. Construction noise would exceed the FTA's construction noise guidelines at several residential units and other sensitive uses such as a recreational area and park/playground at William Mead Homes, Care First Village, and the Mozaic Apartments. These receptors would be subject to similar construction noise impacts at varying degrees and frequencies.

- At William Mead Homes, 41 residential units and one recreational area would be subject to construction noise that exceeds the City's 75 dBA limit.
- At Care First Village, 36 units and a playground/park would be subject to construction noise levels that exceed the City's 75 dBA limit.
- At Mozaic Apartments, 82 units would be subject to construction noise levels that would exceed the City's 75 dBA limit.

Mitigation Measure NV-2 (Employ Noise- and Vibration-Reducing Measures during Construction, described in Section 3.6.6 of this EIS) requires implementation of noise- and vibration-reducing measures including but not limited to constructing walled enclosures around loud activities or equipment, restricting pile driving to daytime periods, and rerouting truck traffic away from residential streets.

Mitigation Measure NV-3 (Prepare a Community Notification Plan for Project Construction, described in Section 3.6.6 of this EIS) requires implementation of a Community Notification Plan to proactively address community concerns related to potential noise and vibration impacts and also includes a requirement for Metro to provide a project liaison who would be available to respond to questions and complaints from the community. Implementation of Mitigation Measures NV-2 and NV-3 would reduce adverse construction-related noise effects and the annoyances caused by construction-related noise effects (in addition to vibration effects). Direct noise effects would be reduced through implementation of Mitigation Measures NV-2 and NV-3; however, some receptors at William Mead Homes, Care First Village, and Mozaic Apartments may still be subject to construction-related noise impacts that would exceed applicable thresholds. Therefore, impacts would remain adverse temporarily.

In an effort to keep construction noise and vibration levels below FTA's criteria, under Mitigation Measure NV-2, continuous construction noise and vibration monitoring is required to be conducted at the first row of residences at William Mead Homes, Care First Village, and Mozaic Apartments, within approximately 300 feet of construction activities. Monitors will be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance farther away. If FTA's construction noise or vibration criteria are exceeded, the contractor will be alerted and directed by Metro to

incorporate additional noise and vibration reduction methods, which may include temporary noise walls, acoustic blankets or soundproof window inserts along facades of sensitive buildings, as deemed necessary by the construction contractor.

Mitigation Measure NV-1 (Construct Sound Walls) is required to reduce operational noise levels. As early as possible in the Project construction phase, including prior to any demolition, and in any event prior to substantial construction-related activities, Metro would construct two permanent sound walls. Early construction of the permanent sound walls would further reduce noise impacts for units within William Mead Homes and Care First Village. Other permanent mitigation strategies such as sound insulation, window replacement, and replacing caulking or sealant are generally infeasible for two reasons:

1. William Mead Homes is eligible for listing on the NRHP and any modification of original metal-frame casement windows or the building structure would be subject to review under Section 106 of the NHPA and Section 4(f). Window replacement was determined to be infeasible because the permanent significant adverse effects to a character-defining feature would exceed the temporary adverse impacts of construction noise, which could be mitigated through other measures.

2. At Care First Village and Mozaic Apartments, the windows and sealant are already of sufficient quality that their replacement would not result in significant differences on interior noise levels.

Although Mitigation Measure NV-2 reduces noise generated during construction, construction noise impacts would remain adverse after implementation of mitigation. Given that some of the construction activities could occur during nighttime hours and the proximity of construction is anticipated to be very near to multiple units at William Mead Homes, Care First Village, and Mozaic Apartments, these activities would exceed FTA criteria for nighttime construction.

Noise-generating construction activities, such as construction of retaining walls and bridges, would occur at multiple locations in the study area, and would affect both minority and/or low-income communities and non-minority and/or non-low-income communities similarly. Noise during construction of the Build Alternative would have a temporary adverse effect on William Mead Homes and Care First Village; however, noise effects during construction would also temporarily affect the Mozaic Apartments in a similar fashion. Because construction noise impacts would affect both minority and/or low-income communities and non-minority and/or non-low-income communities in a similar intensity and frequency (77 units within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit and 82 units not within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit), temporary adverse effects associated with construction noise as part of the Build Alternative would not be predominantly borne by a minority and/or low-income community; or vice-versa for a non-minority community.

Cultural and Paleontological Resources

As described in the *Link US Finding of Effect Report* (Appendix M of this EIS), adverse effects on the following resources would occur under the Build Alternative:

- **Los Angeles Union Passenger Terminal.** The Build Alternative would destroy or substantially alter some of the following character-defining features that represent the interface of passengers between the station and tracks, including the pedestrian passageway (tunnel), ramps, platform railings, and solid balustrades, platforms, platform railings, butterfly shed canopies, south retaining wall, terminal tower, car supply building, and the Cesar Chavez Avenue Undercrossing. Additionally, while the individual canopies over the rail yard (Rail Yard Canopy Design Option 1) would not be visible behind the historic concourse (as viewed from Alameda Street) and outdoor courtyards, they are of non-historic dimensions to fit the widened and lengthened platforms, with modern design and materials. The grand canopy over the rail yard (Rail Yard Canopy Design Option 2) would introduce visual elements that would be visible behind LAUS' architecturally significant buildings as viewed from Alameda Street and would result in additional adverse effects by diminishing LAUS's integrity of design, setting, feeling, and association.

  Mitigation Measure CUL-2 (BETP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by providing for documentation of LAUS character-defining features, restoration of the existing LAUS concourse to its 1939 appearance, when feasible, development of an educational display at LAUS, development of design plans for Cesar Chavez Avenue and Vignes Street undercrossing that are compatible with the historic character of LAUS and consultation with SHPO, City of Los Angeles OHR, and the City of Los Angeles Cultural Heritage Commission during early design; however, adverse effects would remain unavoidable after implementation. LAUS is a regional transportation hub and any potential impacts to LAUS would be experienced by both the traveling public and the community living and working within the community analysis study area, which includes both minority and/or low-income communities and non-minority and/or non-low-income communities. OnTheMap data indicate that workers within Census Tract 2060.20, Block Group 1, where LAUS is located, are 58.2 percent White Alone and 80.1 percent earn more than 150 percent of the federal poverty level. The approximately 110,000 passengers that travel through LAUS on a daily basis and the residents of the Mozaic Apartments (non-minority and/or non-low-income community), would experience the impacts to LAUS about as frequently as the minority and/or low-income communities within the community analysis study area. Therefore, adverse impacts on the Los Angeles Union Passenger Terminal from construction of the Build Alternative would be not predominantly borne by a minority, community, low-income community, or non-minority community.

- **Vignes Street Undercrossing.** The Build Alternative would include demolition of the existing Vignes Street Undercrossing (which is eligible for listing in the NRHP under Criterion A) and replacement with a new bridge to support the tracks as they transition from the existing grade at Mission Junction up to the approximately 15-foot raised

elevation of the proposed rail yard. Mitigation Measure CUL-2 (BETP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by requiring design plans for the Vignes Street undercrossing to be compatible with the historic character of LAUS and providing for consultation with SHPO, City of Los Angeles OHR, and the City of Los Angeles Cultural Heritage Commission during early design; however, adverse effects would remain unavoidable after implementation. Any potential impacts to the Vignes Street Undercrossing as a cultural resource would be experienced equally by both the communities living and working within the community analysis study area and those that travel along Vignes Street. OnTheMap data for workers within Census Tract 2060.20, Block Group 1, where the Vignes Street Undercrossing is located, indicate that workers in the area would not be considered minority communities, low-income communities, or non-minority communities. Therefore, adverse impacts on the Vignes Street Undercrossing from construction of the Build Alternative would not be predominantly borne by a minority community, low-income community, or non-minority community.

- **North Main Street Bridge.** The Build Alternative has the potential to cause an adverse effect on the North Main Street Bridge, which has been determined eligible for listing on the NRHP. 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. Implementation of Mitigation Measure CUL-2 (BETP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by requiring that design plans for work on the character-defining features of North Main Street Bridge be developed in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties and require feedback on early designs by consulting parties to progress the design. However, adverse effects would remain unavoidable after implementation of Mitigation Measure CUL-2. There are no minority or low-income communities that front the North Main Street Bridge and that would have increased exposure to changes to the resource. Adverse effects to the North Main Street Bridge would be experienced equally by the traveling public and community living and working within the community analysis study area, including both minority and/or low-income communities as well as non-minority and/or non-low-income communities. Therefore, adverse impacts to the North Main Street Bridge from construction of the Build Alternative would not be predominantly borne by a minority community, low-income community, or non-minority community.
- **Archaeological Site P-19-001575 (CA-LAN-1575/H).** The Build Alternative would result in the disturbance, displacement, or damage to archaeological remains present in Archaeological Site P-19-001575 (CA-LAN-1575/H), which has been determined eligible for listing in the NRHP under Criterion D. Components that contribute to the site's NRHP eligibility have yielded, and retain the potential to yield, significant archaeological data regarding the Late Prehistoric Period (AD 1000–1770) and American Period (AD 1850–1971). Implementation of Mitigation Measure CUL-1 (ATP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by preparing an ATP that includes a site-specific sensitivity model to guide work,

outlines processes for testing, evaluation and data recovery of known features and deposits, identifies protocols for accidental discoveries, prepares an outreach plan for this site, and plans for ownership and curation of data. In addition, Mitigation Measure CUL-1 requires training for construction personnel to protect cultural resources. However, adverse effects would remain unavoidable after implementation of Mitigation Measure CUL-1. Due to the subsurface nature of the site, potential effects to Archaeological Site P-19-001575 (CA-LAN-1575/H) would be experienced equally by the community living and working within the community analysis study area, including both minority and/or low-income communities as well as non-minority and/or non-low-income communities. Mitigation Measure CUL-1 provides for an outreach plan for discoveries and data curation. Therefore, adverse impacts to Archaeological Site CA-LAN-1575/H from construction of the Build Alternative would not be predominantly borne by a minority community, low-income community, or non-minority community.

- **Paleontological Resources.** Construction of the Build Alternative could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Ground-disturbing construction activities for all phases of work in shallow layers (i.e., fill or recent alluvium) would not affect paleontological resources. Deeper excavations beneath artificial fill or recent alluvium for components such as proposed bridge structures (run-through tracks structure, Cesar Chavez and Vignes Street Undercrossings, etc.) and modifications to existing roads and highways have the potential to affect 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 N of this EIS]) and underlying Puente Formation (reported at depths of approximately 90 to 100 feet in areas around the newly proposed concourse). This is considered an adverse effect. Implementation of Mitigation Measures PAL-1 through PAL-3 would minimize adverse effects of the Build Alternative on paleontological resources. Mitigation Measure PAL-1 requires the development and implementation of a PMP including site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery; Mitigation Measure PAL-2 requires provisions that require preparation and implementation of a WEAP training; and Mitigation Measure PAL-3 requires arrangements for curation of significant fossils recovered during construction. With the implementation of Mitigation Measures PAL-1 through PAL-3, a direct adverse effect could still occur during construction because paleontological resources are non-renewable. Potential effects to paleontological resources would be experienced equally by the community living and working within the community analysis study area, including both minority and/or low-income communities as well as non-minority and/or non-low-income communities. Therefore, adverse impacts to paleontological resources from construction of the Build Alternative would not be predominantly borne by a minority community, low-income community, or non-minority community.

Direct Effects – Operations

The Build Alternative would result in adverse effects on communities and neighborhoods for the following resources during operations:

- Land Use and Planning.
- Transportation.
- Visual Quality and Aesthetics.
- Air Quality and Global Climate Change.
- Noise and Vibration (Operational Noise).
- Floodplains, Hydrology, and Water Quality.
- Geology, Soils, and Seismicity.
- Hazardous Waste and Materials.
- Public Utilities and Energy.
- Cultural and Paleontological Resources.

With implementation of mitigation measures identified in Table 4-5, impacts related to land use and planning; transportation; visual quality and aesthetics; air quality and global climate change; noise and vibration; floodplains, hydrology, and water quality; geology, soils, and seismicity; hazardous waste and materials; public utilities and energy; and cultural and paleontological resources would not be adverse. Therefore, there are no adverse effects on these resources related to operation that would be predominantly borne by minority community, low-income community, or non-minority community.

Displacements

As discussed in Section 3.15 of this EIS, the Build Alternative would displace one commercial business (Life Storage) and two industrial/manufacturing businesses (Amay's Bakery, which is a food processing plant, and a portion of BNSF's West Bank Yard). These businesses are located Census Tract 2061.52, a non-minority community, but not a low-income Census Tract. Based on available information, one of the businesses to be relocated is assumed to be minority-owned business and/or a marginal business, which is a business that does not have a present or future capacity to generate more than enough income to provide a minimal living and would require special advisory relocation services.

The Build Alternative would require full acquisition of Amay's Bakery and the Life Storage businesses. No residences, non-profit organizations, or agricultural/farms would be displaced by the Build Alternative. It is estimated that 40 to 60 jobs would be displaced. Given that there is available land within the Project study area and that industrial businesses are not dependent on local patronage, some relocation of the businesses may occur locally.

The Life Storage facility includes 640 individual storage units. Due to the planned acquisition of the parcel and displacement of the business, personal property within the storage units would be required to be moved elsewhere prior to acquisition. It is unknown how many of the storage unit lessees are minority, low-income, or non-minority. Per state and federal statutes, persons affected by personal property moves would be eligible for moving expenses.

The data obtained from CoStar show there are adequate replacement sites within the suitable replacement area for displacement of Life Storage and Amay's Bakery & Noodle Company, as discussed in the *Link US Relocation Impact Report* (Appendix P of this EIS). Displacement of a portion of the BNSF West Bank Yard is being coordinated directly with BNSF and Malabar Yard in the City of Vernon is a potentially suitable replacement site. The research identified multiple potential replacement sites within or in close proximity of the displacement area. A search was also conducted in the secondary replacement area, within a 5-mile radius of the displacement area. The replacement areas were found to be comparable in terms of amenities to the area where displacement is anticipated to take place. The replacement areas would offer the same types of amenities, such as public transportation and access to highways. All displacements would be subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC Section 61) and relocation agents would be responsible for assisting with the relocation process. Based on the available information, there would be no adverse effects that would be predominantly borne by a minority community, low-income community, or non-minority community.

Businesses located south of Commercial Street are destination-based businesses, including a large-scale cannabis dispensary, an adult entertainment establishment, parking facilities, and street food vendors. Access to these businesses would be maintained and no road closures along Commercial Street are proposed. Businesses in the Little Tokyo District include retail, restaurants, hotels, museums, and parking lots. As discussed in Section 4.6.1 above, there are no construction activities that would impact traffic flow or access within the Little Tokyo District and therefore, there would be no adverse impact to the businesses south of Commercial Street or within the larger portion of the Little Tokyo District west of Alameda Street that may serve a minority community, low-income community, or non-minority community or be minority-owned or be non-minority owned.

Indirect Effects

Although the construction site would be off limits to the public, physical damage to Archaeological Site CA-LAN-1575/H and unknown archaeological and paleontological resources during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources and paleontological resources. This is considered an adverse effect. Implementation of Mitigation Measures CUL-1, PAL-1, and PAL-2 would minimize adverse indirect effects of the Build Alternative on archaeological and paleontological resources by requiring mitigation plans with accompanying WEAP training that to reduce the occurrence of looting or vandalism by construction personnel.

The Build Alternative could induce growth from additional transportation infrastructure and enhanced access. Depending on the location, new development projects could cause physical destruction of known or unknown archaeological historic properties. Growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate may also result in adaptive reuse, infrastructure improvements, and other projects that would incrementally change the character or diminish the integrity of the setting related to historic properties. The context and intensity of effects would vary based on the location of proposed developments. New development and other projects would be subject to CEQA and NEPA reviews, as applicable, in addition to local regulations. However, even if mitigation measures were to be developed as a result of these environmental reviews, an adverse effect to cultural resources could still occur because cultural resources are non-renewable.

These indirect impacts would be experienced by the community living and working within the community analysis study area, including both low-income and minority as well as non-low-income and non-minority. Therefore, no indirect adverse effects associated with the Build Alternative would be predominantly borne by a minority community, low-income community, or non-minority community.

TOPIC 4.0-B	Result in an adverse effect that will be suffered by the minority community and/or low-income community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority communities.

Build Alternative

Direct Effects – Construction

As previously indicated, noise and cultural and paleontological resources would continue to have adverse effects after the implementation of mitigation measures and are carried forward for additional analysis.

Noise and Vibration

Noise from construction activities after mitigation measures are implemented would still temporarily exceed noise standards and affect sensitive receptors nearest to the Project footprint for the Build Alternative. Sensitive receptors (in areas containing both minority and/or low-income communities and non-minority and/or non-low-income communities) in the community analysis study area closest to the construction area would be subject to similar levels of daytime and nighttime noise levels.

Noise and vibration impacts would be localized to areas adjacent to the construction footprint. For those minority and/or low-income communities affected by construction of the Build Alternative, the impact would not be uniform across the entire community analysis study area, but rather would impact the William Mead Homes and Care First Village communities, which are located adjacent to the Project footprint. The Mozaic Apartments, a non-minority and/or non-low-income

community, would also experience construction impacts at a similar severity and intensity as the William Mead Homes and Care First Village communities (77 units within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit and 82 units not within minority and/or low-income areas communities would be subject to noise that exceeds the City's 75 dBA limit). In this context, adverse effects on minority and/or low-income communities after mitigation would not be appreciably more severe or greater in magnitude than adverse effects on non-minority and/or non-low-income communities; and vice-versa for non-minority communities.

Cultural and Paleontological Resources

As described in the *Link US Finding of Effect Report* (Appendix M of this EIS), there would be adverse effects related to the following resources under the Build Alternative:

- **Los Angeles Union Passenger Terminal.** As discussed above, the Build Alternative and design options considered would destroy or substantially alter some of the character-defining features that represent the interface of passengers between the station and tracks. Additionally, Rail Yard Canopy Design Option 1 would be of non-historic dimensions and materials and Rail Yard Canopy Design Option 2 would result in additional adverse effects by diminishing LAUS's integrity of design, setting, feeling, and association. As previously indicated, after Mitigation Measures CUL-1 and CUL-2 are implemented, adverse effects would remain that would be experienced by the traveling public and community living and working within the community analysis study area, which include both minority and/or low-income communities and non-minority and/or non-low-income communities. Input from minority and/or low-income communities indicated the desire to maintain LAUS as a site for public events and cultural offerings. Mitigation Measure CUL-1 provides for protections to minimize impacts to cultural resources, including the requirement that designs are consistent with the context of the historic features and provides for public outreach and consultation early in the design process. LAUS would continue to be available for public and cultural events. The approximately 110,000 passengers that travel through LAUS on a daily basis and the residents of the Mozaic Apartments (non-minority and/or non-low-income community) would experience the impacts to LAUS about as frequently as the minority and/or low-income communities within the community analysis study area. Therefore, adverse effects on minority and/or low-income communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority and/or non-low-income communities; or vice-versa for non-minority communities.
- **Vignes Street Undercrossing.** The Build Alternative would include demolition of the existing Vignes Street Undercrossing (which is eligible for listing in the NRHP under Criterion A) and replacement with a new bridge. As previously indicated, Mitigation Measure CUL-2 (BETP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by requiring design plans for the Vignes Street undercrossing to be compatible with the historic character of LAUS and providing for consultation with SHPO, City of Los Angeles OHR, and the City of Los

Angeles Cultural Heritage Commission during early design. Adverse effects remain that would be experienced equally by both the minority and/or low-income communities and non-minority and/or non-low-income communities living and working within the community analysis study area and those that travel along Vignes Street. Therefore, adverse effects on minority and/or low-income communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority or non-low-income communities; or vice-versa for non-minority communities.

- **North Main Street Bridge.** The Build Alternative has the potential to cause an adverse effect on the North Main Street Bridge, which has been determined eligible for listing on the NRHP. 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. As discussed previously, implementation of Mitigation Measure CUL-2 (BETP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) requires that design plans for work on the character-defining features of North Main Street Bridge be developed in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties and require feedback on early designs by consulting parties to progress the design. There are no minority and/or low-income communities that front the North Main Street Bridge that would have increased exposure to changes to the resource. Adverse effects to the North Main Street Bridge would be experienced equally by the traveling public and communities living and working within the community analysis study area, including both minority and/or low-income communities and non-minority and/or non-low-income communities. Therefore, adverse effects on minority and/or low-income communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority and/or non-low-income communities; or vice-versa for non-minority communities.

- **Archaeological Site P-19-001575 (CA-LAN-1575/H).** The Build Alternative would result in the disturbance, displacement, or damage to archaeological remains present in Archaeological Site P-19-001575 (CA-LAN-1575/H), which has been determined eligible for listing in the NRHP under Criterion D. As previously mentioned, Implementation of Mitigation Measure CUL-1 (ATP, described in Section 3.12, Cultural and Paleontological Resources, of this EIS) is proposed to minimize adverse effects by preparing an ATP that includes a site-specific sensitivity model to guide work, outlines processes for testing, evaluation and data recovery of known features and deposits, identifies protocols for accidental discoveries, prepares an outreach plan for this site, and plans for ownership and curation of data. In addition, Mitigation Measure CUL-1 requires training for construction personnel to protect cultural resources. Due to the subsurface nature of the site, potential effects to Archaeological Site P-19-001575 (CA-LAN-1575/H) after implementation of Mitigation Measure CUL-1 would be experienced by the community living and working within the community analysis study area, including both minority and/or low-income communities as well as non-minority and/or non-low-income communities. Input from minority and/or low-income communities indicated the desire to avoid disruption to cultural remains in Chinatown and the neighborhood north of Cesar Chavez Avenue. If cultural remains are discovered, Mitigation Measure CUL-1 provides for an outreach plan

for input on unanticipated discoveries and data curation. The outreach plan would include targeted outreach to communities for which discoveries may bear important cultural significance. Therefore, adverse effects on minority and/or low-income communities related to Archaeological Site P-19-001575 (CA-LAN-1575/H) may be appreciably greater in magnitude than adverse effects on non-minority and/or non-low-income communities but would be reduced through the implementation of Mitigation Measure CUL-1. Adverse effects on non-minority communities would not be appreciably grater in magnitude than adverse effects on minority communities.

- **Paleontological Resources.** Construction of the Build Alternative could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Ground-disturbing construction activities for all phases of work in shallow layers (i.e., fill or recent alluvium) would not affect paleontological resources. As previously mentioned, deeper excavations beneath artificial fill or recent alluvium for components such as proposed bridge structures (run-through tracks structure, Cesar Chavez and Vignes Street Undercrossing, etc.), the concourse, and modifications to existing roads and highways have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. This is considered an adverse effect. Implementation of Mitigation Measures PAL-1 through PAL-3 would minimize adverse effects of the Build Alternative on paleontological resources. Mitigation Measure PAL-1 requires the development and implementation of a PMP including site-specific impact mitigation recommendations and specific procedures for construction monitoring and fossil discovery; Mitigation Measure PAL-2 requires provisions that require preparation and implementation of a WEAP training; and Mitigation Measure PAL-3 requires arrangements for curation of significant fossils recovered during construction. With the implementation of Mitigation Measures PAL-1 through PAL-3, a direct adverse effect could still occur during construction because paleontological resources are non-renewable. Potential adverse effects to paleontological resources would be experienced equally by the traveling public and communities living and working within the community analysis study area, including both minority and/or low-income communities and non-minority and/or non-low-income communities. Therefore, adverse effects on minority and/or low-income communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority and/or non-low-income communities; or vice-versa for non-minority communities.

Displacements

As discussed previously, a food processing plant, storage facility, and a portion of BNSF's West Bank Yard would be displaced. Research indicates that there is an adequate supply of replacement sites within or in close proximity of the displacement area or within a 5-mile radius of the displacement area. The replacement areas were found to be comparable in terms of amenities to the area where displacement is anticipated to take place.

As discussed in the *Link US Relocation Impact Report*, the nature of the competitive industrial and commercial markets in Downtown Los Angeles may make it difficult for displaced businesses to secure replacement sites within Downtown Los Angeles if the businesses are not able to afford subsequent rent increases. Special advisory services would be available through the relocation process. All displacements would be subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC Section 61) and Metro's Relocation Assistance Program. Businesses would work with relocation agents to assist with the relocation process. For these reasons, business displacements would not result in disproportionate adverse effects on low-income communities, minority communities, or non-minority communities within the community analysis study area.

Direct Effects – Operations

Similar to the evaluation of construction impacts, operational impacts relative to land use and planning; transportation, visual quality and aesthetics; air quality and global climate change; noise and vibration; floodplains, hydrology, and water quality; geology, soils, and seismicity; hazardous waste and materials; public utilities and energy; and cultural and paleontological resources would not remain adverse upon implementation of mitigation measures outlined in Table 4-5. Considering the beneficial effects discussed in Section 4.6.2 and that there are no unmitigated adverse effects related to operation, there is no potential for adverse effects that are appreciably more severe or greater in magnitude on minority and/or low-income communities than the effects on non-minority and/or non-low-income communities. Based on these considerations, the Build Alternative would not result in disproportionate or adverse effects on minority and/or low-income communities; or vice-versa for non-minority communities.

Indirect Effects

Although the Build Alternative could induce growth from additional transportation infrastructure and enhanced access, the intensity and severity of any potential effects would depend on the market, location, scale, and nature of proposed developed relative to minority and/or low-income communities. New development would be required to be implemented in accordance with adopted plans and urban planning goals for the downtown area of the City of Los Angeles and the region. Growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate may also result in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Any new development that may require land use conversions would be subject to local government regulations and the applicable environmental review and entitlement process, as well as any applicable affordable housing requirements. Even if mitigation measures were to be developed as a result of these environmental reviews, indirect adverse effects to paleontological resources could still occur because paleontological resources are non-renewable. These indirect effects would not be adverse and appreciably more severe or greater in magnitude than effects on non-minority and/or non-low-income communities in the same area.

4.6.2 Offsetting Mitigation Measures

This section considers benefits of the project that may offset the adverse effects discussed in Section 4.6.1, Topics Evaluated. This summary of offsetting benefits is based on a review of the impact analysis in all relevant Chapter 3 sections.

Assessment of Beneficial Effects

The Build Alternative is anticipated to result improved operational efficiency, capacity, flexibility, and connectivity for trains using LAUS, which would provide a wide range of beneficial impacts on the community as a whole and to transit users especially. A summary of the beneficial impacts to minority communities, low-income communities, and non-minority communities follows:

- Improved regional connectivity with one-seat rides to key destinations in Southern California.
- Reduced train idling times resulting in shorter wait times and emissions reductions per train, improving the air quality within the Project study area.
- Creation of future retail and transit-serving amenities.
- Improved pedestrian access to the train platforms and capacity for passengers connecting to various rail/transit services at LAUS with enhanced accessibility for passengers with disabilities.
- Improved pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit.
- Increased tax revenues generated, along with higher employment and labor income; specifically:
    - Increased annual local government tax revenues by $4.0 million (in 2019 dollars) under operations of the Build Alternative.
    - Creation of more than 23,000 job-years in Los Angeles County during the construction phase for the Build Alternative with job opportunities for low-income and minority communities.
    - Creation of up to 146 new FTE positions (including 96 retail jobs) at the concourse in the opening year with job opportunities for low-income and minority communities.
    - Creation of an additional 25 FTE positions associated with expanded Metrolink and Amtrak services and the introduction of CHSRA service after the opening year (Appendix O of this EIS) with job opportunities for low-income and minority communities.
- Indirect contribution to cumulative benefits for the region, including a reduction of GHG emissions and VMT in the region.
- Remediation of hazardous materials sites within the Project study area.

These benefits would be realized by both minority and/or low-income communities and non-minority and/or non-low-income communities.

The community that resides within the socioeconomic planning area is 23,898 and the community within the community analysis study area is 31,971 (U.S. Census Bureau 2021). LAUS is Southern California's primary transportation hub, connecting multiple counties with a combined population exceeding 20 million people. Approximately 110,000 passengers use LAUS each weekday to travel to work or transfer to other rail or bus modes to access job and job-related opportunities throughout the region (Metro 2023). The Build Alternative would improve access to all transportation services at LAUS, which would have more efficient operations and service. This would benefit minority communities, low-income communities, and non-minority communities. With the Build Alternative, passengers would have access to HSR service, as well as enhanced Metro, Metrolink, and Amtrak service. Mode choice to access employment, as well as the opportunity to obtain a job closer to the place of residence, is largely influenced by the socioeconomic characteristics of a given community. Individuals who depend on transit for their travel would benefit the most from the Build Alternative, in particular, workers from lower-income and minority communities who do not own or have access to a private vehicle to meet their travel needs. Those living closest to LAUS would directly benefit most from increased rail transit availability and convenience, improved passenger throughput and amenities, improved access to connecting transit, and the ability to access new job markets as a result of proposed infrastructure. Outreach conducted with minority and/or low-income communities indicated a desire for transit connections, job opportunities, and reduction of noise at William Mead Homes.

Based a review of Table 2 of CARB's *Draft Funding Guidelines* (CARB 2018), the Build Alternative is consistent with the following guiding principles for California Climate Investments and are summarized here to support the assessment of beneficial effects:

- Facilitate GHG emission reductions.
- Target investments in and benefiting priority communities, with a focus on maximizing disadvantaged community benefits.
- Foster job creation and job training, wherever possible.
- Avoid potential substantial burdens to disadvantaged communities and low-income communities.

In addition, the Build Alternative includes certain infrastructure elements consistent with Metro's *Connect US Action Plan*, which is intended to encourage people to walk and bicycle between LAUS, 1st Street/Central Street Station, and the surrounding neighborhoods. The Build Alternative would support Metro's objectives of improving basic pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit and supports its goal of prioritizing projects that would benefit communities identified as EFC communities under Metro's Equity Platform. Specifically, the Build Alternative does not preclude active transportation improvements on Center Street, and includes other improvements on Commercial Street, Cesar Chavez Avenue and Vignes Street to enhance multimodal transportation opportunities.

Further, the Build Alternative would contribute to meeting the air pollution and GHG emission reduction targets in Southern California.

Implementation of the Build Alternative would also facilitate Metro's implementation of Measure M: The Los Angeles County Traffic Improvement Plan. Measure M raises money (through a ½ cent sales tax) to ease traffic congestion; expand rail and rapid transit system; repave local streets, potholes, and synchronize signals; make public transportation more accessible, convenient, and affordable for seniors, students, and the disabled; earthquake-retrofit bridges; and create jobs, reduce pollution, and generate local economic benefits. The benefits provided by Metro through Measure M would be realized by both minority and/or low-income communities and non-minority and/or non-low-income communities; however, Metro's Equity Platform includes a project prioritization element based on EFC communities and needs.

Offsetting Mitigation Measures in Response to Community Input

Although the Draft EIS/SEIR does not identify disproportionate or adverse impacts to a minority and/or low-income community related to any of the identified adverse effects (cultural and paleontological resources and temporary construction noise), Metro sought input from minority and/or low-income communities as part of the Draft EIS/SEIR public review process to understand community concerns about the Project and its potential effects. Public notification and outreach included, but was not limited to William Mead Homes, Care First Village, Little Tokyo, and First 5 LA. Input provided by the Little Tokyo community, First 5 LA, and residents of William Mead Homes was evaluated and determined to have been previously addressed by design features, construction phasing, and mitigation measures. For example, Quiet Zone infrastructure would be constructed at North Main Street near William Mead Homes, noise walls would be constructed at William Mead Homes and Care First Village, and construction haul routes would not travel adjacent to First 5 LA or through the Little Tokyo District. As a result of coordination with HACLA and based on comments received after the 45-day public comment period, Mitigation Measure NV-1, Construct Sound Walls, was revised to include additional detail about the timing and future maintenance of the sound wall at William Mead Homes. At the request of HACLA, Metro also adopted a proposed Offsetting Mitigation Measure (OMM) to complement existing construction mitigation measures to further limit impacts and be sensitive to community feedback related to William Mead Homes, a minority and/or low-income community with immediate proximity to construction. OMMs are separate from the direct mitigation measures in the Final EIS and separate from improvements required by local, state, or federal mandates.

OMM AQ-4, Construction Air Quality Monitoring at William Mead Homes provides an opportunity to limit construction-related air quality effects to public health and provides additional environmental controls to offset potential localized construction-related air quality effects. OMM AQ-4 will complement AQ-1, Fugitive Dust Control, AQ-2, U.S. EPA Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment, and AQ-3, Adaptive Air Quality Management Plan.

Prior to the start of construction, Metro will develop a construction air quality monitoring plan specific to William Mead Homes in coordination with HACLA, South Coast Air Quality

Management District (SCAQMD), and the US Environmental Protection Agency (USEPA). This construction air quality monitoring plan will identify locations along the fence line and within the William Mead Homes property for stationary air quality monitoring to be set up during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The construction air quality monitoring plan will identify the monitoring methodology, inspection procedures, threshold levels for alerts, compliance measures in the event of an alert, and reporting requirements. Compliance measures to be implemented by the construction contractor may include, but are not limited to, additional watering or use of dust suppressants, limiting vehicle speed to 5 mph on unpaved surfaces, covering open-bodied trucks, and installing wheel washing stations or rumble plates. The construction air quality monitoring plan will also provide contact information for a construction representative to be identified for inquiries by residents of the William Mead Homes community and guidance for community notifications.

Metro will be responsible for operating and maintaining the air quality monitoring equipment during construction. Metro will have a dust control supervisor on-site during construction to ensure the construction air quality monitoring plan is being followed and that the air quality monitoring equipment remains operational during the phases of construction for the adjacent sound wall construction, throat track reconstruction, and elevated rail yard. The dust control supervisor will maintain a daily log of the construction activity by location, verify the air monitoring measurements, and coordinate back to Metro for validation of the data before release to the public.

OMM AQ-4 consists of monitoring during construction and does not include infrastructure development or construction, therefore, it would not result in physical impacts on the environment.

4.7 Mitigation Measures

Under NEPA, federal agencies must identify potentially adverse effects and identify measures to avoid, minimize, or mitigate those effects. Mitigation measures are developed for adverse effects that cannot be avoided or minimized through modification of proposed build alternative design. As identified in Table 4-5, mitigation measures related to noise, air quality, water quality, and hazardous materials are proposed to avoid and minimize potential health impacts. Metro would implement the mitigation measures listed below and described in Section 3.2 through 3.15 of this EIS during construction and operation of the Build alternative to reduce potential effects. No additional mitigation to address disproportionate and adverse effects on minority and/or low-income communities is necessary.

- Implementation of the following mitigation measures would reduce adverse effects associated with land use compatibility:
    - Mitigation Measure TR-1: Prepare a Construction Traffic Management Plan (TMP).
    - Mitigation Measure AQ-1: Fugitive Dust Control.
    - Mitigation Measure AQ-2: U.S. EPA Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment.

- Mitigation Measure AQ-3: Adaptive Air Quality Mitigation Plan.
- Offsetting Mitigation Measure AQ-4: Construction Air Quality Monitoring at William Mead Homes
- Mitigation Measure AES-1: Aesthetic Treatments.
- Mitigation Measure AES-2: Minimize Nighttime Work and Screen Direct Lighting (during construction).
- Mitigation Measure AES-3: Screen Direct Lighting and Glare (from permanent lighting and canopies).
- Mitigation Measure NV-1: Construct Sound Wall (at William Mead Homes and Care First Village).
- Mitigation Measure NV-2: Employ Noise- and Vibration-Reducing Measures during Construction.
- Mitigation Measure NV-3: Prepare a Community Notification Plan for Project Construction.

- Implementation of the following mitigation measure would reduce adverse effects on public services associated with emergency response times:
  - Mitigation Measure TR-1: Prepare a Construction TMP.
- Implementation of the following mitigation measure would reduce adverse effects related to soils and seismicity:
  - Mitigation Measure GEO-1: Prepare Final Geotechnical Report.
- Implementation of the following mitigation measure would reduce adverse effects associated with conflicts with existing plans:
  - Mitigation Measure LU-1: Enhance Neighborhood Connectivity.
  - Mitigation Measure TR-3: Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street).
- Implementation of the following mitigation measures would reduce adverse effects associated with human health and environmental conditions within minority and/or low-income communities and non-minority and/or non-low-income communities during construction:
  - Mitigation Measure HWQ-1: Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP).
  - Mitigation Measure HWQ-2: Final Water Quality Best Management Practice (BMP) Selection (Caltrans ROW).
  - Mitigation Measure HWQ-3: Final Water Quality BMP Selection (Railroad Right-of-Way [ROW]).

- Mitigation Measure HWQ-4: Final Water Quality BMP Selection (City of Los Angeles).
- Mitigation Measure HWQ-5: Comply with Local Dewatering Requirements.
- Mitigation Measure HWQ-6: Comply with Local Dewatering Requirements for Contaminated Sites.
- Mitigation Measure HWQ-7: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses.
- Mitigation Measure HAZ-1: Prepare a Construction Hazardous Materials Management Plan.
- Mitigation Measure HAZ-2: Prepare a Project-wide Phase II Environmental Site Assessment (ESA; based on completed Phase I ESA).
- Mitigation Measure HAZ-3: Prepare a General Construction Soil Management Plan.
- Mitigation Measure HAZ-4: Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP).
- Mitigation Measure HAZ-5: Land Use Covenant (LUC) Sites and Coordination with the Department of Toxic Substances Control (DTSC).
- Mitigation Measure HAZ-6: Halt Construction Work if Potentially Hazardous Materials/ Abandoned Oil Wells are Encountered.
- Mitigation Measure HAZ-7: Compliance with the City of Los Angeles Building Code Methane Regulation.
- Mitigation Measure HAZ-8: Pre-Demolition Investigation.

- Implementation of the following mitigation measures would mitigate adverse effects on cultural and paleontological resources; however, adverse effects on LAUS, the Vignes Street Undercrossing, the North Main Street Bridge, Archaeological Site P-19-001575 (CA-LAN-1575/H), and paleontological resources would remain unavoidable after implementation of the Build Alternative:
  - Mitigation Measure CUL-1: Archaeological Treatment Plan (ATP).
  - Mitigation Measure CUL-2: Built Environment Treatment Plan (BETP).
  - Mitigation Measure PAL-1: Paleontological Mitigation Plan (PMP).
  - Mitigation Measure PAL-2: Paleontological WEAP Training (WEAP).
  - Mitigation Measure PAL-3: Curation.

4.8 Conclusion

As previously indicated, the determination of whether the effects of the Build Alternative are disproportionate and adverse depends on whether 1) the effects of the Build Alternative would be borne predominantly by a minority community, low-income community, or non-minority community; 2) the effects of the Build Alternative would be appreciably more severe or greater in

magnitude on minority and/or low-income communities than the effects on non-minority and/or non-low-income communities; or 3) the effects of the Build Alternative would be appreciably more severe or greater in magnitude on non-minority communities than the effects on minority and/or low-income communities.

The determination considers the totality of the locations of adverse effects relative to minority and/or low-income communities, the severity of the adverse effect and the success of proposed mitigation in reducing the effect, whether mitigation measures reduce effects equally for both minority and/or low-income communities and non-minority and/or non-low-income communities, and the benefits that these communities would receive.

As described above, the Build Alternative would result in adverse effects related on the following topics related to communities and neighborhoods:

- Land use and planning;
- Transportation;
- Visual quality and aesthetics;
- Air quality and global climate change;
- Noise and vibration;
- Floodplains, hydrology, and water quality;
- Geology, soils, and seismicity;
- Hazards and hazardous materials;
- Public utilities and energy; and
- Cultural and paleontological resources.

Mitigation measures, BMPs, and compliance with federal, state, and local requirements would minimize these adverse effects. However, effects related to cultural and paleontological resources and temporary construction noise would remain adverse under NEPA even after implementation of the applicable mitigation measures.

The socioeconomic planning area contains both minority and/or low-income communities and non-minority and/or non-low-income communities. Sensitive receptors at William Mead Homes (minority and/or low-income community), Care First Village (low-income community), and the Mozaic Apartments (non-minority and/or non-low-income community) would be subject to similar levels of noise construction impacts. Because temporary construction noise impacts would affect both minority and/or low-income communities and non-minority and/or non-low-income communities at similar intensity and frequency (77 units within minority and/or non-low-income communities would be subject to noise that exceeds the City's 75 dBA limit and 82 units not within minority and/or low-income communities would be subject to noise that exceeds the City's 75 dBA limit), temporary impacts associated with construction noise effects would not be disproportionate

and significantly adverse nor would they be predominantly borne by a minority and/or low-income community; or vice-versa for any non-minority community.

Project-related benefits throughout operations would also be equally distributed throughout both minority and/or low-income communities and non-minority and/or non-low-income communities. As discussed in the evaluation in Chapter 3.0 of this EIS, effects of the Build Alternative would not be appreciably more severe or greater in magnitude on minority and/or low-income communities than the effects on non-minority and/or non-low-income communities because the community analysis study area and communities immediately adjacent to the Project footprint contains both minority and/or low-income communities and non-minority and/or non-low-income communities. OMM AQ-4 was introduced to complement existing mitigation measures and further limit or compensate potential localized impacts. Based on these considerations, the Build Alternative would not result in disproportionate and adverse effects on any minority community, low-income community, or non-minority community.

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5.0 Section 4(f) Evaluation

This chapter provides the analysis to support the CHSRA's determinations to comply with the provisions of 49 USC Section 303 (hereinafter referred to as Section 4(f)) and the LWCF Act of 1965 (hereinafter referred to as Section 6(f)).

Additional information related to this Section 4(f) evaluation on historic properties is provided in Section 3.12, Cultural and Paleontological Resources of this EIS and the *Link US Finding of Effect* Report (Appendix M of this EIS).

Upon implementation of the Build Alternative, the Section 4(f) determinations are as follows:

- The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge);
- The Build Alternative would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant); and,
- No constructive use would occur.
- There are no Section 6(f) properties in the Project study area.

The No Action Alternative would not include the construction of the Build Alternative; and, therefore, would have no effect on any Section 4(f) or 6(f) resources.

5.1 Introduction

This chapter provides an evaluation of potential use of Section 4(f) properties that may result upon implementation of the Build Alternative and the No Action Alternative. As stated in Chapter 1, Purpose and Need, for the purposes of this EIS, CHSRA is the federal lead agency with NEPA responsibilities for the Project, pursuant to the requirements of the NEPA Assignment MOU. Therefore, acting as the federal lead agency, CHSRA would be responsible for issuing the Record of Decision and coordinating any related environmental reviews, in partnership with Metro, including any coordination activities in compliance with Section 4(f) requirements.

To demonstrate the CHSRA's compliance with Section 4(f), this chapter:

- Describes the statutory requirements associated with Section 4(f);
- Identifies the properties protected by Section 4(f) in the Project study area;
- Provides a determination whether the Build Alternative would result in the Section 4(f) use of those properties; and
- Where applicable,
    - Identifies feasible and prudent alternatives, to the extent any exist, that would avoid or minimize use of the properties;

- Identifies measures to minimize harm; or
- Provides a least-harm analysis for build alternative that would result in the use of Section 4(f) properties.

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project have been carried out by the State of California pursuant to 23 USC § 327 and the NEPA Assignment MOU dated July 23, 2019 (renewed July 22, 2024) between the FRA and the State of California. This Section 4(f) evaluation was released for comment by the CHSRA pursuant to 23 USC 327 and the terms of NEPA Assignment MOU (FRA and State of California 2019, renewed in 2024) assigning the CHSRA responsibility for compliance with NEPA and other federal environmental laws, including Section 4(f) (49 USC 303) and related USDOT orders and guidance.[1]

5.1.1 Regulatory Framework

Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the USDOT Act of 1966, codified in federal law at 49 USC 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Implementing regulations followed by FRA for Section 4(f) can be found at 23 CFR 774.

CHSRA may not approve the use of a Section 4(f) property, a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic property of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site), unless:

- It determines the project has a *de minimis* impact consistent with the requirements of 49 USC Section 303(d), or
- Determines that:
  - There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of the property; and,
  - The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use.

[1] CHSRA cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. CHSRA will provide FRA written notice of any proposed constructive use determination, and FRA will have 30 calendar days to review and provide comment. If FRA objects to the constructive use determination, CHSRA will not proceed with the determination.

An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. In determining whether an alternative is prudent, CHSRA may consider if the alternative will result in any of the following:

- The alternative does not meet the Project's stated purpose and need;
- The alternative would entail unacceptable safety or operational problems;
- After reasonable mitigation, the alternative would result in severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts on minority or low-income populations; or severe impacts on environmental resources protected under other federal statutes;
- The alternative would require additional construction, maintenance, or operational costs of an extraordinary magnitude;
- The alternative would pose other unique problems or unusual factors; or
- The project would entail multiple factors that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

If CHSRA determines there is both the use of a Section 4(f) property and that there is no prudent and feasible alternative to the use of a Section 4(f) resource, CHSRA must ensure the project includes all possible planning (including coordination with and concurrence of the officials with jurisdiction [OWJ] over the property) to minimize harm to the property, which includes all reasonable measures to minimize harm or mitigate impacts (49 USC 303(c)(2)). OWJ are defined in 23 CFR 774.17.

After making a Section 4(f) determination and identifying the reasonable measures to minimize harm, if there is more than one alternative that results in the use of a Section 4(f) property, CHSRA must also compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute. The least overall harm may be determined by balancing the following factors:

- The ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property);
- The relative severity of the remaining harm (after mitigation) to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- The relative significance of each Section 4(f) property;
- The views of the OWJ over each Section 4(f) property;
- The degree to which each alternative meets the project Purpose and Need;
- After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f); or
- Substantial differences in costs among the Project alternatives.

Section 4(f) Applicability

Properties qualify for protection under Section 4(f) as follows:

- Parks and recreational areas of national, state, or local significance that are publicly owned at the time of the use; open to the public; designated as a park or recreational area by a federal, state, or local agency; the property's primary purpose is as a park or recreational area; and it is considered significant by the OWJ over the property. Publicly owned land that is designated for a future planned public park or recreation area also qualifies for protection under Section 4(f).
- A wildlife or waterfowl refuge that is publicly owned at the time the use occurs; has been officially designated as a wildlife and/or waterfowl refuge area by a federal, state, or local agency; its primary purpose is consistent with the property's primary function and how it is intended to be managed and is considered significant by the OWJ over the property. A refuge is not necessarily required to be open to be protected as a Section 4(f) resource.
- A historic site eligible, or listed in, the NRHP may be protected under Section 4(f). For a property to be eligible for the NRHP, it must meet at least one of the four NRHP criteria (i.e., Criteria A–D) described below and the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. If the archeological resource is determined to be important chiefly because of what can be learned by data recovery and has minimal value for preservation in place, and the SHPO agrees, it will be covered under the exception at 23 CFR 774.13(b) and will not require Section 4(f) approval.

Although the statutory requirements of Section 106 and Section 4(f) are similar, Section 106 assesses the Project's effects on a historic property while Section 4(f) assesses if there is a use or occupancy of the historic property. Therefore, if a project results in an adverse effect on a historic property under Section 106, this does not automatically mean that there is a Section 4(f) use of that historic property.

Section 4(f) Use Definition

Under Section 4(f), there are three main types of uses:

- **Permanent Use** – The property is permanently incorporated into a proposed transportation facility. This might occur as a result of a partial or full fee acquisition, permanent easement, or temporary easement that exceeds established regulatory limits for temporary occupancy as defined below.
- **Temporary Occupancy** – A temporary occupancy of a Section 4(f) resource occurs when the resource, in whole or in part, is required for construction-related activities. A temporary occupancy would be considered a use if the property is not permanently incorporated into a transportation facility, but the activity is considered an impact in terms of the preservationist purposes of the Section 4(f) statute. A temporary occupancy of property

does not constitute a use of a Section 4(f) resource where the conditions in 23 CFR 774.13(d) are satisfied:

- Duration must be temporary (i.e., less than the time needed for construction of the project), and there should be no change in ownership of the land;
- Scope of the work must be minor (i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal);
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- The land being used must be fully restored (i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project); and
- There must be documented agreement of the OWJ over the Section 4(f) resource regarding the above conditions.

- **Constructive Use** – A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate the property of a protected resource, but the proximity impacts of a project adjacent to, or nearby, a Section 4(f) property result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). Therefore, the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. However, a project's proximity to a Section 4(f) property is not in itself an impact that results in constructive use.

Pursuant to 23 USC 327 and under the NEPA Assignment MOU between the FRA and the State of California, CHSRA can make the determination that there is no constructive use. CHSRA cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. Pursuant to the provisions of the MOU, CHSRA provides FRA written notice of any proposed constructive use determination, and FRA has 30 calendar days to review and provide comment. If FRA objects to the constructive use determination, CHSRA will not proceed with the determination.

- **De minimis Impact** - A *de minimis* impact determination involves the use of a Section 4(f) property that is generally minor in nature. According to 49 USC 303(d), the following criteria must be met to reach a *de minimis* impact determination:
  - For parks, recreation areas, wildlife, and waterfowl refuges, a *de minimis* impact determination may be made if CHSRA concludes the transportation project will not adversely affect the activities, features, and attributes qualifying the property for protection under Section 4(f) after mitigation. In addition, to make a *de minimis* impact determination:

- The OWJ over the property must be informed regarding the intent to make a *de minimis* impact determination, after which, public notice and opportunity for public review and comment must be provided.
- After consideration of comments, if the OWJ over the property concur in writing that the project will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, then CHSRA may finalize the finding of a *de minimis* impact.

- For an historic site, a *de minimis* impact determination may be made if, in accordance with the Section 106 process of the NHPA, CHSRA determines that the transportation program or project will have no effect or no adverse effect on the historic property; CHSRA has received written concurrence from the OWJ over the property (e.g., SHPO); and has taken into account the views of consulting parties to the Section 106 process as required by 36 CFR Part 800.

Coordination

On February 27, 2024, a notification of CHSRA's intent to make a greater than de minimis determination under Section 4(f) was provided to the SHPO as the OWJ over historic properties for the purposes of Section 4(f). On March 25, 2024, two comments were received from the SHPO requesting: 1) further explanation of the Section 4(f) determinations relative to the timing and content of the Section 106 Programmatic Agreement (PA); and 2) a copy of the full Section 4(f) evaluation. On April 23, 2024, a response letter was provided to SHPO with details on the status of the PA and Archaeological and Historic Built Environment Treatment Plans (ATP/BETP) that outlines the commitments and work to be undertaken to resolve adverse effects, and specifically how the PA and BETP informs the minimization and mitigation for the historic properties. A copy of the Section 4(f) evaluation from the Draft EIS was also provided as an attachment to the response letter. No additional comments from the SHPO were received in response to the letter and attachment provided on April 23, 2024.

The Section 4(f) evaluation was also made available for a 45-day duration during the Draft EIS/SEIR public comment period. Copies of the Draft EIS/SEIR (including Chapter 5, Section 4(f) evaluation) were provided to the SHPO and the U.S. Department of Interior (USDOI) National Park Service. During the 45-day public comment period, no additional comments were provided by the SHPO; however, the USDOI provided a letter dated July 25, 2024 which provided concurrence that there are no feasible and prudent alternatives to the proposed use of the three properties, and that the USDOI has no objection to the Section 4(f) approval.

In a letter dated September 30, 2025 and submitted October 1, 2025 (via email), CHSRA informed USDOI that a Build Alternative Design Option would be considered in the Link US Project Final EIS. On November 17, 2025, CHSRA updated the requested timeline associated with the letter, provided the updated 4(f) evaluation, and requested any questions or additional comments no later than December 1, 2025, consistent with the coordination requirements outlined in 23 CFR

774.5 (a). On December 1, 2025, USDOI responded with no objection to Section (4) approval and noted USDOI does not have any further comments or questions regarding the Final EIS.

See Section 5.4 below for a detailed discussion of all coordination activities with the SHPO on the resolution of adverse effects on historic properties.

Section 106 of the National Historic Preservation Act of 1966

As described in Section 3.12, Cultural and Paleontological Resources, Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the ACHP a reasonable opportunity to comment (36 CFR 800.1). A historic property is defined in the NHPA as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the NRHP, including artifacts, records, and material remains related to such a property or resource" (54 USC 300308).

For a property to be eligible for the NRHP, it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following NRHP criteria:

- **Criterion A** – Properties that are associated with events that have made a significant contribution to the broad patterns of our history.
- **Criterion B** – Properties that are associated with the lives of persons significant in our past.
- **Criterion C** – Properties that embody 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.
- **Criterion D** – Properties that have yielded, or may be likely to yield, information important to prehistory or history.

The Section 106 process is the method by which a historic property's significance is determined through consultation with SHPO and other Section 106 consulting parties. Section 106 requires consideration of a project's effects on historic properties, while Section 4(f) considers whether there is a use or occupancy of historic properties.

5.2 Purpose and Need

Metro, as the owner of LAUS, is proposing the infrastructure improvements associated with the Project to address existing capacity constraints at LAUS.

5.2.1 Project Purpose

The purpose of the Project is to increase the regional and intercity rail service capacity of LAUS and to improve schedule reliability at LAUS through the implementation of a run through tracks

configuration and elimination of the current stub end tracks configuration while preserving current levels of freight rail operations, accommodating the planned HSR system in Southern California, increasing the passenger/pedestrian capacity and enhancing the safety of LAUS through the implementation of a new passenger concourse, meeting the multi modal transportation demands at LAUS.

5.2.2 Project Need

The need for the Project is generated by the forecasted increase in regional population and employment; implementation of federal, state, and RTPs that provide for increased operational frequency for regional and intercity trains; and introduction of the planned HSR system in Southern California. Localized operational, safety, and accessibility upgrades in, and around, LAUS will be required to meet existing demand and future growth.

5.3 Project Alternatives

A detailed description of the Alternatives and Design Options considered is provided in Chapter 2, Alternatives and Design Options Considered, of this EIS. The alternatives considered are summarized below.

5.3.1 No Action Alternative

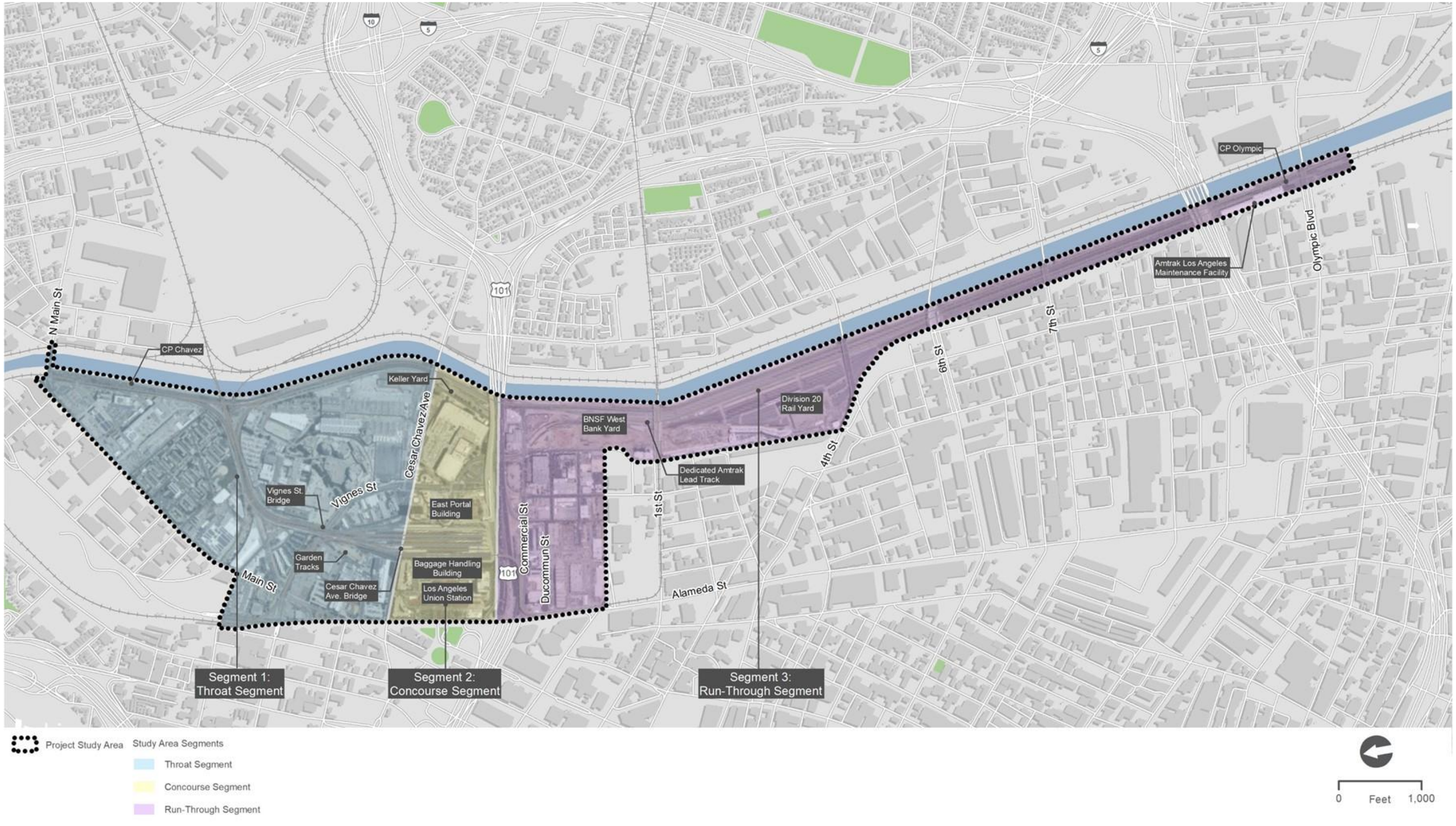
Under the No Action Alternative, no physical improvements to LAUS would be completed to enhance the capacity of rail operations or the passenger concourse.

5.3.2 Build Alternative

Key components associated with the Build Alternative are summarized north to south below. Figure 5-1 depicts the three segments of the Project study area.

- **Segment 1: Throat Segment (lead tracks and throat track reconstruction)** – The Build Alternative 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 Build Alternative 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 trains (Metrolink/Amtrak) and new operations for HSR trains within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of CP Chavez on the west bank of the Los Angeles River, the Build Alternative also includes safety improvements at the Main Street public at-grade railroad crossing (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.

Figure 5-1. Project Study Area



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- **Segment 2: Concourse Segment (elevated rail yard and expanded passageway)** – The Build Alternative includes an elevated rail yard and expansion of the existing 28-foot-wide pedestrian passageway in Segment 2 of the Project study area (concourse segment). The rail yard would be elevated approximately 15 feet. New passenger platforms would be constructed on the elevated rail yard with associated VCEs (stairs, escalators, and elevators) to enhance safety elements and improve ADA accessibility. Platform 1, serving the Gold Line, would be lengthened and elevated to optimize east to west passenger circulation. The pedestrian passageway would be expanded at the current grade to a 140-foot width to accommodate a substantial increase in passenger capacity with new functionally modern passenger amenities while providing points of safety to meet applicable CBC and NFPA 130 Standard for Fixed Guideway Transit Systems. The expanded passageway and associated concourse improvements would facilitate enhanced passenger circulation and provide space for ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, and office/commercial uses while creating an opportunity for an outdoor, community-oriented space with new plazas east and west of the elevated rail yard (East and West Plazas). Amtrak ticketing and baggage check-in services would be enhanced, and new carousels would be constructed in a centralized location under the rail yard. A canopy would be constructed over the West Plaza up to 70 feet in height, and two design options are considered for canopies that would extend over the rail yard.
- **Segment 3: Run-Through Segment (10 run-through tracks)** – The Build Alternative includes 10 new run-through tracks (without a loop track) south of LAUS in Segment 3 of the Project study area (run-through segment). The Build Alternative includes common rail infrastructure on the west bank of the Los Angeles River (vicinity of First Street Bridge) to support run-through tracks for both regional/intercity rail trains and HSR trains. At the BNSF West Bank Yard, dedicated lead tracks for Amtrak trains and BNSF trains, in combination with implementation of common rail infrastructure would result in permanent loss of freight rail storage track capacity at the north end of BNSF West Bank Yard (5,500 track feet).

The Build Alternative would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); improvements to railroad signal, PTC, and communication systems; 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 the Amtrak lead track; addition of access roadways to the railroad ROW; land acquisitions; addition of utilities; utility relocations, replacements, and abandonments; and addition of drainage facilities/water quality improvements.

The Build Alternative includes two design options for canopies over the elevated platforms and rail yard. Each of the rail yard canopy design options would be constructed in conjunction with other concourse-related improvements.

5.3.3 Rail Yard Canopy Design Option 1

Rail Yard Canopy Design Option 1 would include replacement of the existing historic butterfly canopies with individual canopies above each platform. New individual canopies would be constructed in the full build-out condition in conjunction with other concourse-related improvements, would extend up to 25 feet above each platform, and be similar in form to the existing butterfly canopies but sized to fit the widened and lengthened platforms.

5.3.4 Rail Yard Canopy Design Option 2

Rail Yard Canopy Design Option 2 would include replacement of the existing historic butterfly with a large, single grand canopy structure above all the rail yard platforms. The grand canopy would be constructed in the full build-out condition in conjunction with other concourse-related improvements and would extend up to 75 feet above the elevated rail yard platforms.

5.4 Coordination with Officials with Jurisdiction

Before this Section 4(f) evaluation was approved, coordination with OWJ over the resources was documented because CHSRA applied the exception for archeological sites of minimal value for preservation in place under paragraph 774.13(b) and applied the exception for temporary occupancies under paragraph 774.13(d).

For the purposes of Section 4(f), the SHPO is the OWJ because the Build Alternative would only result in the use of historic sites that qualify under Section 4(f) (see Section 5.5). Therefore, the historic preservation review process mandated by Section 106 of the NHPA covers the Section 4(f) coordination process, and the SHPO serves as the OWJ. As such, on August 9, 2016, a letter was sent to SHPO initiating formal Project consultation for historic properties and to request concurrence that the APE had been adequately defined (*Link US Finding of Effect Report,* Appendix M of this EIS).

In a meeting held on November 1, 2016, FRA and Metro consulted with SHPO to discuss the Project, give an update on the Section 106 consultation to date, present information on the cultural resources identified within the preliminary APE, and made preliminary recommendations on the Project's level of effect. As documented in Section 3.12, Cultural and Paleontological Resources of the EIS, SHPO concurred with FRA's APE delineation, sufficiency of identification efforts, and evaluation of historic properties identified on September 27, 2018.

The *Link US Supplemental Cultural Resources Report* (Appendix M of this EIS) was subsequently prepared to update the APE and to further identify and evaluate historic properties within the APE. On February 10, 2021, SHPO concurred with the updated APE and the historic property determinations of eligibility. The *Link US Second Supplemental Cultural Resources Report* was also prepared with concurrence from the SHPO on June 28, 2023. SHPO concurred with the *Link US Finding of Effect Report* (Appendix M of this EIS) on November 20, 2023. CHSRA notified the ACHP that the Build Alternative would have an adverse effect on historic properties, and the ACHP has declined to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii). Please

refer to Chapter 8, Public and Agency and Outreach, of the EIS for details regarding Section 106 consultation and agency coordination.

As part of the Section 106 process, CHSRA has consulted with the following consulting parties:

- Caltrans;
- City of Los Angeles OHR;
- City of Vernon;
- HACLA;
- Los Angeles Conservancy;
- Train Riders Association of California (TRAC);
- Los Angeles River and Business Association;
- LAUS Historical Society;
- Gabrieleño Band of Mission Indians – Kizh Nation; and,
- Gabrielino/Tongva Nation.

Additionally, as documented in the *Link US Supplemental Cultural Resources Report* (Metro 2020), in February of 2020 consulting parties were provided with information on the location of the Malabar Yard railroad improvements and related cultural resource identification efforts, including an assessment of the archaeological sensitivity where Malabar Yard railroad improvements would occur within the City of Vernon. The following responses were received:

- The Gabrieleño Band of Mission Indians – Kizh Nation agreed with the results of the cultural resource identification efforts and sensitivity assessment and provided contextual information about Native American settlements in the vicinity of Vernon.
- The Gabrielino/Tongva Nation stated it had no information about cultural resources in the City of Vernon.
- As a cooperating agency, Caltrans reviewed drafts of the *Link US Supplemental Cultural Resource Report* and noted it had no comments since the Malabar Yard railroad improvements are outside of Caltrans ROW.

Section 106 consultation and SHPO correspondence is further detailed in Appendix M of this EIS, and a summary table of comments specific to the impact analysis received on pertinent Section 4(f) resources is provided below. These comments were largely received through email and written correspondence during consulting party meetings held by CHSRA and Metro in June and July of 2023. Table 5-1 also indicates how the comments were addressed in the *Link US Finding of Effect Report* and the proposed measures to avoid, minimize, and mitigate adverse effects on historic properties.

Table 5-1. Comments Relating to Potential Effects on Historic Properties

Agency/Party Meeting Date	Comments	Responses
LAUS		
LAUS Historical Society July 10, 2023	LAUSHS raised concerns about design elements of new LAUS project components. Comments about LAUS include the following: • LAUSHS noted that they would like for the new Cesar Chavez Avenue Undercrossing to replicate the historical Roman arch design, and that the associated new project components (including the butterfly shed canopies, benches, and streetlamps on the platforms) should also replicate the original historical design of the old station. • At least one end of the original 1939 butterfly shed canopies and one supporting pillar should be preserved or repurposed, perhaps for a museum. • LAUSHS stated that if the Mission Tower had access to it, it would make a great museum space for the preservation of materials about LAUS. They noted that LAUSHS is in possession of sequential photographs of the construction of LAUS and an aerial photograph was taken every day of construction of the property. • LAUSHS stated its support of California HSR and for this project. Mr. Tom Savio stated that it is important to have up-to-date rail transportation that the public can rely on.	Proposed measures to resolve adverse effects were revised to include provisions for consulting party review of portions of the project design involving the alteration or restoration of character-defining portions of LAUS, including the Cesar Chavez Avenue Undercrossing, and the development of an educational display for LAUS.
Los Angeles Conservancy June 29, 2023	The Los Angeles Conservancy stated that they concurred with CHSRA's finding of adverse effect and was concerned with how avoidance planning was incorporated into the process.	A detailed discussion of design variations considered to avoid, reduce, or minimize effects on historic properties was included in Chapter 6 of the FOE.
City of Los Angeles OHR June 29, 2023	The OHR has coordinated and participated in meetings between Metro and the City's CHC. The CHC raised the following concerns: • The necessity of building the West Plaza at LAUS and whether a parallel tunnel to the existing historic pedestrian passageway could be constructed to retain the historic feel. • If rail yard Platform 7 does not have run-through capability, why does it need to be raised? • Can the eastern façade of the Cesar Chavez Avenue Undercrossing be protected in place while still raising the rail yard? Can the outer envelope/extent of the rail yard raise be reduced/brought in to avoid changes to the existing bridge façade?	A detailed discussion of design variations considered to avoid, reduce, or minimize effects on historic properties, including option for retaining the existing passenger passageway and preserving the Cesar Chavez Avenue Undercrossing, was included in Chapter 6 of the FOE. Proposed measures to resolve adverse effects were revised to include opportunities for consulting parties to provide input on the design of the pedestrian passageway and Cesar Chavez Avenue Undercrossing and provisions for assessing the feasibility of

Table 5-1. Comments Relating to Potential Effects on Historic Properties

Agency/Party Meeting Date	Comments	Responses
		rehabilitation options as design progresses.
Caltrans, District 7 June 12, 2023	In a letter dated June 12, 2023, Caltrans commented on the LAUS south retaining wall as a character-defining feature of LAUS that abuts US-101/Caltrans ROW. Caltrans concurred with the finding that the physical destruction of this feature would meet the criteria of adverse effect since the south retaining wall would be raised along with the rail yard and these modifications would be visible from US-101. Caltrans also agreed with the inclusion of the south retraining wall in the review for required HABS documentation as mitigation.	No response required.
Cesar Chavez Avenue Viaduct over the Los Angeles River		
Train Riders Association of California April 26, 2023	TRAC stated via email that it believes the Cesar Chavez Avenue Viaduct over the Los Angeles River to be historically significant and that the costs to replace it would be exorbitant. TRAC did not have comments on the content of the *Link US Draft Finding of Effect* document but did want to provide comments on the feasibility of the Project.	The Project would not replace or otherwise impact the Cesar Chavez Avenue Viaduct.
Vignes Street Undercrossing		
LAUS Historical Society July 10, 2023	The circa 1939 single-span, concrete “Roman Arch” bridge that supports railroad tracks over Vignes Street is architecturally and historically significant, and the new bridge design should attempt to replace in-kind.	Proposed measures to resolve adverse effects were revised to include opportunities for consulting parties to provide input on the design of the Vignes Street Undercrossing.
William Mead Homes		
Housing Authority of the City of Los Angeles June 27, 2023	HACLA stated that William Mead homes is a property determined eligible for listing in the NRHP under Criteria A and C. Under Criterion C, its historical significance is tied to the design principles of the Garden City and Modern movements. These design principles were in response to past tenement housing with poor air circulation, dark environments, and lack of access to the outdoors. The architects designed William Mead Homes with buildings that were intentionally placed “diagonally on the compass” so that “practically every room gets sun during the day”. Since these elements are a significant part of its historical design, HACLA requested specific analysis about what shade/shadow effects the proposed sound wall would have on allowing natural sunlight onto the site. HACLA expressed concern over the vibrations from the use and expansion of the tracks due to the HSR and the	In response to this comment, a shadow analysis was conducted in support of the assessment of effects for William Mead Homes and is included in Section 5.3.2 of the FOE. Vibration impacts have been considered per FTA requirements and used to support the assessment of effects for William Mead Homes, as discussed in Section 5.3.2 of the FOE.

Table 5-1. Comments Relating to Potential Effects on Historic Properties		
Agency/Party Meeting Date	**Comments**	**Responses**
	potential negative impacts to their historic buildings and foundations.	

Notes:

CHC=Cultural Heritage Commission; HACLA=Housing Authority of the City of Los Angeles; FOE=Finding of Effect Report; HABS=Historic American Buildings Survey; HSR=high-speed rail; LAUS=Los Angeles Union Station; LAUSHS=Los Angeles Union Station Historical Society; Link US=Link Union Station; OHR=Office of Historic Resources; ROW=right-of-way; TRAC=Train Riders Association of California

Continued consultation regarding adverse effects to historic properties and the development of measures to resolve those adverse effects will take place in accordance with the Section 106 PA.

5.5 Determine Section 4(f) Applicability Analysis

To document Section 4(f) properties, historic properties within the APE; and all parks, recreational facilities, and wildlife and waterfowl refuges were inventoried within the Section 4(f) study area, which includes a 1,000-foot buffer from the Project study area. Table 5-2 references the location of the resource from the Project footprint to help identify the distance of the resource from locations where direct impacts would occur from infrastructure improvements.

5.5.1 Public Wildlife and Waterfowl Refuges of National, State, or Local Significance

There are no public wildlife and waterfowl refuges of national, state, or local significance within the Section 4(f) study area. Therefore, these types of Section 4(f) properties are not discussed in this evaluation.

5.5.2 Publicly owned Public Parks and Recreation Areas

Land use planning documents and aerial imagery were reviewed to identify publicly owned public park and recreation properties within the Section 4(f) study area that meet the criteria for protection under Section 4(f). Eight public park and recreation properties (Resource Numbers P-1 through P-8) that meet the criteria were identified. These eight properties are listed in Table 5-2 and shown on Figure 5-2.

Table 5-2. Public Park and Recreation Areas within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Resource Description	Location	Distance from Project Footprint	Official with Jurisdiction
P-1	Los Angeles Plaza Park	Central point of the Los Angeles Plaza Historic District. Historic site of the city of Los Angeles origins.	125 Paseo De La Plaza, Los Angeles, CA 90012	675 feet from Project footprint	City of Los Angeles Department of Recreation and Parks
P-2	Father Serra Park	Small landscaped area that previously showcased 1938 statue of Father Serra (now removed by City of Los Angeles)	540 N Los Angeles Street, Los Angeles, CA 90012	355 feet from Project footprint	City of Los Angeles Department of Recreation and Parks
P-3	Castelar Elementary School	Elementary School serving Pre-Kindergarten to 6th Grade in Los Angeles Unified School District	840 Yale Street, Los Angeles, CA 90012	2205 feet from Project footprint	Los Angeles Unified School District
P-4	Ann Street Elementary School	Elementary School serving Kindergarten to 5th Grade in Los Angeles Unified School District	126 E Bloom Street, Los Angeles, CA 90012	658 feet from Project footprint	Los Angeles Unified School District
P-5	Los Angeles State Historic Park	32-acre California State Park with views of downtown and creative public events	1245 N Spring Street, Los Angeles, CA 90012	974 feet from Project footprint	California Department of Parks and Recreation
P-6	Downey Recreation Center	Facility features sports fields and cultural programs and includes an auditorium, children's play area, and a stage	1772 N. Spring Street, Los Angeles, CA 90031	814 feet from Project footprint	City of Los Angeles Department of Recreation and Parks

Table 5-2. Public Park and Recreation Areas within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Resource Description	Location	Distance from Project Footprint	Official with Jurisdiction
P-7	Los Angeles River Path Project (Planned)	Forecasted opening in 2027, eight-mile shared-use bicycle and pedestrian path along the LA River between Elysian Valley and the City of Maywood, through downtown Los Angeles and the City of Vernon	Along the western bank of the Los Angeles River	Immediately adjacent to Project footprint	Los Angeles River Authority
P-8	Albion Riverside Park	Opened in 2019, 10.4-acre park featuring recycled stormwater for landscaping. Park features include children's playground, walking paths, and sports fields.	1739 Albion St, Los Angeles, CA 90031	87 feet from Project footprint	City of Los Angeles Department of Recreation and Parks

Source: City of Los Angeles Department of Parks and Recreation n.d.

William Mead Homes (Resource Number H-4), discussed further as a historic property below in Section 5.6.1) and the Hilda L. Solis Care First Village are both publicly owned properties that have private recreation areas that are only open to the residents of those facilities and not open to the general public (with posted signs to limit trespassing). They are therefore, not considered public park or recreation areas.

5.5.3 Historic Sites of National, State, or Local Significance, Whether Publicly or Privately Owned

Historic sites located in the APE, the area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties as defined by the implementing regulations of the NHPA, were identified as potential Section 4(f) properties. Based on review of the APE, 16 historic properties (H-1 through H-16) that meet the criteria were identified. The 16

built environment historic properties are listed in Table 5-3 and are shown on Figure 5-2. The SHPO is the OWJ for the historic properties.

Table 5-3. Built Environment Historic Properties within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Property Description	Location	Distance from Project Footprint
H-1	La Plaza de Los Angeles Historic District	Contains the site of the original pueblo of Los Angeles, and the center of Los Angeles' community throughout the 19th century. The buildings feature an extensive range of nineteenth and early twentieth century architectural styles, including Spanish Colonial and Mexican eras.	El Pueblo de Los Angeles Historic District/El Pueblo	675 feet from Project footprint
H-2	Los Angeles Union Passenger Terminal	Constructed from 1934 to 1939 and was designed in the Spanish Colonial Revival and Streamline Moderne styles	800 Alameda Street, Los Angeles, CA 90012	Within Project footprint – this Section 4(f) property would be subject to permanent alteration, but no ROW acquisition
H-3	United States Post Office – Los Angeles Terminal Annex	Was the central mail processing facility for Los Angeles from 1940 to 1989. The architectural style is a Mission/Spanish Colonial Revival	900 Alameda Street, Los Angeles, CA 90012	6 feet from Project footprint
H-4	William Mead Homes	A 17-acre multiple family public housing complex designed in the Modern "garden apartments" style. Period of significance was established as 1943 to 1952, based on the years of construction.	1300 Cardinal Street, Los Angeles, CA 90012	Within Project footprint, but no alteration to the property and no ROW acquisition
H-5	LADWP	A substantially scaled, multi-building yard owned and operated by the LADWP. On the property	1630 North Main Street, Los Angeles, CA 90012	Within Project footprint, but no alteration to the

Table 5-3. Built Environment Historic Properties within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Property Description	Location	Distance from Project Footprint
		are numerous shops, test labs, warehouses, repair facilities, garages, crane aisles, and offices designed in the industrial style. Period of significance was 1923 to 1965		property and no ROW acquisition
H-6	Mission Tower	Design was influenced by the Spanish Colonial Revival style. Period of significance from 1916 to 1938, based on when original construction was completed by the Atchison, Topeka and Santa Fe Railway, when it was enlarged for LAUS	1436 Alhambra Avenue, Los Angeles, CA 90012	Within Project footprint, but no alteration to the property and no ROW acquisition
H-7	Vignes Street Undercrossing	Constructed from 1933 to 1939 as part of LAUS but is just outside that property's NRHP boundary. Designed in the Streamline Moderne style with Spanish Colonial Revival influence. Its period of significance is 1933 to 1939, based on the years of construction.	Located over Vignes Street	Within Project footprint – this Section 4(f) property would be subject to permanent alteration, but no ROW acquisition
H-8	Macy Street School	Was constructed in 1915 and designed in the English Renaissance Revival style. The period of significance is 1915 to 1930 and is important for associations with the Progressive Era and Principal Nora Sterry.	900 Avila Street, Los Angeles, CA 90012	14 feet from Project footprint
H-9	Cesar Chavez Viaduct (over the Los Angeles River)	Designed in the Spanish Colonial Revival architectural style. The period of significance is 1926, the year construction was completed.	Located over the Los Angeles River	Within Project footprint, but no alteration to the property and no ROW acquisition

Table 5-3. Built Environment Historic Properties within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Property Description	Location	Distance from Project Footprint
H-10	First Street Viaduct (over the Los Angeles River)	Designed in the Neo-Classical architectural style. The period of significance is 1929, the year construction was completed.	Located over the Los Angeles River	Within Project footprint, but no alteration to the property and no ROW acquisition
H-11	Fourth Street Viaduct (over the Los Angeles River)	Designed in the Beaux Arts and Gothic Revival architectural styles. The period of significance is 1930 to 1931, the years of construction.	Located over the Los Angeles River from Mission Road on the east to Santa Fe Avenue on the west	Within Project footprint, but no alteration to the property and no ROW acquisition
H-12	Seventh Street Viaduct (over the Los Angeles River)	Designed in the Beaux-Arts style. The period of significance is 1910 to 1927, the years of construction.	Located over the Los Angeles River from approximately Myers Street on the east to Santa Fe Avenue on the west	Within Project footprint, but no alteration to the property and no ROW acquisition
H-13	Olympic Boulevard Viaduct (over the Los Angeles River)	Was constructed in 1925 as the Ninth Street Viaduct and was re-named in commemoration of the 1932 Olympic Games. The period of significance is 1925, the year construction was completed. Design features Classical style structural elements combining Doric and Corinthian orders.	Located over the Los Angeles River from Rio Vista Avenue on the east to Enterprise Street on the west	Within Project footprint, but no alteration to the property and no ROW acquisition
H-14	Denny's Restaurant	Example of a "Googie" style coffee shop designed by architect Larry A. Ray based on the Armet & Davis prototype design from 1958. The period of significance is 1965, when construction was completed.	530 Ramirez Street, Los Angeles, CA 90012	Within Project footprint, but no alteration to the property and no ROW acquisition
H-15	North Main Street Bridge	Designed in the Beaux Arts architectural style. It was one of the first open spandrel three hinge reinforced concrete arch	Located over the Los Angeles River	Within Project footprint – this Section 4(f) property would be subject to

Table 5-3. Built Environment Historic Properties within the Section 4(f) Study Area

Resource Number	Section 4(f) Property	Property Description	Location	Distance from Project Footprint
		bridges constructed in the western United States. The period of significance is 1910, the year construction was completed.		permanent alteration, but no ROW acquisition
H-16	Kelite Factory Plant No. 1	Designed as an industrial loft with Art Deco style elements. The period of significance is 1918 to 1930, the years during which Plant No. 1 was constructed. The character-defining features of Kelite Factory Plant No. 1 are its industrial use, proximity to railroad tracks, vertical orientation, symmetrical organization, smooth stucco cladding, raised parapet, Art Deco detailing, large industrial sash windows, and canopied main entrance.	1250 Main Street, Los Angeles, CA 90012	500 feet from Project footprint

Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
LADWP=Los Angeles Department of Water and Power; ROW=right-of-way

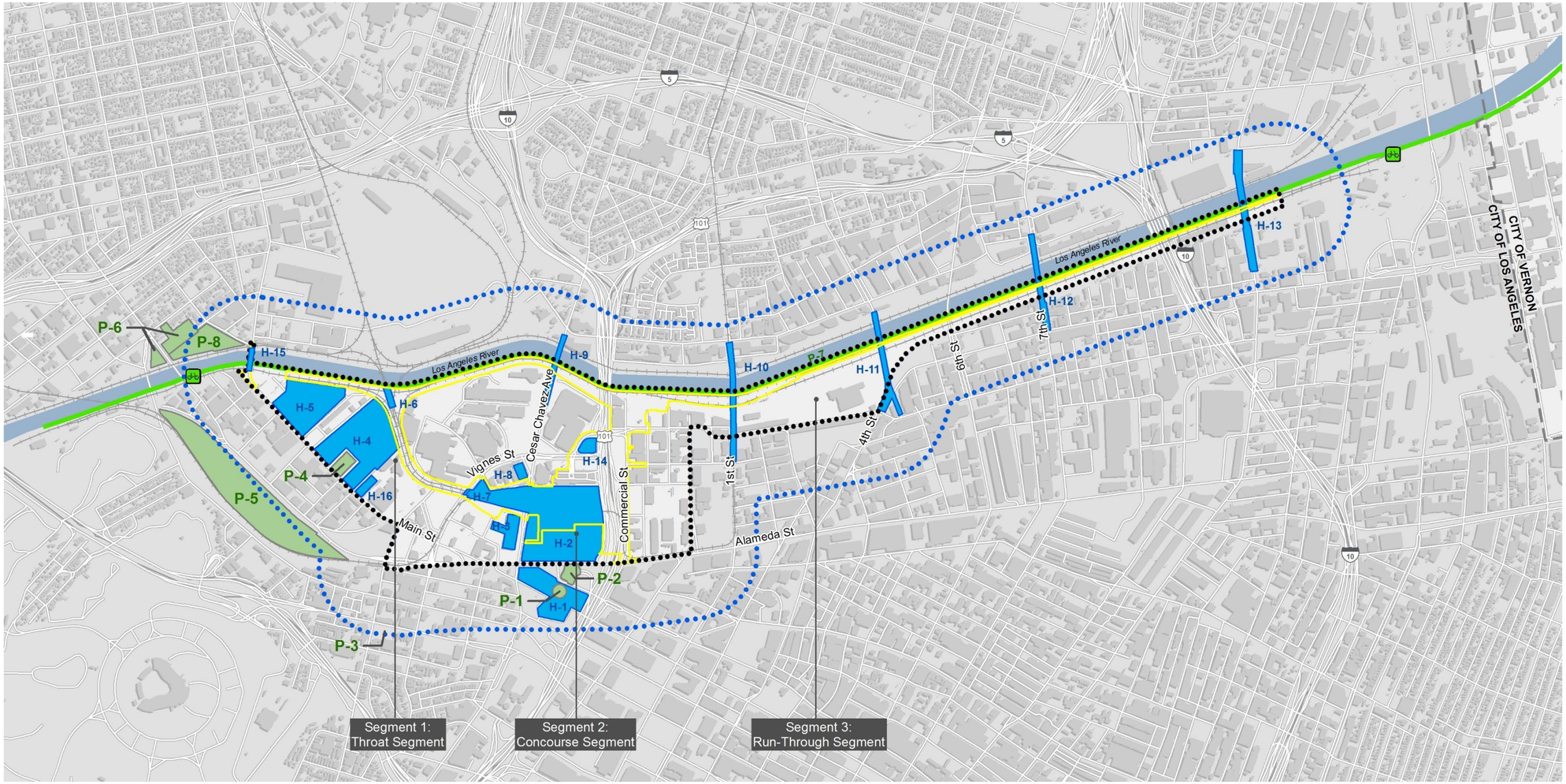
An archaeological resource that is eligible only under NRHP Criterion D, as defined above, is considered valuable primarily in terms of the data that can be recovered from it. For such resources, it is generally assumed that there is minimal value attributed to preserving such resources in place. Resources eligible under Criteria A, B, or C are generally considered to have value intrinsic to the resource's location. Therefore, in accordance with the exception found in 23 CFR 774.13(b), Section 4(f) does not apply to a site if it is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place. Archaeological Site CA-LAN-1575/H, identified within the APE and discussed in detail in Section 3.12, has been determined eligible for the NRHP under Criterion D only. The SHPO concurred with this determination in a letter dated September 27, 2018 and this determination has not changed, even with additional site features that have been discovered during nearby construction projects (see *Link US Second Supplemental Cultural Resource Report*, Attachment M of this EIS). The SHPO has also been notified that CHSRA applied the exception to this archaeological site as allowed under 23 CFR 774.13(b) and a copy of the letter is included in *Link US Finding of Effect Report*

(Appendix M of this EIS). The SHPO has not objected to this finding; therefore, Section 4(f) does not apply to the site.

Figure 5-2 depicts all public park and recreation areas, and historic properties within the Section 4(f) study area that have been evaluated for protection under Section 4(f).

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Figure 5-2. Section 4(f) Study Area and Section 4(f) Properties



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5.6 Assess Impacts and Determine Section 4(f) Use

The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). None of the temporary occupancies of, or indirect effects on, other resources in the Section 4(f) study area would constitute a use under Section 4(f).

The No Action Alternative would not include the construction of the Project and, therefore, would have no effect on any Section 4(f) or 6(f) resources.

5.6.1 No Section 4(f) Use

Public Park and Recreation Areas

Analysis of the Build Alternative suggests that it would not result in a use of any public park and recreation areas. The no-use determinations of these resources are documented in Table 5-4. No further analysis for these resources is required.

Historic Properties

Analysis for 11 of the 16 historic properties evaluated (Resource Numbers H-1, H-3, H-5, H-6, H-8, H-9, H-10, H-11, H-12, H-13, and H-16) shows that the Build Alternative would not require encroachment or alterations on a permanent or temporary basis, and Section 106 effect findings of no effect or no adverse effect have been made. Therefore, it has been determined that there would be no use of these properties under Section 4(f). The no-use determinations of these properties are further documented in Table 5-5.

Table 5-6 presents the Section 4(f) properties that result in a temporary occupancy and/or use.

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Table 5-4. Public Park and Recreation Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Project Impacts/No-Use Determination
P-1	Los Angeles Plaza Park	675 feet from Project footprint	City of Los Angeles Department of Recreation and Parks	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation or temporary use of the property. The park is located approximately 675 feet west of the Project footprint; thereby avoiding this resource. The Build Alternative would not encroach upon the boundaries of the Los Angeles Plaza Historic District, nor would it require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. The views east of the Plaza have changed dramatically over the last eight decades because of the construction of LAUS, modernization of Alameda and Los Angeles Streets, and construction of US 101, the El Monte Busway, high -rise condominium buildings, Gateway Plaza, and the Metropolitan Water District Headquarters, among other buildings. Additionally, the views from this park towards the Project are largely obscured by intervening buildings and trees, depending on the location of the viewer. While the grand canopy structure of LAUS may be visible from the Los Angeles Plaza Historic District, the change in view from this historic property would not be considered adverse because none of the characteristics that qualify the Los Angeles Plaza Historic District for the NRHP would have their integrity diminished. Access to and from the park would not be impeded during or after construction considering the park's distance from the proposed infrastructure improvements, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. No severe adverse temporary or permanent indirect impacts from noise and air quality or to visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No permanent use, temporary use, or constructive use of this resource have been identified.
P-2	Father Serra Park	355 feet from Project footprint	City of Los Angeles Department of Recreation and Parks	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation or temporary use of the property. The park is located approximately 355 feet west of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the park would not be impeded during or after construction considering the park's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. Given the

Table 5-4. Public Park and Recreation Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Project Impacts/No-Use Determination
				close proximity of the park to Alameda and the height of the main entryway building into LAUS, newly proposed infrastructure for the Build Alternative would not be visible from the park location, and the LAUS building would likely block sound as well. Additionally, no severe adverse temporary or permanent indirect impacts from noise and air quality, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-3	Castelar Elementary School	2205 feet from Project footprint	Los Angeles Unified School District	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The school is located approximately 2,205 feet northwest of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the school would not be impeded during or after construction considering the school's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. There are intervening buildings between the Project footprint and this resource that would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-4	Ann Street Elementary School	658 feet from Project footprint	Los Angeles Unified School District	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The school is located approximately 658 feet northwest of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the park would not be impeded during or after construction considering the school's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation.

Table 5-4. Public Park and Recreation Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Project Impacts/No-Use Determination
				There are intervening buildings between the project and this resource that would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-5	Los Angeles State Historic Park	974 feet from Project footprint	California Department of Parks and Recreation	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The park is located approximately 974 feet north of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the park would not be impeded during or after construction considering the park's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. There are intervening buildings between the Project footprint and this resource that would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-6	Downey Recreation Center	814 feet from Project footprint	City of Los Angeles Department of Recreation and Parks	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The recreational facility is located approximately 814 feet north of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the park would not be impeded during or after construction considering the recreational facility's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. There are intervening buildings between the Project footprint and this resource that

Table 5-4. Public Park and Recreation Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Project Impacts/No-Use Determination
				would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-7	Los Angeles River Path Project (planned)	Within Project footprint	Los Angeles River Authority	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The majority of the planned Class I bike path is just outside the Project footprint's western boundary but overlaps with the Project footprint as it crosses under the North Main Street Bridge. However, the Project improvements would avoid this resource and would not inhibit the implementation of this project. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the bike path would not be impeded during or after construction considering the recreational facility's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. There are intervening buildings between the Project footprint and this resource that would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.
P-8	Albion Riverside Park	87 feet from Project footprint	City of Los Angeles Department of Recreation and Parks	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation of or temporary use of the property. The recreational facility is located approximately 87 feet north of the Project footprint; thereby avoiding this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the park would not be impeded during or after construction considering the recreational facility's distance from the proposed infrastructure, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic

Table 5-4. Public Park and Recreation Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Project Impacts/No-Use Determination
				circulation. There are intervening buildings between the Project footprint and this resource that would block sound and views. No severe adverse temporary or permanent indirect impacts from noise and air quality, or visual resources, in terms of the preservation and use of this resource as a recreational facility, are anticipated. **Conclusion:** No direct or indirect impacts that could result in a permanent incorporation, temporary use, or constructive use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.

Notes:
HACLA=Housing Authority of the City of Los Angeles; LAUS=Los Angeles Union Station; TMP=traffic management plan

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
H-1	La Plaza de Los Angeles Historic District	675 feet from Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation or temporary use of the historic property. The historic property is located approximately 675 feet west of the Project footprint and within the APE to account for potential indirect effects, but no changes in the character or use of the historic property would result from the Project. The proposed infrastructure would avoid these resources. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. The views east of the Plaza have changed dramatically over the last eight decades because of the construction of LAUS, modernization of Alameda and Los Angeles Streets, and construction of US 101, the El Monte Busway, high -rise condominium buildings, Gateway Plaza, and the Metropolitan Water District Headquarters, among other buildings. Additionally, the views from this historic district towards the Project are largely obscured by intervening buildings and trees, depending on the location of the viewer. The buildings within the district intervene between the resource and the project and would largely block sound. Access to and from the historic district would not be impeded during or after construction considering the park's distance from the proposed infrastructure improvements, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. Given the distance of the construction activities of the Project to the location of the resources, no severe adverse temporary or permanent indirect impacts from noise, vibration and air quality or to visual resources, in terms of the preservation and use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.	
H-3	United States Post Office – Los Angeles Terminal Annex	6 feet from Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a permanent incorporation or temporary use of the historic property. The rear of the historic property is located approximately 6 feet west of the Project footprint and within the APE to account for potential indirect effects, but no changes in the character or use of the historic property would result from the Project. The proposed infrastructure would avoid this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic property would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. The new undercrossing proposed as part of the Build Alternative would be constructed in the same location as the existing bridge to support tracks that would be elevated 10 to 15 feet higher than the existing top of rail at this location, and new retaining walls built to support the elevated rail yard would reach a similar height as the bridge. The new bridge, elevated rail yard, and Rail Yard Canopy Design Option 2 (grand canopy) would be visible from the side and rear elevations of the building, but they would not be visible when a viewer stands in front of its primary elevation due to the considerable height and length of the building. Similar to the present condition, the individual canopies of Rail Yard Canopy Design Option 1 would only be visible from the rear of the Terminal Annex property but not from its front or side elevations. The elevated rail yard, new bridge, and rail yard canopy design options would be recognizable as new but generally perceived as similar in form to existing rail infrastructure and supporting rail activities	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				similar to those that define the physical context of the resource. Since construction of the Terminal Annex, the LAUS rail yard and associated infrastructure have always been part of the setting of this historic property. Moreover, the significance of the historic property is due to its architectural quality, and the character-defining features of the building are unrelated to the setting. Construction activities near the Terminal Annex property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (reinforced concrete) and the nature of the proposed construction activity. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.	
H-4	William Mead Homes	Immediately adjacent to the Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no permanent adverse physical impacts on this resource. A small portion at the rear of the historic property would accommodate a TCE utilized for access and laydown to build a proposed retaining and sound wall within the railroad ROW. There would be no change in ownership of the property for the TCE and the area would be used for a short duration (less than the time needed for overall construction of the project) and would be returned to original condition following construction. The scope of work for the area is minor and includes building a retaining and sound wall adjacent to the property in the same location of an existing fence. The magnitude of changes to the property area is minimal and there are no changes in the character defining attributes or features, nor interference with the	**No Use (Temporary Occupancy Exception Applies)**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				protected activities of the historic property and SHPO concurrence with temporary impacts resulting in a no adverse effect finding. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic property would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. The physical setting at the rear of the property, currently delimited by a metal fence, consists of railroad infrastructure. The new retaining wall would be higher than the existing fence and act as a visual screen that would shield the railroad infrastructure—including the elevated rail yard and either rail yard canopy design option—from view. The existing fence and intervening buildings slightly obscure the view of downtown Los Angeles. Due to the increased height of the proposed retaining wall, the view of downtown Los Angeles in the distance would be further obscured. Views of downtown Los Angeles have changed substantially since the property's period of significance in 1943–1952 and the character-defining features of the William Mead Homes property are unrelated to the setting. The proposed changes in the setting of the historic property would not affect the physical features of the property that contribute to its historic significance. Construction activities in the railroad ROW near the property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place approximately 60 feet from the closest building and would require a TCE at the rear of the property, there is not a potential for vibration damage during construction due to the type of the contributing buildings (reinforced masonry) and the nature of the proposed construction activity. No severe adverse temporary or permanent indirect impacts from noise and air quality or to visual	

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				resources are anticipated, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023, and CHSRA is consulting with the SHPO (see *Link US Finding of Effect Report* [Appendix M of this EIS]).	
H-5	LADWP Main Street Center	Within Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a Section 4(f) use of the historic property. A small portion of the historic property boundary is within the Project footprint and completely within the APE to account for potential indirect effects; the Build Alternative would introduce a retaining wall within the railroad ROW and immediately adjacent to the property boundary. Proposed infrastructure would not result in acquisition of any character-defining features of the historic property, including contributing buildings. The proposed improvements would avoid this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic property would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. The Build Alternative would not be visible from the property because of intervening buildings, including William Mead Homes and Terminal Annex. The LADWP Main Street Center property has a utilitarian/industrial character, and the visual elements associated with the new retaining wall supporting railroad tracks at the same general location would not result in changes to the contributing buildings on the property. Additionally, no severe adverse temporary or permanent indirect impacts from noise and air quality or to visual resources, in terms of the use of this resource or qualifying criteria as a listed or eligible historic property, are anticipated. Construction activities would be limited to	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				the railroad ROW and would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the type of the contributing buildings (reinforced concrete) and the nature of the proposed construction activity. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.	
H-6	Mission Tower	Within Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a Section 4(f) use of the historic property. A portion of the historic property is within the Project footprint and completely within the APE to account for potential indirect effects, but no changes in the character or use of the historic property would result from the Build Alternative. Proposed construction associated with the Build Alternative includes elevating the existing tracks that would lead to the elevated rail yard. No physical changes are proposed for Mission Tower. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic property would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. Elevated track would be visible from the historic property, but the newly elevated rail yard would not be visible from Mission Tower. Notwithstanding the visibility of the newly elevated track from Mission Tower, no adverse effect is anticipated because views of or from Mission Tower are not character defining and no	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				physical changes are proposed for Mission Tower that would adversely affect the characteristics that qualify Mission Tower for listing in the NRHP. No severe adverse temporary or permanent indirect impacts from noise and air quality or to visual resources, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated. Construction activities near the Mission Tower property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (engineered concrete) and the nature of the proposed construction activity. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.	
H-8	Macy Street School	14 feet from Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this historic property, as it is located 14 feet east of the Project footprint. No changes in the character or use of the historic property would result from the Build Alternative. The proposed infrastructure would avoid this resource. Therefore, there is no direct Section 4(f) use of the historic property. **Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic property, which currently houses a bail bonds business, would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. Primary views toward Macy Street School are from the north, from Cesar	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				Chavez Avenue. While the setting to the west of Macy Street School would change with new infrastructure elements proposed as part of the Build Alternative, the setting does not contribute to historic significance under Criterion A for ethnic heritage or Criterion B for association with Principal Sterry. Therefore, CHSRA has determined a finding of no adverse effect on Macy Street School. Additionally, no severe adverse temporary or permanent indirect impacts from noise and air quality or to visual resources, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated. Construction activities near the Macy Street School property would involve trucks, bulldozers, excavators, and other construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Although construction would take place near the historic property, there is not a potential for vibration damage during construction due to the building type (reinforced masonry) and the nature of the proposed construction activity. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would occur, and no further analysis is required.	
H-9	Cesar Chavez Viaduct (over the Los Angeles River)	Within Project footprint	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on these resources that would result in a Section 4(f) use of the historic properties. These historic properties are partially within the Project footprint and completely within the APE to account for potential indirect effects, but no changes in the character or use of these historic property would result from the Build Alternative. These road bridges were originally constructed for vehicles to pass over the main line railroad tracks and the Los Angeles River. The bridges would not be altered or damaged in any way, and the	**No Use**
H-10	First Street Viaduct (over the Los Angeles River)	Within Project footprint	SHPO[a]		

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
H-11	Fourth Street Viaduct (over the Los Angeles River)	Within Project footprint	SHPO[a]	proposed track work along the main line would pass through the same piers of each bridge at the same elevation as the existing tracks. The tracks, ties, and ballast constitute "physical features within the setting" of the bridges, but 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. The proposed infrastructure would avoid these resources.	
H-12	Seventh Street Viaduct (over the Los Angeles River)	Within Project footprint	SHPO[a]		
H-13	Olympic Boulevard Viaduct (over the Los Angeles River)	Within Project footprint	SHPO[a]	**Indirect:** The Build Alternative would not result in proximity impacts that would rise to a level of constructive use. Access to and from the historic properties would not be impeded during or after construction, and a TMP per Mitigation Measure TR-1 would be implemented during construction to minimize impacts on traffic circulation. Additionally, no severe adverse temporary or permanent indirect impacts from noise and air quality or to visual resources, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated. Trucks, bulldozers, excavators, and other construction equipment would be used for work in railroad ROW, but there would be no high-intensity activities, including pile driving, at these locations. Although construction would take place in the general vicinity of these historic properties, there is not a potential for vibration damage during construction due to the intervening distance, the structure type of the historic properties (reinforced concrete), and the nature of the proposed activities. **Conclusion:** SHPO concurred with a finding of "No Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of these historic properties have been identified. Therefore, no use of these resources would occur from the Build Alternative, and no further analysis is required.	

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
H-14	Denny's Restaurant	Within Project footprint	SHPO[a]	**Direct**: The parking lot of the historic property would be used as a construction staging area resulting in temporary occupancy. The actual historic Denny's building would be avoided and there are no changes proposed in the character defining attributes. The Build Alternative would have no permanent adverse physical impacts on this resource. There would be no change in ownership of the property where the TCE is required, the parking lot would only be used for a short duration (less than the time needed for construction of the project), and the property would be returned to original condition following construction. The magnitude of changes to the property are temporary and minimal with no changes proposed to the character defining attributes or features, nor interference with the protected activities of the historic property and SHPO concurrence with temporary impacts resulting in a no adverse effect finding. **Indirect**: The Build Alternative would not result in proximity impacts that would rise to a constructive use. While customer use of the parking lot would be limited, access to and from the restaurant would not be impeded during or after construction. Views from Denny's toward LAUS would be largely obscured by the Gateway Plaza tower, and there would be no demonstrable visual effect; views toward the new viaduct would be blocked by the El Monte Busway and US-101. Moreover, the significance of the historic property is due to its architectural quality, and the character-defining features of the building are unrelated to the setting. The proposed changes in the setting of the historic property would not affect the physical features of the property that contribute to its historic significance. Construction activities would be limited to the rail yard, the US-101 ROW, and the Commercial Street corridor. Construction of the run-through track viaduct would include high-intensity activities such as pile driving. However, given the considerable distance of the historic property from the nearest construction area (about 400	**No Use (Temporary Occupancy Exception Applies)**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				feet), there is not a potential for vibration damage during construction. No severe adverse temporary or permanent indirect impacts from noise and air quality, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]).	
H-16	Kelite Factory Plant No. 1	Ca. 500 feet north of Project footprint and fully within the APE	SHPO[a]	**Direct:** The Build Alternative would have no direct impacts on this resource that would result in a Section 4(f) use of the historic property. The historic property is located on a parcel that is adjacent to the project footprint, however the resource boundary is located approximately 500 feet east of the Project footprint and completely within the APE to account for potential indirect effects. There are no changes in the character or use of the historic property that would result from the Build Alternative. The proposed improvements would avoid this resource. **Indirect:** The Build Alternative would not result in proximity impacts that would cause a constructive use. Access to and from the historic property would not be impeded during or after construction. The concourse-related improvements, elevated rail yard, and canopies would be the closest Project components to this historic property, although they would not be visible from the property because of intervening buildings (Kelite Factory Plants No. 2 and 3) located on the same parcel. Given the distance of the building from the railroad ROW (about 500 feet to the rear of the structure) no severe adverse temporary or permanent indirect impacts from noise and air quality, in terms of the use of this resource or qualifying criteria as a listed or eligible historic resource, are anticipated that would affect the architectural features and the setting. Construction activities would be limited to the railroad ROW and would involve trucks, bulldozers, excavators, and other	**No Use**

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				construction equipment, but high-intensity activities, including pile driving, would not take place at this location. Given the considerable distance of the property from the nearest construction area (about 500 feet), there is no demonstrable visual affect and no potential for vibration damage during construction. **Conclusion:** SHPO concurred with a finding of "No Adverse Effect" on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]), and no direct or indirect impacts that could result in a Section 4(f) use of this resource have been identified. Therefore, no use of this resource would be required to implement the Build Alternative, and no further analysis is required.	
Confidential (Not Depicted on Map)	Historic and Prehistoric Archaeological Site CA-LAN-1575/H NRHP-Eligible for Criterion D only	At least partially within Project footprint(s) and fully within APE	SHPO[a]	As described in 23 CFR 774.13 Exception (b), exceptions to the requirement of Section 4(f) approval for archeological sites that are on or eligible for the NRHP may occur when: 1) The Administration (for the purposes of this EIS, CHSRA) concludes that the archeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place. This exception applies both to situations where data recovery is undertaken and where the Administration (for the purposes of this EIS, CHSRA) decides, with agreement of the official(s) with jurisdiction, not to recover the resource; and 2) The official(s) with jurisdiction over the Section 4(f) property have been consulted and have not objected to the Administration (for the purposes of this EIS, CHSRA) finding in paragraph (b)(1) of this section. **Conclusion:** SHPO has concurred with a finding of "Adverse Effect" for Archaeological Site CA-LAN-1575/H on November 20, 2023 (see *Link US Finding of Effect Report* [Appendix M of this EIS]). The site has been determined eligible for the NRHP under	No Section 4(f) approval required per 23 CFR 774.13(b) Exception

Table 5-5. Historic Properties within the Section 4(f) Study Area: No-Use Determination

Resource Number	Section 4(f) Property	Distance from Project Footprint	Official with Jurisdiction	Comments	Section 4(f) Use Determination
				Criterion D only. It is important primarily for the information it contains with minimal value for preservation in place, therefore, it is anticipated that the resource meets the 23 CFR 774.13 Exception (b). Coordination with the OWJ, the SHPO, is still ongoing. Data recovery excavations will be conducted at this site during construction. Therefore, no further analysis is required under Section 4(f).	

Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
[a] ***ACHP declined to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii).***
APE=area of potential effects; CFR=Code of Federal Regulations; LAUS=Los Angeles Union Station; NRHP= National Register of Historic Places; SHPO=State Historic Preservation Officer

Table 5-6. Summary of Section 4(f) Use Determinations of Historic Properties

Resource Number	Historic Property	Use[a]	Determination
H-2	Los Angeles Union Passenger Terminal	The Build Alternative would result in temporary impacts due to the proposed use of an access road at Los Angeles Union Passenger Terminal for construction access. Additionally, the Build Alternative would result in permanent alteration of a portion of this property to accommodate the 140-foot-wide expanded passageway and improvements to the tracks, platforms, and certain adjoining structures. Characteristics that contribute to the NRHP eligibility of the property that would be removed, replaced, or substantially altered under the Build Alternative include the passenger passageway, platforms ramps and railings, butterfly shed canopies, terminal tower, car supply/maintenance shop, southern retaining wall, and Cesar Chavez Avenue undercrossing. **Conclusion:** The Section 106 effect finding for this property is an Adverse Effect; thereby resulting in a Permanent Use under Section 4(f). The SHPO has concurred with the Section 106 effect finding and CHSRA has made a corresponding Section 4(f) determination.	Permanent Use
H-7	Vignes Street Undercrossing	This historic property is a railway bridge that crosses over Vignes Street and is directly related to the LAUS Passenger Terminal. To raise the rail yard by up 15 feet, the Vignes Street Undercrossing would be permanently altered as part of the Build Alternative and the resource would be demolished and replaced. **Conclusion:** The Section 106 effect finding for this property is an Adverse Effect; thereby resulting in a Permanent Use under Section 4(f). The SHPO has concurred with the Section 106 effect finding and CHSRA has made a corresponding Section 4(f) determination.	Permanent Use
H-15	North Main Street Bridge	A portion of this bridge would be permanently altered as part of the Build Alternative with the addition of safety improvements to make this bridge quiet zone ready. Portions of the characteristics that qualify the resource for the NRHP would be altered including wingwalls.	Permanent Use

Table 5-6. Summary of Section 4(f) Use Determinations of Historic Properties

Resource Number	Historic Property	Use[a]	Determination
		Conclusion: The Section 106 effect finding for this property is an Adverse Effect; thereby resulting in a Permanent Use under Section 4(f). The SHPO has concurred with the Section 106 effect finding and CHSRA has made a corresponding Section 4(f) determination.	

Source: Link US Finding of Effect Report (Appendix M of this EIS)
Notes:
NRHP=National Register of Historic Places

5.6.2 Historic Properties – Use

Los Angeles Union Passenger Terminal

Description of Los Angeles Union Passenger Terminal

LAUS (Primary Number 19-171159) is located at 800 Alameda Street in Los Angeles and is between Segments 1 and 2 of the Project study area and within the Project APE (Resource Number H-2 on Figure 5-2). LAUS was listed in the NRHP on November 13, 1980, at the local level of significance under Criterion C for embodying distinctive characteristics and has a period of significance of 1938. The property has also been designated as a LAHCM on August 2, 1972. Therefore, CHSRA has concluded the property is protected under the requirements of Section 4(f) as a historic property.

Contributing elements for LAUS include the tile roof, arcades, stucco wall cladding, clock tower, arched main entrance, decorated beamed ceilings, tile floors, patios, wrought iron railings, wainscot, platforms, butterfly sheds, the Cesar Chavez concrete undercrossing, the terminal tower, the southern retaining wall, car supply repair workshop (current maintenance building), pedestrian passageway, and ramps and rails. Non-contributing elements include the Pacific Electric freight service yard and the addition to the Railway Express Agency offices. LAUS is owned by Metro and is the main railway station in Los Angeles.

Use Assessment of Los Angeles Union Passenger Terminal

Under the Build Alternative, the existing Tracks 3 through 14 and Platforms 2 through 7 would be incrementally demolished and replaced at approximately 15 feet above their existing elevation. The elevated rail yard is required to accommodate a run-through tracks structure over US-101 to meet Caltrans vertical clearance requirements over both the existing El Monte Busway and US-101. During construction, the LAUS driveway will be temporarily utilized for construction access. Architecturally important buildings and spaces that comprise the west side of the station, including the passenger waiting area, former ticketing room, Harvey House restaurant, and courtyards would not be used for construction access and avoided by proposed infrastructure. However, the following character defining features that contribute to LAUS as a historic property listed in the NRHP would be destroyed or substantially altered by the Build Alternative, as described below (Figure 5-3 through Figure 5-13):

- **Pedestrian Passageway (Tunnel)** – The concourse-related improvements would include a 140-foot-wide expansion of the passageway, which would require the demolition of the narrow, historic pedestrian passageway to provide additional passenger travel-path convenience and options with new elevators, escalators, and stairs to achieve compliance with CBC egress and ADA standards. The concourse-related improvements associated with the expanded passageway would be of modern design and materials and would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS.

- **Passenger Ramps, Platform Railings, Solid Balustrades** – The passenger ramps, platform railings, and solid balustrades would be demolished to make space for the construction of the expanded passageway and other concourse-related improvements. The concourse-related improvements would include multiple egress routes, with public areas integrated into the design that also achieve compliance with CBC egress and ADA standards.
- **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 to approximately 15 feet above their present elevation.
- **Butterfly Shed Canopies** – The butterfly shed canopies would be demolished because they would be too narrow and not long enough to perform their historic function on the widened and lengthened platforms. Additionally, reuse of the butterfly shed canopies does not allow for the design requirements of accommodating multiple operating agencies, each with their own unique needs and train types and each with different design criteria for proximity and clearance of canopies. Newly proposed rail yard canopy design options would be of modern design and materials and would not convey the historic feeling and association currently experienced by visitors or travelers to LAUS within the rail yard.
- **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. However, the south retaining wall would be modified to raise the wall along with the yard (likely with the run-through tracks structure crossing through the upper limits of the new wall elevation). These modifications would be visible from US-101.
- **Terminal Tower** – The Terminal Tower is currently located in an area where the rail yard is proposed to be raised by 15 feet with a new 10-foot-wide access road proposed between the structure and the adjacent tracks. The Terminal Tower is proposed to be moved and either re-oriented at-grade or raised vertically, depending on the final Project design. The Terminal Tower would only be demolished if moving the resource is not feasible.
- **Car Supply Building** – The car supply building, which is built directly into the rail yard retaining wall, would be demolished as a result of elevating the rail yard (15 feet higher) and the need for a 10-foot-wide access road in the same location.
- **Cesar Chavez Avenue Undercrossing** – The Cesar Chavez Avenue Undercrossing would be demolished and replaced with a new bridge to accommodate the elevated rail yard and support tracks (15 feet higher) and the egress requirements from the platforms.

Figure 5-3. Overview of Los Angeles Union Station (View to the East)



Figure 5-4. Pedestrian Passageway (View East)



Figure 5-5. North Ramps, View of Ramp Portal up to Tracks 11A and 12A



Figure 5-6. North Ramps, View of Portal Down from Tracks 11a and 12a



Figure 5-7. North Ramp up to Platforms and Railing



Figure 5-8. Platform and Butterfly Shed Canopies (View North)



Figure 5-9. Butterfly Shed Canopies, End View (View North)



Figure 5-10. South Retaining Wall (View North)



Figure 5-11. Cesar Chavez Avenue Undercrossing (View East)



Figure 5-12. Car Supply Building Built into the Avila Street Retaining Wall (View Northwest)



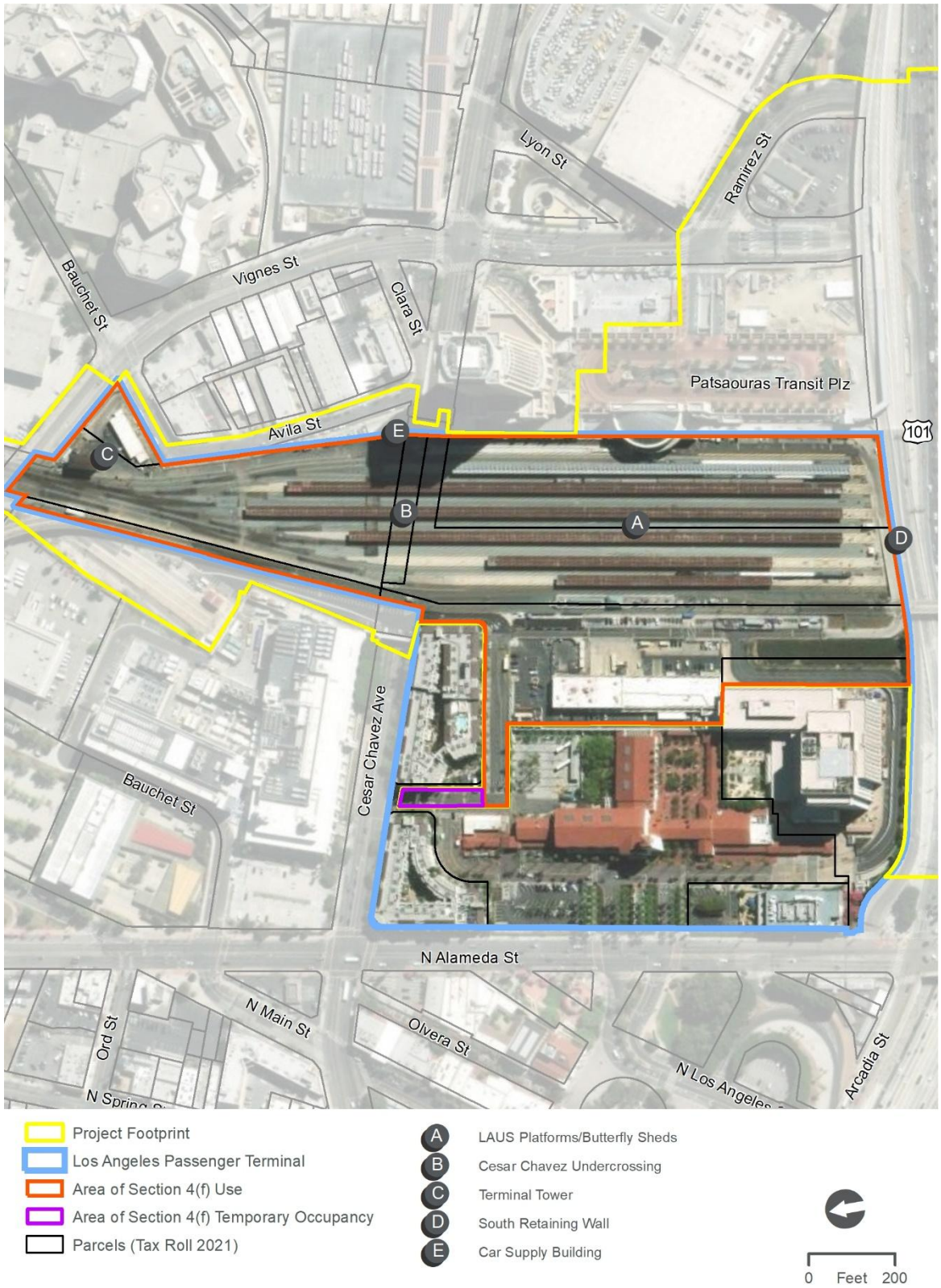
Figure 5-13. Terminal Tower (View Northwest)



LAUS would retain enough integrity to remain listed in the NRHP 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/courtyards. However, the substantial alterations proposed with the Build Alternative are considered an adverse effect under Section 106. Although a permanent incorporation (or acquisition) is not proposed, the determination is that permanent alterations to LAUS would result in a Section 4(f) use.

A temporary impacts (for access only) would also occur because the LAUS driveway from Cesar Chavez Avenue will be temporarily utilized for construction access (Figure 5-14); however the use of the access road would be temporary in nature and no change in ownership of land is proposed, the scope of work is minor as the road is only being used for access, there are no anticipated physical impacts, there are no modifications being made to the road.

Figure 5-14. Section 4(f) Use of Los Angeles Union Passenger Terminal



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Mitigation Measures CUL-2 (described in Section 3.12.6, Cultural and Paleontological Resources of the EIS) and PR-1 (described in Section 5.9 below) are proposed to minimize or reduce adverse effects. Mitigation Measure CUL-2 requires preparation of a BETP that provides detailed descriptions of treatment work that needs to be conducted on historic properties that are buildings or structures before, during and after construction. The BETP specifically includes:

- Provisions for the documentation to HABS standards of LAUS character defining features proposed for demolition or alteration;
- Provisions for the restoration of the existing LAUS passenger concourse to its 1939 appearance in accordance with the Secretary of the Interior's Standards for Restoration, where feasible, from an engineering and constructability standpoint;
- Provisions for the development of an educational display for LAUS;
- Provisions to evaluate the feasibility of reorienting at grade, vertically raising, or relocating the Terminal Tower;
- Provisions for the development of design plans for the replacement of the Cesar Chavez Avenue and Vignes Street Undercrossings and alterations to the south retaining wall that are compatible with the historic character of LAUS;
- Provisions for the development of design plans for work on the character defining features of North Main Street Bridge in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible;
- Provisions for consultation with appropriate parties during the early design phases;
- Requirements for the development of response plans for unanticipated effects and inadvertent damage to historical built environment resources; and

Mitigation Measure PR-1 requires restoration of temporary impact areas to original pre-construction conditions.

Based on the removal of the pedestrian passageway (tunnel), passenger ramps, platform railings, platforms (width and elevation), butterfly sheds, car supply building, and Cesar Chavez Avenue undercrossing, the determination is that a permanent use of LAUS would occur.

Vignes Street Undercrossing (Bridge #53C 1764)

Description of Vignes Street Undercrossing (Bridge #53C-1764)

Vignes Street Undercrossing spans over Vignes Street in Los Angeles in Segment 1 of the Project study area (Figure 5-15). The undercrossing is approximately 0.2-mile northwest of Cesar Chavez Avenue. Because the undercrossing was originally constructed as part of LAUS and is located immediately north of the LAUS resource boundary, the undercrossing contributes to the significance of LAUS. The undercrossing was determined eligible for listing in the NRHP under

Criterion A for being associated with significant historical events, at the local level of significance with a period of significance of 1937. Therefore, CHSRA has concluded the property is protected under the requirements of Section 4(f) as a historic property.

The historic boundary of the Vignes Street Undercrossing encompasses the entirety of the super- and sub-structure, including approach ramps and supporting embankments/abutments and/or wingwalls. The boundaries extend on either side of the bridge and include the piers, cantilevered sidewalks, pylons, and underwater footings. Contributing elements include the reinforced concrete construction of the overpass (including board-formed pattern), railing on the 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).

Use Assessment of Vignes Street Undercrossing (Bridge #53C 1764)

The Build Alternative would include demolition of the existing Vignes Street Undercrossing and replacement with a new bridge to support the raised tracks as they transition from the existing grade at Mission Junction up to the approximate 15-foot raised elevation of the proposed rail yard (Figure 5-16). Replacement of the existing railroad bridge over Vignes Street is required because of the elevated rail yard and due to insufficient loading capacity of the existing structure for future passenger train operations. The existing bridge was constructed in 1937 and does not meet current seismic design standards and is nearing the end of its design service life, as previous inspection reports (dated June 2, 2017) have indicated various locations where concrete spalling and efflorescence from water leaking is apparent at many of the joints.

The Vignes Street Undercrossing would be reconstructed in two portions, the westerly and easterly portions, resulting in closure of Vignes Street during the reconstruction. The details of the aesthetic features of the new structure would be determined during final design in consultation with CHSRA, the City of Los Angeles, the SHPO, and other regulatory agencies as applicable. However, the new structure would diminish five of the bridge's seven aspects of integrity: design, materials, workmanship, feeling, and association. The diminished integrity of the characteristics of the Vignes Street Undercrossing that associate it with LAUS and qualify it for the NRHP are considered an adverse effect under Section 106. Therefore, the determination is that a permanent use of the Vignes Street Undercrossing would occur.

Mitigation Measure CUL-2 (described in Section 3.12.6, Cultural and Paleontological Resources in this EIS and summarized above) is proposed to minimize or reduce adverse effects. This mitigation measure requires design plans for the replacement of the bridge be compatible with the historic character of LAUS and that feedback from early design review by consulting parties be considered in progressing the design to completion.

Figure 5-15. Vignes Street Undercrossing (View Northwest)



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Figure 5-16. Section 4(f) Use of Vignes Street Undercrossing



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North Main Street Bridge (Bridge #53C-010)

Description of North Main Street Bridge (Bridge #53C-010)

The North Main Street Bridge was previously evaluated in 1986 as part of the Caltrans Statewide Historic Bridges Inventory. The North Main Street Bridge was constructed in 1910 and determined eligible for the NRHP under Criterion C for its engineering as a pioneering example of a three-hinge bridge design (Figure 5-17). The bridge was assigned a California Historical Resource Status Code of 2S2, meaning that it was determined eligible for the NRHP through consensus during the Section 106 process; and in 2008, it was declared LAHCM #901. Therefore, CHSRA has concluded the property is protected under the requirements of Section 4(f) as a historic property.

Use Assessment of North Main Street Bridge (Bridge #53C-010)

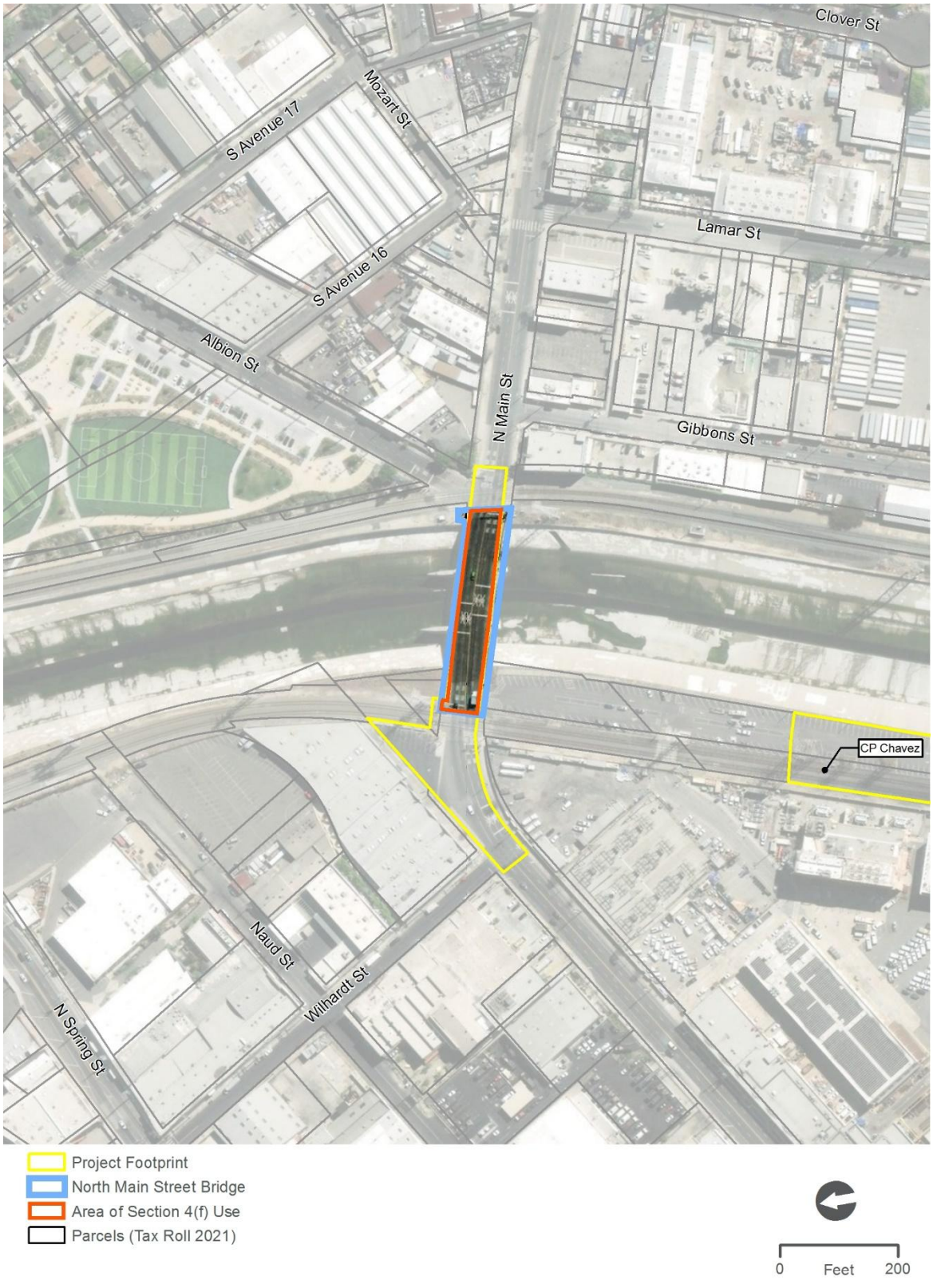
The Build Alternative would include safety improvements at the Main Street public at-grade railroad crossing to facilitate future implementation of a quiet zone desired by the City of Los Angeles to reduce horn noise at the crossing. (Figure 5-18). Safety improvements at the North Main Street Bridge include new sidewalks and curb ramps for ADA access; wire mesh fence, gates, and hand railings to keep pedestrians within the sidewalk. Reconstruction of the northwest and southwest concrete bridge railings and the wingwalls supporting the railings are proposed to accommodate pedestrian access. Modification of the bridge roadway is also proposed to add a new median (8 inches high, 8 feet wide, and 100 feet long) in conjunction with new pavement and restriping of the roadway to accommodate the new median and other safety improvements. Work adjacent to the North Main Street Bridge includes pedestrian crossing arms, swing gates, 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 match existing grade. The safety modifications to the North Main Street Bridge's important character-defining features are considered an adverse effect under Section 106. Therefore, due to the permanent alteration, the determination is that a permanent use of the historic North Main Street Bridge would occur.

Mitigation Measure CUL-2 (described in Section 3.12.6, Cultural and Paleontological Resources of this EIS and summarized above) is proposed to minimize or reduce adverse effects. This mitigation measure requires that design plans for work on the character-defining features of North Main Street Bridge be developed in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible, and that feedback from early design review by consulting parties be considered in progressing the design to completion.

Figure 5-17. North Main Street Bridge from Main Street at the Railroad Tracks (View East)



Figure 5-18. Section 4(f) Use of North Main Street Bridge



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5.7 Analyze Avoidance Alternatives

As evaluated in Section 5.7.2, the Build Alternative would permanently alter contributing elements and characteristics that qualify several historic properties for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. As the effect finding under Section 106 is Adverse, the permanent alterations listed above would result in a Section 4(f) determination that is greater than *de minimis*; therefore, avoidance alternatives were considered per 23 CFR Part 774.3(a) to evaluate whether they would be feasible and prudent.

Per 23 CFR 774.17, feasible and prudent avoidance alternatives are those that avoid using any Section 4(f) property and do not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. Additionally, in accordance with 36 CFR Part 800.6(a) CHSRA consulted with SHPO and other consulting parties to develop and evaluate alternatives or modifications that could avoid, minimize, or reduce adverse effects.

The following definitions are used in this analysis of avoidance alternatives considered, as provided in 23 CFR 774.17:

- **Not Feasible.** For an avoidance alternative to be considered not feasible, "it cannot be built as a matter of sound engineering judgment."
- **Not Prudent.** An avoidance alternative is not prudent if:
    - Factor 1: It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
    - Factor 2: It results in unacceptable safety or operational problems;
    - Factor3: After reasonable mitigation, it still causes severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts to minority or low-income populations; or severe impacts to environmental resources protected under other federal statutes;
    - Factor 4: It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
    - Factor 5: It causes other unique problems or unusual factors; or
    - Factor 6: It involves multiple factors of the previously stated criteria that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

5.7.1 No Action Avoidance Alternative

This analysis of the No Action Alternative, herein referred to as the No Action avoidance alternative for the purpose of this Section 4(f) evaluation, is applicable to the three Section 4(f) historic properties that would be subject to a Section 4(f) use (Table 5-6 and Section 5.7.2).

As stated in Chapter 1.0, Purpose and Need, within the EIS, the run-through track improvements over US-101 remain the fundamental component to improving operational efficiency, capacity, flexibility, reliability, and connectivity for trains using LAUS. Additionally, the Build Alternative would be designed to accommodate the HSR system at LAUS.

As part of the No Action avoidance alternative, proposed improvements to LAUS would not occur and would be inconsistent with the purpose and need. Rail yard operations through the throat and at the LAUS rail yard are currently constrained because opposing train movements take approximately twice as long to clear track segments than under a scenario with run-through tracks in place. The configuration of lead tracks 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 when activity at the station is at its highest level. The current one-way in-and-out configuration requires trains to enter and exit through the same set of tracks. Additionally, the current platforms and pedestrian passageway do not meet current CBC or ADA requirements. The estimated total daily train movements (revenue and nonrevenue regional/intercity trains) through LAUS are also forecasted to grow from 233 trains per day in 2016 to 830 regional/intercity trains per day in 2040, with an additional 272 HSR trains by 2040. Therefore, the combination of future traffic volumes, population growth, and lack of operationally efficient infrastructure improvements to LAUS would cumulatively cause unique problems or impacts of extraordinary magnitude in the future.

Although no physical improvements to LAUS would occur under this avoidance alternative; thereby avoiding the use of all Section 4(f) properties, this avoidance alternative is not feasible and prudent because it would not meet the purpose and need. Likewise, the No Action avoidance alternative would result in unique problems or impacts of extraordinary magnitude to LAUS given the existing issues with capacity and efficiency, combined with future growth projections.

5.7.2 Individual Resource Avoidance Assessments

Los Angeles Union Passenger Terminal (Alternative Location)

To completely avoid use of this historic property, an avoidance alternative would require the construction of a new station along an alternate alignment. To function operationally, existing urban, regional, and intercity rail and bus transit routes would need to be re-aligned to connect to a new station location. The new alignment and station location would also require substantial land acquisition and construction in densely populated and urbanized areas of downtown Los Angeles to re-align existing and proposed track infrastructure (and bus routes).

In considering reasonable and prudent avoidance alternatives to the Build Alternative considered, it is important to understand how the transit functionality of LAUS has evolved. As originally designed, LAUS was organized as a traditional rail station, processing passengers via a straightforward sequence from the west entrance to the rail yard. Currently, LAUS functions more like an interchange between multiple transit modes; primarily as a result of the addition of the Metro Red/Purple Line below grade, the above grade Gold Line LRT, and the addition of the Patsaouras Transit Plaza at the east end of the LAUS campus.

Design Variations

By shifting to an alternate location, due to the densely built environment of the City of Los Angeles and the historic age of the City, an alternative location to LAUS would likely result in severe unavoidable effects to regional and local infrastructure, environmental resources, and other Section 4(f) properties not previously considered. Construction of a new station along a new track alignment may also result in severe and substantially adverse economic impacts as any new station location along a new alignment would require property acquisition and would displace businesses and residences within the city. Therefore, an alternate location for LAUS was rejected from further consideration because it would not be a feasible and prudent alternative to avoid the use of the Los Angeles Union Passenger Terminal.

As described in Section 3.12, Cultural and Paleontological Resources, of the EIS, CHSRA and Metro have considered multiple design variations for the major project components; however, none of them avoid the use of the historic property while meeting the purpose and need due to the extremely constrained location. The improvements necessary to address the project purpose and need would result in an adverse effect determination under Section 106; and therefore, a Section 4(f) use of LAUS would still occur.

5.7.3 Vignes Street Undercrossing (Bridge #53C-1764)

Design Variation

Preserved Undercrossing at Vignes Street with New Overhead Bridge

A design variation was explored to avoid the use of the Vignes Street Undercrossing by constructing a new wider bridge crossing over the existing structure to improve its structural capacity (e.g., to meet loading requirements of Cooper E-60).

Because the existing structure is aging and also needs a retrofit, the addition of a new bridge over the existing bridge would not be of sound engineering judgement because of unacceptable safety or operational problems that may occur. This design variation would result in more costly maintenance and operational costs for the existing bridge plus new over-structure would result in difficulties with inspecting and maintaining both structures per AREMA standards. Severe design complications would also arise with tying in the tracks as they transition from the new raised superstructure into the elevated rail yard required as part of the Build Alternative.

Additionally, this design variation would result in new adverse indirect effects to the aesthetics and the visual quality of the existing historic bridge structure. In conjunction with the various factors that would cumulatively cause unique problems or impacts of extraordinary magnitude and costs, the effect of this design variation would still result in an adverse effect under Section 106; thereby resulting in a use under Section 4(f). Therefore, this design variation is not considered a feasible and prudent alternative.

Alignment Shift

Eastern Realignment of Vignes Street Overhead Bridge

In order to avoid the use of the Vignes Street Undercrossing and historic bridge, starting from the location near Mission Tower (Resource Number H-6 on Figure 5-2), the throat tracks would need to be realigned to the east to connect to and meet the elevated grade of the rail yard. Additionally, due to the straight orientation of the platforms, and tracks, the northern portion of the station that merges into the throat tracks may need to be adjusted to maintain the eastern curve. Therefore, the Project footprint would be expanded. Similar to the Build Alternative, the new alignment would include a new bridge over Vignes Street that would be able to accommodate the additional loading requirements. In preserving the existing structure in place to avoid a use, a new bridge per AREMA standards would be constructed and realignment of the tracks and station would need to occur for the purpose of creating the run-through track structure. Given the scale of the improvements, this avoidance alternative would result in substantially more severe effects when compared to the Build Alternative based on the substantial ROW requirements and more extensive construction required to realign the rail yard.

This alignment shift would require the acquisition of industrial and public properties surrounding the intersection of Bauchet Street and Vignes Street. These properties include County owned property which contains the Men's Central Jail and LASD; as well as multiple private properties with active businesses. Additionally, realignment of this portion of the throat track would require significant grading and excavation, which would result in additional utility relocations and impacts to adjacent roadways (e.g., Vignes Street, Bauchet Street, Avila Street, and Cesar E. Chavez Avenue). Due to the larger footprint required to construct an entirely new overcrossing and realign the throat track and portion of the rail yard, additional impacts related to hazardous materials, aesthetics, drainage and water quality, and noise and vibration would also result.

As discussed above, the existing Vignes Street Bridge was built in 1937 and is nearing its design service life span and does not meet current seismic design standards. Metrolink inspection reports (Dated June 15, 2017) have also identified various locations of concrete spalling and efflorescence from water leaking. Since this bridge would not be retrofitted or rehabilitated, retaining it in its current state would result in risks to roadway traffic and pedestrian movements through the Vignes Street Undercrossing.

Compared to the Build Alternative, this alignment shift would avoid the use of the Vignes Street Undercrossing. However, this avoidance alternative would come at an extraordinary increase in the scope and magnitude of project-related infrastructure, construction duration, greater design complications, and additional severe effects on adjacent private properties. Therefore, this alignment shift is not considered a feasible and prudent alternative.

5.7.4 North Main Street Bridge (Bridge #53C-010)

Alignment Shift

Realignment of North Main Street Bridge

A Northern Avoidance Alternative was considered that would involve preserving the North Main Street Bridge in place and constructing a new bridge crossing, with the necessary safety improvements at this location, just north of the existing structure. This avoidance alternative would require permit authorizations from USACE, RWQCB, and CDFW for work activities within the Los Angeles River which would prolong the environmental clearance and construction schedule. This design variation would directly impact the southern end of the Albion Riverside Park, in an area currently used as a walking path as well as an outdoor seating area. The Northern Avoidance Alternative would adversely affect the activities, features, and attributes that qualify the Albion Riverside Park as a Section 4(f) resource. Therefore, while the northern realignment alternative would avoid the use of the North Main Street Bridge, it would not be considered an avoidance alternative under Section 4(f), since it alternatively uses the Albion Riverside Park. The Northern Avoidance Alternative is discussed further under the least overall harm assessment in Section 5.9.

A southern alignment shift was also considered. This would involve preserving the North Main Street Bridge in place and constructing a new bridge crossing, with the necessary safety improvements, just south of the existing structure. This Southern Avoidance Alternative would also require permit authorizations from USACE, RWQCB, and CDFW for work activities within the Los Angeles River which would prolong the environmental clearance and construction schedule. This new alignment would begin approximately east of North Main Street and Gibbons Street to just west of North Main Street and Wilhardt Street.

This design concept would require acquisition of industrial and manufacturing properties that include a public utility facility owned by LADWP at the western terminus of the bridge, and various businesses at the eastern terminus of the bridge. Furthermore, this new southern adjacent bridge would require realignment of North Main Street, as well as adjustments to several connecting side streets (e.g., Wilhardt Street, Albion Street, and Gibbons Street). Therefore, the Project footprint in this area would be extended to accommodate the additional work area and land acquisitions needed to implement this alignment shift. Additional adverse effects related to land use, transportation, aesthetics, air quality, drainage and soils, hazardous risks, utilities, and noise and vibration would occur.

Under this Southern Avoidance Alternative, the construction schedule would be prolonged and since additional acquisitions and design components would also require improvements to the two railroad crossings at the terminus of either side of the bridge. This avoidance alternative would also require review and approvals from LADWP for the impacts to their facility which includes a substation; as well as permit authorizations from USACE and CDFW for work activities within the Los Angeles River.

Under the Southern Avoidance Alternative, Project-related impacts to the North Main Street Bridge would be avoided; however, the implementation of a new bridge would result in construction costs of an extraordinary magnitude and design complications. A new bridge south of the existing bridge would result in significantly more severe impacts compared to the Build Alternative for the reasons discussed above. Therefore, this Southern Avoidance Alternative would result in impacts of an extraordinary magnitude and is not considered a feasible and prudent alternative.

5.8 Minimization and Mitigation of Harm

When use of a Section 4(f) property is required and when CHSRA does not make a finding of *de minimis* impact for that property, all possible planning to minimize harm, including development of reasonable mitigation measures, must be undertaken in coordination with the agency owning and/or administering the resource (OWJ). Mitigation for historic properties typically consists of those measures necessary to preserve the property/site or minimize adverse effects to the historic integrity of the site and agreed to in accordance with 36 CFR 800 by SHPO, ACHP (if involved), and other Section 106 consulting parties.

In evaluating the reasonableness of measures to minimize harm, the preservation purpose of the statute and the following must be considered:

- The views of the OWJ over the Section 4(f) property
- Whether the cost of the measures is a reasonable public expenditure in light of the adverse impacts of the Project on the Section 4(f) property and the benefits of the measure to the property
- Any impacts or benefits of the measures to communities or environmental resources outside of the Section 4(f) property

CHSRA and Metro have designed the Build Alternative in a manner that minimizes its overall effects on Section 4(f) properties to the extent reasonable. These minimization measures and commitments are contained in the PA, which was executed prior to the NEPA Record of Decision. In addition, the proposed mitigation measures in the following sections are based, in part, on the measures adopted by Metro in the 2019 Link US Final EIR (State Clearinghouse No. 2016051071) and will be refined through consultation with those who have jurisdiction over the Section 4(f) properties and other consulting parties under Section 106.

The cost of these measures would be a reasonable public expenditure in light of the adverse effects of the Build Alternative. Additionally, the benefits of the measure(s) to the property and the measures themselves would not result in any substantial impacts on communities or environmental resources outside the Section 4(f) properties. Therefore, the measures provided below are considered reasonable mitigation measures, and the Build Alternative includes all possible planning to minimize harm to the resources resulting from the use of Los Angeles Union Passenger Terminal, the Vignes Street Undercrossing, and the North Main Street Bridge. The

following measure is proposed to mitigate temporary construction impacts once construction of the Build Alternative is complete:

PR-1 **Restoration of Affected Areas.** CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.

5.8.1 Los Angeles Union Passenger Terminal

Measures to minimize harm were finalized through consultation with SHPO and other consulting parties in accordance with the Section 106 process. These measures were designed to create conditions that allow for a transition from old (historic LAUS) to new (proposed passenger concourse/rail yard). In addition to Mitigation Measure PR-1 (Section 5.7), measures to minimize harm to the LAUS resource are included in the provisions of the following mitigation measure (fully described above):

CUL-2 **Built Environment Treatment Plan (BETP)** (described in Section 3.12, Cultural and Paleontological Resources of this EIS).

5.8.2 Vignes Street Undercrossing (Bridge #53C-1764)

Measures to minimize harm for the Vignes Street Undercrossing are the same as the relevant measures for LAUS (discussed above), since the undercrossing is important for its association with LAUS. This measure allows for the new bridge to be designed in consideration of feedback received from the SHPO in progressing the design to completion.

CUL-2 **Built Environment Treatment Plan (BETP)** (described in Section 3.12, Cultural and Paleontological Resources of this EIS).

5.8.3 North Main Street Bridge (Bridge #53C-010)

Measures to minimize harm to the North Main Street Bridge include Mitigation Measure CUL-2, which requires design plans for alterations to the character-defining features of the bridge to be prepared in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible.

CUL-2 **Built Environment Treatment Plan (BETP)** (described in Section 3.12, Cultural and Paleontological Resources of this EIS).

5.9 Determine Alternative with Section 4(f) Least Overall Harm

When there is no feasible and prudent avoidance alternative (which avoids all Section 4(f) properties) and there are two or more alternatives that use Section 4(f) property, a least overall

harm analysis is required pursuant to 23 CFR 774.3I. Least overall harm is determined by balancing the following seven factors:

i) The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);

ii) The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;

iii) The relative significance of each Section 4(f) property;

iv) The views of the OWJ over each Section 4(f) property;

v) The degree to which each alternative meets the purpose and need for the project;

vi) After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

vii) Substantial differences in costs among the alternatives.

As discussed in detail in Section 5.7, two alternatives for the North Main Street Bridge have been identified that both result in a Section 4(f) use: the Build Alternative and the Northern Avoidance Alternative. Table 5-7 includes an evaluation of these alternatives relative to the seven least overall harm factors.

Table 5-7. Least Overall Harm Analysis for North Main Street Bridge Alternatives

Factors	Build Alternative	Northern Avoidance Alternative	Least Overall Harm Analysis
i. The ability to mitigate adverse impacts to each Section 4(f) property	Design for safety improvements would be undertaken in consultation with SHPO and other interested parties as mitigation to minimize the adverse impacts to the Section 4(f) Historic Property. The features on the bridge would continue to contribute to the NRHP-eligibility of the bridge, which remains eligible for the NRHP after the safety modifications.	Based on the required acquisition of the southernmost portion of the Albion Riverside Park, the walking paths in the park would be permanently impacted. Mitigation to improve other portions of the park (i.e., new playground equipment, landscaping improvements, etc.) can be applied to this alternative. These can be viewed as a benefit for the park, albeit the park does not require improvements given its recent construction date in 2019.	Both alternatives are equal in their abilities to mitigate adverse impacts to North Main Street Bridge and to Albion Riverside Park, as Section 4(f) Properties.
ii. The relative severity of the	Design for safety improvements would be undertaken in consultation	The protected activities of the Albion Riverside Park include recreational	The remaining harm after mitigation for the Northern Avoidance Alternative to activities

Table 5-7. Least Overall Harm Analysis for North Main Street Bridge Alternatives

Factors	Build Alternative	Northern Avoidance Alternative	Least Overall Harm Analysis
remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection	with SHPO and other interested parties. The modifications made to the bridge would alter the current appearance of some of the features that qualify the Section 4(f) historic property for protection (such as the wing walls, sidewalks, and bridge decking). However, these features on the bridge would continue to contribute to the NRHP-eligibility of the bridge, which remains eligible for the NRHP after the safety modifications.	uses such as multipurpose athletic fields, basketball courts, walking paths, fitness equipment, a playground and picnic areas. Based on the required acquisition of the southernmost portion of the park for the Northern Avoidance Alternative, the walking paths in this area would be permanently impacted. Mitigation to improve other features of the park can be applied to this alternative (see the note above about the recent construction date of the park).	that qualify the Albion Riverside Park for Section 4(f) protection is more severe than the Build Alternative since walking paths in the park would be permanently impacted even after the application of mitigation.
iii. The relative significance of each Section 4(f) property;	The Build Alternative impacts contributing elements of the North Main Street as a historic property.	The Northern Avoidance Alternative impacts the Albion Riverside Park and the walking paths that are considered a protected activity.	Both alternatives impact different Section 4(f) properties. The relative significance of each of the Section 4(f) properties are equivalent.
iv. The views of the official(s) with jurisdiction over each Section 4(f) property;	SHPO has concurred with a finding of adverse effect under Section 106 and the mitigation measures to reduce impacts to this resource, CUL-2.	SHPO was provided with an opportunity to provide feedback on the Northern Avoidance Alternative; however, no responses or feedback were received.	Feedback from SHPO related to the Build Alternative was considered in the least overall harm analysis.
v. The degree to which each alternative meets the purpose and need for the project;	The Build Alternative meets the Purpose and Need for the project by enhancing localized safety in and around LAUS.	The Northern Alternative meets the Purpose and Need for the project by enhancing localized safety in and around LAUS.	Both alternatives meet the Purpose and Need for the project by enhancing localized safety upgrades in and around LAUS.
vi. After reasonable mitigation, the magnitude	Mitigation Measure CUL-2 is a reasonable mitigation measure, which includes provisions that require design plans for alterations	Reasonable mitigation for the Northern Avoidance Alternative includes ensuring access to and from the	The Northern Avoidance Alternative, even after the application of reasonable mitigation, would still result in adverse impacts to the Albion

Table 5-7. Least Overall Harm Analysis for North Main Street Bridge Alternatives

Factors	Build Alternative	Northern Avoidance Alternative	Least Overall Harm Analysis
of any adverse impacts to resources not protected by Section 4(f)	to the character-defining features of the bridge to be prepared in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties, to the extent feasible. These provisions require the design plan to preserve character defining materials, features, finishes, and spaces from its period of significance, thereby replicating its appearance at a specific period of time and in its historic location). Upon implementation, there are no further adverse impacts to other resources protected by Section 4(f) due to proximity.	Albion Riverside Park, which would be at least partially impeded during the construction new bridge. A traffic management plan would likely be required to minimize impacts on vehicular and non-vehicular circulation for the area. The park was constructed in 2019 with a focus on improving water quality in the neighboring LA River and creating recreational uses on adjacent land. Green infrastructure that may be impacted as a result of this alternative, such as bioretention facilities, bioswales and pervious pavement subsurface areas for improved stormwater quality before it discharges into the LA river, would necessitate mitigation. Mitigation would need to ensure that these systems are either replaced or restored to their current function, if feasible.	Riverside Park as it relates to the existing stormwater infrastructure that was installed in 2019. This infrastructure was installed to improve stormwater quality in the area. Since the Build Alternative has no impacts to the Albion Riverside Park, impacts to the stormwater quality infrastructure would be avoided with the Build Alternative.
vii. Substantial differences in costs among the alternatives	The Build Alternative includes safety modifications that require a limited amount of work to be completed on the wingwalls, sidewalk, and deck of the bridge. No ROW acquisition is required for these improvements.	The Northern Avoidance Alternative would necessitate the construction of an entirely new bridge with the safety upgrades. Additionally, modification to the existing North Main Street bridge to close pedestrian and vehicular crossings at this location would be required. Lastly, there would be impacts to the southern end of Albion Riverside Park that	The Northern Avoidance Alternative would include an entirely new bridge across the LA River that requires a substantial increase in cost when compared to the Build Alternative.

Table 5-7. Least Overall Harm Analysis for North Main Street Bridge Alternatives			
Factors	**Build Alternative**	**Northern Avoidance Alternative**	**Least Overall Harm Analysis**
		would require ROW acquisition.	

After considering the analysis above, CHSRA determined that the Build Alternative causes the least overall harm in light of the statute's preservation purpose for the following reasons:

- Factor II, Severity of Remaining Harm - The remaining harm after mitigation for the Northern Avoidance Alternative to activities that qualify the Albion Riverside Park for Section 4(f) protection is more severe than the Build Alternative because walking paths in the park would be permanently impacted (removed or realigned) even after the application of mitigation.

- Factor VI, Magnitude of Adverse Impacts to Resources Not Protected by Section 4(f) - Because the Build Alternative has no impacts to the Albion Riverside Park, impacts to stormwater quality infrastructure would be avoided with the Build Alternative.

- Factor VII, Cost - The Northern Avoidance Alternative would include a new bridge across the Los Angeles River that requires a substantial increase in cost when compared to the Build Alternative.

The Build Alternative includes all possible planning, as defined in 23 CFR § 774.17, to minimize harm to Section 4(f) properties.

5.10 Summary of Impacts

All possible planning to minimize harm to Section 4(f) properties resulting from use has been incorporated as required by 49 USC Section 303(c)(2). In consideration of the previous discussion on the use of Section 4(f) properties, there are no feasible and prudent avoidance alternatives to the use of land from the following properties:

- Los Angeles Union Passenger Terminal (Resource Number H-2 on Figure 5-2)
- Vignes Street Undercrossing (Resource Number H-7 on Figure 5-2)
- North Main Street Bridge (Resource Number H-15 on Figure 5-2)

CHSRA has considered the views of the SHPO, as the OWJ, in making the Section 4(f) determinations above.

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6.0 Other NEPA Considerations

In accordance with NEPA requirements, CEQ implementing regulations (40 CFR Part 1500),[1] and the FRA Procedures,[2] this EIS discloses the unavoidable adverse effects and includes an analysis of any irreversible or irretrievable commitment of resources that would occur if the Build Alternative is constructed, as well as the relationship between short-term uses of the environment and the enhancement of long-term productivity.

6.1 Unavoidable Adverse Effects

Section 40 CFR §1502.16 require a discussion of any unavoidable adverse effects that cannot be avoided if the Project is implemented. Sections 3.2 through 3.15 of this EIS provide a detailed analysis of all direct and indirect effects related to construction and operation of the Build Alternative; identify feasible mitigation measures, where available, that could minimize adverse effects; and acknowledge if any unavoidable adverse effects would remain after implementation of applicable mitigation measures. Section 3.16, Cumulative Effects, of this EIS identifies the cumulative effects resulting from the combined impacts of the Build Alternative and past, present, and reasonably foreseeable cumulative projects considered. If a specific effect cannot be fully mitigated, it is considered an unavoidable adverse effect.

Implementation of the Build Alternative would result in unavoidable adverse effects in the following topic areas: noise and vibration (construction-related impacts), and cultural and paleontological resources (construction-related impacts that would remain throughout operations). These unavoidable adverse effects are described further below.

- Noise – Construction (daytime and nighttime noise levels would exceed thresholds at William Mead Homes, Care First Village, Mozaic Apartments, and Metro Gateway Childhood Development Center)
- Cultural Resources – Construction and Operations (adverse effects on the following historic properties would occur during construction and remain throughout operation: Archaeological Site CA-LAN-1575/H, Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge)

[1] The CEQ has withdrawn its 40 Code of Federal Regulations (CFR) Parts 1500-1508 regulations from the Federal Register. CEQ's Interim Final Rule Rescinding CEQ Regulations, 90 Fed. Reg. 10610 (Feb. 25, 2025). However, the CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent (NOI), May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

[2] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

- Paleontological Resources – Construction and Operations (adverse effect on paleontological resources if paleontologically sensitive sediments are encountered during excavation)

Sections 3.2 through 3.15 of *Appendix Q, Environmental Evaluation of Malabar Yard Mitigation* provide a detailed analysis of all direct and indirect effects related to construction and operation of the Malabar Yard railroad improvements; identify feasible mitigation measures, where available, that could minimize adverse effects; and acknowledge if any unavoidable adverse effects would remain after implementation of applicable mitigation measures. Implementation of the Malabar Yard railroad improvements would result in unavoidable adverse effects in the following topic areas:

- Transportation – Operations (potential roadway hazard due to queuing)
- Safety and Security – Operations (potential increased response times for emergency service providers and roadway hazard due to queuing)
- Socioeconomics and Communities Affected – Operations (potential access restrictions to Stacy Medical Center)

6.2 Irreversible or Irretrievable Commitment of Resources

The NEPA regulations require that the discussion of environmental consequences include "…any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented" (40 CFR § 1502.16). Resources that are irreversibly or irretrievably committed to a proposed action are those that cannot be recovered or reversed.

The Build Alternative would require the commitment of material and energy for construction and operation, and the commitment of land for proposed infrastructure. The Build Alternative would require an investment of materials, such as rock, aggregate, steel, and other building materials. Fossil fuels would be consumed for construction and trains operating through LAUS. In addition, the Build Alternative would require the conversion of land to accommodate the new transportation infrastructure. These environmental changes are considered irreversible in that they would be used for the Build Alternative and cannot be recovered.

These resources are further described as follows:

- Commitment of land for transportation purposes (see Section 3.2, Land Use and Planning for detailed description). The land used for the Build Alternative would be used for transportation purposes. To the extent that this commitment would be for long-term use, it would be an irretrievable 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 sold and converted to some other use. Currently, there is no reason to expect that such a need for conversion would ever be necessary or desirable.

- Commitment of natural resources during construction activities associated with the Build Alternative, including the use of construction materials (e.g., steel, concrete, etc.) (see Chapter 2.0, Alternatives and Design Options Considered for detailed description). The loss of these resources is considered irreversible because their reuse for some other purpose than the Project would be highly unlikely or impossible. Based on these considerations, the Build Alternative (see Chapter 2.0, Alternatives and Design Options Considered for details) constitutes an irreversible commitment of natural resources.
- Consumption of nonrenewable energy resources, mainly diesel and electricity, as a result of construction, operation, and maintenance of the proposed infrastructure improvements (see Section 3.5, Air Quality and Global Climate Change for detailed description). The Build Alternative would result in a short-term increase in the use of energy to manufacture, deliver, and construct the proposed infrastructure improvements. The manufacturing of materials used to construct the Build Alternative 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.

6.3 Relationship between Short-Term Use of the Environment and the Enhancement of Long-Term Productivity

As described in Chapter 1.0, Purpose and Need, existing facilities at LAUS do not have adequate operational and passenger capacity to serve future rail transportation needs. In its current configuration, the physical constraints of the throat and stub-end rail yard, combined with the existing 28-foot-wide pedestrian passageway, limits Metro's ability to accommodate planned increases in regional and intercity rail service or new HSR service and the corresponding increase in passengers through LAUS.

The Build Alternative would improve operational efficiency, capacity, flexibility, and connectivity for trains using LAUS and provide near- and long-term productivity benefits and improved quality of life. Certain short-term uses of the environment would occur during construction. These short-term uses of the environment would include temporary, localized traffic congestion, GHG emissions, noise, vibration, and light and glare that typically occur in the vicinity of construction activities. Beneficial short-term effects of the Build Alternative would be related to new construction employment and purchases of construction materials, supplies and services.

The Build Alternative would provide the following long-term benefits:

- Improved regional connectivity with one seat rides to key destinations in Southern California.
- Reduced train idling times resulting in shorter wait times and emissions reductions per train, improving the air quality within the Project study area.
- Creation of future retail and transit serving amenities.

- Improved pedestrian access to the train platforms and capacity for passengers connecting to various rail/transit services at LAUS with enhanced accessibility for passengers with disabilities.
- Reduced noise levels from existing train noise with the addition of sound walls at William Mead homes and Care First Village.
- Improved pedestrian and bicycle facilities, linkages to surrounding neighborhoods, and access to transit.
- Increased tax revenues generated, along with higher employment and labor income, specifically:
    - Increased annual local government tax revenues by $4.0 million (in 2019 dollars) under operations of the Build Alternative
    - Creation of more than 23,000 job years in Los Angeles County during the construction phase for the Build Alternative with job opportunities for low-income and minority populations.
    - Creation of up to 146 new full time equivalent positions (including 96 retail jobs) at the concourse in the opening year with job opportunities for low-income and minority populations.
    - Creation of an additional 25 full time equivalent positions associated with expanded Metrolink and Amtrak services and the introduction of CHSRA service after the opening year with job opportunities for low-income and minority populations.

The Malabar Yard railroad improvements would result in the following long-term benefits:

- The Malabar Yard railroad improvements would contribute to regional air quality benefits by allowing for the separation of freight and passenger trains operating on the San Bernardino line. With less interference between freight and passenger trains, operational efficiencies would result in less idling and a reduction in train miles and truck VMT.
- Upon approval from the City of Vernon and CPUC, the Malabar Yard railroad improvements would result in safety enhancements, including arms, flashers, raised medians, and driveway gates at at-grade rail crossings, as well as the closure of one at-grade rail crossing.
- Upon approval from the City of Vernon and CPUC, 46th Avenue would have expanded curbs, sidewalks, traffic signals, center medians, and restriping to improve pedestrian and vehicular mobility and safety.

The benefits of improving the reliability and efficiency of the local and regional transportation system would be realized in the near term and would likely increase over the long term as the need for transportation infrastructure increases.

7.0 CEQA Supplemental Environmental Impact Report

Metro, as the CEQA lead agency for the Project, certified the Final SEIR and adopted CEQA Findings of Fact, a Statement of Overriding Considerations (SOC), and a Revised Mitigation Monitoring and Reporting Program (MMRP) on October 23, 2025. On October 24, 2025, Metro filed a Notice of Determination (NOD) with the Los Angeles County Clerk and California State Clearinghouse, as required under CEQA.

As the local sponsor and NEPA joint lead agency and CEQA lead agency, Metro is satisfied that the environmental documentation for the Project fully complies with all applicable federal and state requirements. The certified Final SEIR is intentionally excluded from the remainder of the Final EIS, and is available on-line at: https://linkunionstation.com/.

Metro will prepare an Errata to the Final SEIR and related project approvals (CEQA Findings of Fact, SOC, and a Revised MMRP) to acknowledge minor corrections, and sections of these documents that require clarification and updates to maintain consistency with content presented in the Final EIS and/or ROD, as applicable. A document combining the Final SEIR and Final EIS will be prepared upon approval of both documents.

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8.0 Public and Agency Outreach

This chapter documents the public and agency outreach conducted during preparation of the EIS for the Project pursuant to the requirements of the NEPA. Proactive and ongoing coordination with agency stakeholders and the public is critical to the environmental process. CHSRA and Metro began the public engagement process early to ensure stakeholder feedback was incorporated into the scope of the environmental document as well as analysis required to identify potential effects and determine appropriate mitigation measures. Outreach efforts were performed in accordance with USC Title 23, Section 139, and were inclusive of all members of the public and encouraged public involvement.

In May 2016, FRA published an NOI in the FR (refer to Section 8.4). The NOI identified the purpose and need of the Project, the Project limits, a description of Project alternatives, potential environmental impacts of the Project; points of contact for additional information; and the dates and locations of the scoping meetings. In September 2020, in response to the potential need for railroad improvements at Malabar Yard in the City of Vernon, CHSRA issued a Revised NOI to initiate additional scoping and solicit additional public and agency input regarding the development of the Draft EIS for the Project.

8.1 Summary of Public and Agency Outreach

This chapter provides a summary of the outreach efforts, which included a variety of formal and informal outreach methods, such as in-person and virtual public meetings, key stakeholder and community group briefings, Project development team and agency coordination meetings, advertisements, email blasts, mailings, pamphlet distribution, website updates, and social media engagement. An overview of the public information materials and meetings disseminated throughout the previously joint and separate CEQA and NEPA processes are as follows:

- 14 Link US Public Meetings
  - Joint NEPA/CEQA Outreach Events
    - Public Scoping Meeting (2016)
    - Community Meeting (2016)
    - William Mead Homes Community Workshop (2017)
    - Vernon Community Meeting and Open House (2025)
    - City of Vernon City Council (2025)
    - City of Vernon Chamber of Commerce (2025)
  - CEQA Outreach Events
    - LAUS Open Houses (2018 and 2019)
    - Draft EIR Public Hearing (2019)

        - William Mead Homes Community Meeting (2019)
    - NEPA Outreach Events
        - Virtual Public Scoping Meeting (2020, virtual)
        - Vernon Business and Industry Committee Meeting (2020 and 2021, virtual)
        - Vernon Business Stakeholder Meeting (2021, virtual)

- 15 Individual Property Owner Meetings in Vernon During Preparation of the Draft EIS:
    1. Dennis Roach (4811 Hampton Street): September 21, 2020
    2. Michael Melideo (4848 Santa Fe Avenue): September 21, 2020
    3. Michelle Rojas (4900 Santa Fe Avenue): October 5, 2020
    4. Jacob Khobian and Jonathan Khodabaksh (4800-4824 Santa Fe Avenue): October 5, 2020
    5. John Rhee, Jessica Bagdanov, Richard Lucas, and Ignacio Crespo (4620 Seville Avenue): October 6, 2020
    6. Martin Barab (4535 Soto Street): October 7, 2020
    7. Allan Cooper and Ellia Thompson (2665 Leonis Boulevard): November 6, 2020
    8. Andre Roshan (2734 46th Street): January 5, 2021
    9. Veronica Salinas (4618 Pacific Boulevard): January 6, 2021
    10. Rick Pena (4585 Pacific Boulevard): January 6, 2021
    11. Dennis Berman (4550 Seville Avenue): January 7, 2021
    12. David Prince (4580 Pacific Boulevard): January 7, 2021
    13. Allan Cooper and Ellia Thompson (2665 Leonis Boulevard): January 11, 2021
    14. Michael Melideo (4848 Santa Fe Avenue): January 27, 2021
    15. Jacob Khobian representing 4800-4824 Santa Fe Avenue): January 28, 2021
- 13 Individual Property Owner Meetings in Vernon During Preparation of the Final EIS
    1. Martin Barab (4535 Soto Street): December 18, 2024
    2. Michelle Rojas (4900 Santa Fe Avenue): December 18, 2024
    3. John Rhee (4620 Seville Avenue): December 18, 2024
    4. Rick Pena (4585 Pacific Boulevard): January 9, 2025
    5. Dennis Berman (4550 Seville Avenue): January 9, 2025
    6. Steven H. Florman (4580 Pacific Boulevard): January 14, 2025
    7. Arcadia Leonis (2665 Leonis Boulevard): January 17, 2025

8. Amy Gantvoort (2661 E 46th Street): January 24, 2025
9. Jacob Khobian (4800-4824 Santa Fe Avenue): January 31, 2025
10. Jinny Seo (2725 E. 46th Street): January 31, 2025
11. Michael Melideo (4848 Santa Fe Avenue): February 3, 2025
12. Stephanie Sagheb (4811 Hampton Street): February 3, 2025
13. Veronica Salinas (4618 Pacific Boulevard): February 17, 2025

- 17 Public Events
  1. CicLAvia
  2. CicLAvia Heart of LA
  3. Community Update Meeting
  4. HSR Open House
  5. LAUS Round Table Workshop
  6. LAUS Round Table Workshop
  7. LAUS Round Table Workshop
  8. Metro Accessibility Advisory Board Meeting
  9. Metro Accessibility Advisory Committee
  10. Metro Central LA Roundtable
  11. Train-to-Table Farmer's Market
  12. Union Station 80th Anniversary
  13. Union Station Holiday Festival and Market
  14. Union Station Pop Up
  15. Union Station Train Fest
  16. Vernon Business Stakeholder Meeting
  17. William Mead Homes Community Listening Workshop
- 29 Non-Governmental Organizations Briefed
- 100+ Social Media Posts
- Mailer Notifications – 23,460 addresses
  - Public Scoping Mailers (NEPA/CEQA)
  - Public Hearing Mailers (CEQA)
  - Revised NOI Scoping Announcement Mailers (NEPA)
- Email Updates – Over 23,145 contacts

- 30+ e-blasts with Project updates and event presentations
- Three e-blasts for Public Scoping Meeting (NEPA/CEQA)
- Seven e-blasts for Open Houses (CEQA)
- Six e-blasts for Draft EIR Public Hearing (CEQA)
- One e-blast for the Release of the Revised NOI (NEPA)
- Four e-blasts for the Virtual Public Scoping Meeting (NEPA)
- Four e-blasts for Vernon Business Stakeholder Meeting (NEPA)

As described above and within this chapter, CHSRA and Metro coordinated extensively with other federal, state, local, and tribal entities during the scoping processes and throughout preparation of the Draft EIS/SEIR.

8.2 Los Angeles County Metropolitan Transportation Authority's Public Participation Plan

Metro's *Public Participation Plan* (Metro 2022) guides Metro's outreach efforts to gather public input on possible changes to bus and rail service, as well as new projects in planning and construction, fares, and other programs. Metro's *Public Participation Plan* provides multiple platforms for communication, providing comfortable, accessible, far-reaching, broadly serving, and individually engaging settings. Based on examples provided in the *Public Participation Plan*, a comprehensive community outreach, public information, and engagement strategy was developed to serve all stakeholders, including people with disabilities, LEP, minorities, and low-income populations. Metro prepared a Project-specific *Public Outreach Plan* and *Agency and Public Coordination Plan* (Appendix R of this EIS) to outline the approach for administering the public outreach process while identifying roles, responsibilities, and timelines for agency and public coordination throughout the environmental review process (Section 8.2.1).

Public involvement activities were conducted in accordance with Metro's *Public Participation Plan* (Metro 2022).

8.2.1 Public Outreach Plan

As part of the NEPA process, CHSRA, Metro, and FRA conducted outreach activities and public meetings beyond the public review and scoping requirements of NEPA. Additionally, in accordance with the NHPA, Section 106 tribal consultation, and notification to Tribes and other consulting parties were conducted, along with Section 4(f) coordination requirements contained in the provisions of 49 USC Section 303 and 54 USC Section 306108. Initial public outreach efforts to obtain comments on the Project began in 2016 upon publication of the NOI to prepare an EIS/EIR and will continue throughout the environmental process.

In conjunction with facilitating receipt of comments during the two 30-day public scoping comment periods, various meeting formats, such as open houses, formal presentations, workshops, and

small individual stakeholder briefings were used to provide Project updates, obtain public feedback, and consult with federal, state, and local agencies. In addition, Metro conducted focused outreach efforts with low-income and minority populations including William Mead Homes, as well as with other property owners directly adjacent to, and directly impacted by, the proposed infrastructure.

The public and agency outreach program includes a variety of formal and informal outreach methods:

- In-person and virtual public meetings
- Key stakeholder and community group briefings
- Project development team and agency coordination meetings
- Advertisements
- Email blasts
- Mailings
- Pamphlet distribution
- Website updates
- Open houses
- Pop-up events
- Social media engagements

Many meetings were held in-person and virtually with local officials; public, local, and regional organizations; and government agencies. In-person and virtual meetings were also held with representatives of affected communities within the Project study area, including those communities containing predominantly minority and/or low-income populations. Additional outreach activities were conducted for affected communities with predominantly minority and/or low-income populations, including advertising meetings in Spanish and Chinese languages, creating Project-related materials available in English, Spanish, Chinese (simplified), Japanese, Vietnamese, Korean, and Khmer (Cambodian) languages, and providing interpreters at public meetings.

As part of the Public Outreach Plan, a list of the key stakeholders was developed, including local elected officials, government entities, agency partners, business groups, and community organizations. The parties listed in Table 8-1 were contacted as part of the environmental process. Stakeholders were contacted prior to the scoping meetings with a general Project update, information on the public meeting, and an offer to brief each entity to ensure they were informed about the Project and able to provide comments. Metro engaged the Cities of Los Angeles and Vernon to identify key stakeholders to be involved in the environmental process.

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Agency (NEPA lead agency)	CHSRA
Agency (CEQA lead agency and Local project Sponsor)	Los Angeles Metropolitan Transportation Authority (LA Metro)

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Agency	Amtrak
Agency	Caltrans
Agency	City of Los Angeles • Bureau of Engineering • Cultural Heritage Commission • Department of City Planning • Department of Transportation • Department of Water and Power • Office of Historic Resources • Housing Authority of the City of Los Angeles
Agency	FHWA
Agency	FTA
Agency	LOSSAN
Agency	Los Angeles County Historic Landmarks and Records Commission
Agency	State Historic Preservation Officer
Agency	Southern California Regional Rail Authority (Metrolink)
Agency	United States Environmental Protection Agency
Agency	City of Vernon • Public Works Department • Administration • Business and Industry Commission
Architectural Organization (Section 106 Interested Party)	American Institute of Architects, Los Angeles Chapter
Architectural Organization	Los Angeles Forum for Architecture and Urban Design
Business Organization	Arts District Los Angeles Business Improvement District
Business Organization	Boyle Heights Chamber of Commerce
Business Organization	Central City Association of Los Angeles

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Business Organization	Central City East Association
Business Organization	Chinatown Business Improvement District
Business Organization	Chinese Chamber of Commerce of Los Angeles
Business Organization	Downtown Center Business Improvement District
Business Organization	Lincoln Heights Chamber of Commerce
Business Organization	Little Tokyo Business Association/ Little Tokyo Business Improvement District
Business Organization	Los Angeles Area Chamber of Commerce • Land Use, Construction, and Housing Council • Transportation and Goods Movement Council
Business Organization	Los Angeles Historic Core Business Improvement District
Business Organization	Los Angeles Latino Chamber of Commerce
Business Organization	Olvera Street Merchants Association Foundation
Business Organization	Valley Industry Commerce Association
Business Organization	Vernon Chamber of Commerce
Community Organization	Arts District Community Council of LA
Community Organization	Boyle Heights Neighborhood Council - Planning and Land Use Committee
Community Organization	Downtown Los Angeles Neighborhood Council
Community Organization	El Pueblo de Los Angeles Historical Monument
Community Organization	First 5 Los Angeles

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Community Organization	Historic Cultural Neighborhood Council - Land Use Committee and Board
Community Organization	Lincoln Heights Neighborhood Council
Community Organization	Little Tokyo Community Council - All Committees
Community Organization	Los Angeles County Bicycle Coalition
Community Organization	Los Angeles River Artists and Business Association
Community Organization	Metro Accessibility Advisory Committee
Community Organization	Metro Citizen's Advisory Council
Community Organization	Metro Westside/Central Los Angeles Service Council
Community Organization	William Mead Homes (WMH) Resident Advisory Council (RAC)
Elected Official	US Congressional District 34, Congressman Xavier Becerra
Elected Official	CA State Assembly District 51, Assembly member Jimmy Gomez
Elected Official	CA State Senate District 24, Senator Pro-Tem Kevin De Leon
Elected Official	LA City Council District 1, Councilmember Gil Cedillo
Elected Official	LA City Council District 14 • Councilmember Jose Huizar (until October 15, 2020) • Councilmember Kevin de León (Assumed office October 15, 2020)
Elected Official	City of Los Angeles, Mayor Eric Garcetti
Elected Official	LA County Board of Supervisors, District 1, Supervisor Hilda Solis
Elected Official	LA County Sheriff Jim McDonnell

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Environmental Organization	Los Angeles Regional Collaborative for Climate Action and Sustainability
Environmental Organization	Friends of the Los Angeles River
Environmental Organization	River LA (formerly LA River Revitalization Corporation)
Environmental Organization	Northeast LA Residents for Clean Air Coalition
Historical Society	Chinese Historical Society of Southern California
Historical Society	Historical Society of Southern California
Historical Society	Society of Architectural Historians, Southern California Chapter
Historical Society	Boyle Heights Historical Society
Historical Society	Little Tokyo Historical Society
Historical Society	Los Angeles City Historical Society
Local Museum	Chinese American Museum
Local Museum	Japanese American National Museum
Local Museum	Natural History Museum
Native American Tribe	Gabrieleno Band of Mission Indians – Kizh Nation
Native American Tribe	Gabrielino/Tongva Indians of California Tribal Council
Native American Tribe	Gabrielino-Tongva Nation
Native American Tribe	Gabrielino/Tongva San Gabriel Band of Mission Indians
Native American Tribe	Gabrielino-Tongva Tribe
Native American Tribe	Los Angeles Native American Indian Commission
Native American Tribe	Soboba Band of Luiseno Indians

Table 8-1. Link Union Station Key Stakeholders and Agencies

Category	Stakeholder Name
Native American Tribe	Ti'At Society/Inter-Tribal Council of Pimu
Native American Tribe	Tongva Ancestral Territorial Tribal Nation
Preservation Organization	California Preservation Foundation
Preservation Organization (Section 106 Consulting Party)	Los Angeles Conservancy
Railroad Organization	California State Railroad Museum
Railroad Organization	Lomita Railroad Museum
Railroad Organization	Los Angeles Railroad Heritage Foundation
Railroad Organization	Pacific Railroad Society
Railroad Organization	San Bernardino Railroad Historical Society
Railroad Organization	Southern Pacific Historical & Technical Society
Railroad Organization	The Transit Coalition
Railroad Organization	TRAC
Railroad Organization	Travel Town Planning and Development, Department of Recreation and Parks

Notes:

Caltrans=California Department of Transportation; CHSRA=California High-Speed Rail Authority; FHWA=Federal Highway Administration; FTA=Federal Transit Administration; LOSSAN=Los Angeles – San Diego – San Luis Obispo Rail Corridor; TRAC=Train Riders Association of California

Prior to and after the release of the two NOIs (Section 8.5), several of these key stakeholders were provided briefings on the Project and were encouraged to comment during the NOI comment periods. Each outreach meeting included an overview of the Project history, benefits, components, schedule, and timeline. The Project contact information was provided at each briefing along with Project information materials.

A list of stakeholder outreach meetings organized by date can be found in Table 8-2. A total of 76 meetings were held from April 2016 to October 2018, which included outreach for both the NEPA NOI and CEQA NOP. In October 2018, the joint federal/state environmental document was split into separate EIS and EIR documents. The Metro Board of Directors certified the Final EIR on June 27, 2019. All meetings after this date specifically from 2020 through 2023 address the NEPA process and/or Malabar Yard railroad improvements in City of Vernon. In addition to the stakeholder outreach meetings with the general public and agencies listed in Table 8-2, Metro

also facilitated multiple property owner and business stakeholder meetings with individuals in the cities of Los Angeles (Build Alternative) and Vernon (Malabar Yard railroad improvements). Individual property owner meetings in Vernon are listed in Section 8.1.

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
EIS/EIR Meetings	
April 29, 2016	Los Angeles Conservancy
May 23, 2016	Los Angeles City Council District 14, Councilmember Jose Huizar**
May 25, 2016	LA County Board of Supervisors, District 1, Supervisor Hilda Solis**
May 26, 2016	City of Los Angeles, Mayor Eric Garcetti
May 27, 2016	Los Angeles City Council District 1, Councilmember Gil Cedillo**
June 6, 2016	Los Angeles River Artists and Business Association**
June 14, 2016	Boyle Heights Chamber of Commerce**
June 15, 2016	Historic Cultural Neighborhood Council (Land Use Committee and Board) **
June 16, 2016	Little Tokyo Business Association/Little Tokyo Business Improvement District**
June 16, 2016	Lincoln Heights Neighborhood Council**
June 20, 2016	Los Angeles County Sheriff Jim McDonnell
June 21, 2016	Downtown Los Angeles Neighborhood Council**
June 22, 2016	Los Angeles Area Chamber of Commerce (staff and Transportation and Goods Movement Council) **
June 28, 2016	Friends of the Los Angeles River and River LA
June 30, 2016	Los Angeles Historic Core Business Improvement District
June 30, 2016	Los Angeles Latino Chamber of Commerce**
July 7, 2016	US Congressional District 34, Congressman Xavier Becerra
July 12, 2016	Los Angeles Area Chamber of Commerce (Transportation & Goods Movement Council) **
July 12, 2016	Historic Cultural Neighborhood Council (Land Use Committee and Board) **
July 13, 2016	Downtown Center Business Improvement District

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
July 14, 2016	El Pueblo de Los Angeles Historical Monument**
July 27, 2016	Boyle Heights Neighborhood Council**
July 28, 2016	Chinatown Business Improvement District**
August 2, 2016	Lincoln Heights Chamber of Commerce**
August 3, 2016	CA State Assembly District 51, Assembly Member Jimmy Gomez
August 10, 2016	Friends of the Los Angeles River
August 11, 2016	Central City Association of Los Angeles**
August 12, 2016	Arts District Los Angeles Business Improvement District**
August 15, 2016	Arts District Community Council of LA**
August 23, 2016	River LA
August 30, 2016	Friends of the Los Angeles River and River LA
September 20, 2016	Los Angeles City Council District 14, Councilmember Jose Huizar**
September 21, 2016	Historic Cultural Neighborhood Council, Land Use Committee**
September 21, 2016	Little Tokyo Business Association/Little Tokyo Business Improvement District**
September 22, 2016	Los Angeles City Council District 1, Councilmember Gil Cedillo**
October 4, 2016	Lincoln Heights Chamber of Commerce**
October 14, 2016	Arts District Los Angeles Business Improvement District**
November 8, 2016	Boyle Heights Chamber of Commerce**
November 10, 2016	Boyle Heights Neighborhood Council, Planning and Land Use Committee**

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
November 15, 2016	Community Update Meeting • Boyle Heights Neighborhood Council** • Chinese American Museum** • Chinese Historical Society** • Historic Cultural Neighborhood Council** • Housing Authority of the City of Los Angeles** • Little Tokyo Business Association/Little Tokyo Business Improvement District**
November 30, 2016	Boyle Heights Neighborhood Council**
December 8, 2016	Los Angeles City Council District 14, Councilmember Jose Huizar**
January 10, 2017	VICA Transportation Committee Meeting
January 12, 2017	Los Angeles City Council District 1, Councilmember Gil Cedillo**
January 12, 2017	Housing Authority of the City of Los Angeles**
January 12, 2017	William Mead Homes Resident Advisory Committee**
January 19, 2017	CMAA
March 15, 2017	Burbank TC
April 29, 2017	William Mead Homes Community Listening Workshop**
October 26, 2017	Los Angeles City Council District 1, Councilmember Gil Cedillo**
October 26, 2017	Housing Authority of the City of Los Angeles**
October 26, 2017	William Mead Homes Resident Advisory Committee**
November 2, 2017	LAUS Round Table Workshop • Chinatown Business Improvement District** • El Pueblo de Los Angeles Historical Monument** • Historic Cultural Neighborhood Council** • Housing Authority of the City of Los Angeles** • Little Tokyo Community Council**

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
January 18, 2018	Lincoln Heights Chamber of Commerce**
January 18, 2018	Little Tokyo Business Association/Little Tokyo Business Improvement District**
January 18, 2018	Arts District Los Angeles Business Improvement District**
February 12, 2018	Housing Authority of the City of Los Angeles**/Los Angeles River Artists and Business Association**, Historic Cultural Neighborhood Council (Land Use Committee and Board)**
May 2, 2018	LAUS Round Table Workshop • Chinatown Business Improvement District** • Little Tokyo Business Association/Little Tokyo Business Improvement District**
May 24, 2018	City of Los Angeles, Mayor Eric Garcetti, Council District 14, and Los Angeles County Board of Supervisors, District 1
May 30, 2018	Housing Authority of the City of Los Angeles**
June 5, 2018	William Mead Homes Resident Advisory Committee**
June 21, 2018	William Mead Homes Resident Advisory Committee**
June 21, 2018	Housing Authority of the City of Los Angeles**
June 21, 2018	Los Angeles City Council District 1, Councilmember Gil Cedillo**
July 13, 2018	Los Angeles City Council District 1, Councilmember Gil Cedillo**
July 14, 2018	Union Station Train Fest
August 16, 2018	Train-to-Table Farmer's Market
September 13, 2018	Boyle Heights Neighborhood Council, Planning and Land Use Committee**
September 14, 2018	Arts District Los Angeles Business Improvement District**
September 17, 2018	HSR Open House
September 26, 2018	Metro Link US Open House
September 30, 2018	CicLAvia
EIR Only	
October 10, 2018	Metro Westside/Central Los Angeles Service Council

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
October 22, 2018	El Pueblo de Los Angeles Historical Monument**
October 24, 2018	Boyle Heights Neighborhood Council, Planning and Land Use Committee**
October 24, 2018	Metro Citizen's Advisory Council**
November 8, 2018	Metro Accessibility Advisory Board Meeting**
November 15, 2018	Chinatown Business Improvement District**
November 28, 2018	Los Angeles Area Chamber of Commerce (Land Use/Construction and Housing/Transportation and Goods Movement Council)**
November 30, 2018	LAUS Roundtable Workshop • Little Tokyo Business Association/Little Tokyo Business Improvement District** • Little Tokyo Community Council**
November 30, 2018	Central City Association of Los Angeles**
December 1, 2018	Union Station Holiday Festival and Market
December 2, 2018	CicLAvia Heart of LA
December 5, 2018	William Mead Homes Resident Advisory Committee**
December 5, 2018	Los Angeles City Council District 1, Councilmember Gil Cedillo**
December 5, 2018	Housing Authority of the City of Los Angeles**
December 6, 2018	Board Report Meeting
December 12, 2018	American Institute of Architects
January 7, 2019	Los Angeles Regional Collaborative for Climate Action and Sustainability
January 9, 2019	William Mead Homes Resident Advisory Committee**
January 9, 2019	Housing Authority of the City of Los Angeles**
January 10, 2019	Little Tokyo Community Council – All Committees**
January 11, 2019	William Mead Homes Resident Advisory Committee**, Housing Authority of the City of Los Angeles**, Los Angeles City Council District 1, Councilmember Gil Cedillo**
January 17, 2019	Little Tokyo Community Council – All Committees**

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
January 18, 2019	Christian Life Assembly Faith Event**
January 22, 2019	Union Station Pop Up
January 26, 2019	William Mead Homes Community Workshop**
January 29, 2019	Link US Public Hearing
March 13, 2019	Central City Association of Los Angeles
March 27, 2019	Los Angeles City Council District 1, Councilmember Gil Cedillo**
April 17, 2019	Little Tokyo Business Association/Little Tokyo Business Improvement District**
April 23, 2019	Little Tokyo Community Council**
May 4, 2019	Union Station 80th Anniversary
May 9, 2019	Metro Accessibility Advisory Committee**
May 13, 2019	First 5 LA**
May 29, 2019	Metro Central LA Roundtable**
June 3, 2019	Little Tokyo Business Association/Little Tokyo Business Improvement District**
June 06, 2019	Final EIR Open House
EIS Only	
April 22, 2020	City of Vernon
July 8, 2020	City of Vernon
August 8, 2020	City of Vernon
August 13, 2020	City of Vernon Business and Industry Commission
September 2, 2020	City of Vernon
October 7, 2020	City of Vernon
October 8, 2020*	Revised NOI Scoping Meeting
December 2, 2020*	City of Vernon
January 20, 2021*	City of Vernon

Table 8-2. Public Outreach Meeting Summary

Date Held	Stakeholder Name
February 10, 2021*	Vernon Business Stakeholder Meeting
February 11, 2021*	City of Vernon Business and Industry Commission
March 3, 2021*	City of Vernon
EIS/SEIR	
June 27, 2023*	Housing Authority of the City of Los Angeles**
August 14, 2023*	Housing Authority of the City of Los Angeles**
May 9, 2024*	City of Vernon Business and Industry Commission – Project Update Meeting
May 13, 2024*	William Mead Homes/ Housing Authority of the City of Los Angeles – Project Update Meeting
July 9, 2024*	Draft EIS/SEIR Open House and Public Hearing
September 10, 2024	City of Vernon
October 23, 2024	City of Vernon
November 6, 2024	City of Vernon
November 13, 2024	City of Vernon
November 20, 2024	City of Vernon
December 4, 2024	City of Vernon
January 7, 2025	Los Angeles County Board of Supervisors, District 4, Supervisor/Metro Board Chair Janice Hahn
January 8, 2025	City of Vernon
February 12, 2025	City of Vernon
February 20, 2025	City of Vernon
February 20, 2025	Little Tokyo Business Association/Little Tokyo Business Improvement District**
March 6, 2025	City of Vernon
March 26, 2025	City of Vernon Community Meeting and Open House
April 7, 2025	Los Angeles County Board of Supervisors, District 4, Supervisor/Metro Board Chair Janice Hahn

Table 8-2. Public Outreach Meeting Summary	
Date Held	**Stakeholder Name**
May 15, 2025	The Office of Los Angeles County Metro Board Chair Supervisor Hahn and City of Vernon
June 17, 2025	City of Vernon City Council
June 23, 2025	City of Vernon Chamber of Commerce

Notes:

****=Meetings after Revised NOI was posted***

*****=Representing minority and/or low-income populations***

EIR=environmental impact report; EIS=environmental impact statement; LAUS=Los Angeles Union Station; Link US=Link Union Station; Metro=Los Angeles County Metropolitan Transportation Authority; NOI=notice of intent; U.S.=United States; TBD=to be determined

8.3 Section 106 Consultation

Section 106 affords consulting Native American Tribes, consulting parties, the Advisory Council on Historic Preservation, and SHPO a reasonable opportunity to comment on any undertaking that would adversely affect historic properties. Consultation with Native American tribes, other consulting parties, and SHPO occurs throughout the Section 106 process. The purpose of consultation is to identify cultural resources and discuss concerns relating to the Project's potential effects on cultural resources. Information is sought from individuals and organizations likely to have knowledge of and interest in cultural resources in the APE. The Advisory Council on Historic Preservation can be invited to participate in the Section 106 review process by any of the consulting parties and typically assists in identifying or negotiating appropriate treatments for the resolution of adverse effects on historic properties that cannot be avoided through Project redesign.

Section 106 consultation to date is documented in the *Link US Historic Property Survey Report*, Link US *Supplemental Cultural Resource Report*, *Link US Second Supplemental Cultural Resource Report*, and *Link US Finding of Effect Report* (Appendix M of this EIS). FRA formally initiated consultation with SHPO under Section on August 9, 2016. In accordance with 36 CFR Part 800.4(a)(3), on August 24, 2016, invitations to consult regarding the identification and evaluation of historic properties in the Link US APE were sent to Native American tribes and other interested parties.

In addition, the FRA and Metro hosted a tribal information meeting at the Metro Headquarters in Los Angeles on September 19, 2016. The tribal information meeting was intended to provide information about the Project including status and schedule, as it relates to the cultural resource investigations for the Project. None of the invitees attended the meeting.

With the assignment of FRA's environmental responsibilities under NEPA to CHSRA, Section 106 consultation for the Project is now continued by CHSRA. Section 106 consultation specific to

Project effects and resolution of adverse effects is currently ongoing with federal, state, and local government agencies, Native American tribes, and other interested groups.

8.3.1 Tribal Outreach and Coordination

Responses to consult under Section 106 were received from one federally recognized Native American Tribe—the Soboba Band of Luiseño Indians—and three California Native American Tribes on the contact list maintained by the California Native American Heritage Commission: the Gabrieleño Band of Mission Indians – Kizh Nation, Gabrielino/Tongva Nation, and the Tongva Ancestral Territorial Tribal Nation.

After reviewing further Project information, the Soboba Band of Luiseño Indians asked that it be informed if human remains are encountered during construction, but otherwise concluded Section 106 consultation on February 1, 2017, via email. The Tongva Ancestral Territorial Tribal Nation previously consulted on the Project; however, the Tribe no longer participates in Project consultation.

Section 106 consultation is ongoing with the following Native American tribes:

- Gabrieleño Band of Mission Indians – Kizh Nation
- Gabrielino/Tongva Nation

8.4 Notice of Intent, Revised Notice of Intent, and Public Information Materials

8.4.1 2016 Notice of Intent

In 2016, the NOI was distributed to the public through mail and advertisements. The document was also available on the Project website. A joint notice was mailed to approximately 23,000 stakeholders (residents, businesses, and property owners) within a 1-mile radius of LAUS on May 27, 2016. The combined notice included English, Spanish, Chinese (simplified), and Japanese text offering translated versions of the documents upon request. A combined notice was also published in several local, multicultural publications in different languages, including the following: *LA Downtown News* (English), *La Opinión* (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.

Prior to the NOI meeting, public meeting notifications were distributed through several methods. On May 16, 2016, a save-the-date tri-fold mailer (in English, Spanish, and Chinese) was delivered to over 23,000 stakeholders who live or work within a 1-mile radius of LAUS to notify them of the Public scoping meeting and Open House. The mailer was also sent to a list of over 200 key Project stakeholders, which included agency partners, elected officials, key community organizations, institutions, and businesses. In addition to the mailer, two e-blasts were sent out to the Project's e-blast list of approximately 1,800 stakeholders. The first save-the-date e-blast was emailed to stakeholders on May 12, 2016, and the second reminder e-blast was emailed on June 1, 2016. A

third email blast was also sent on June 6, 2016, to remind stakeholders of the NOI comment period and how to submit comments. Individual calls were made to the Project's top 30 key stakeholders, which included elected officials, business organizations, and community organizations.

8.4.2 2020 Revised Notice of Intent

The Revised NOI was released in the FR on September 17, 2020. On September 22, 2020, a save-the-date tri-fold mailer in (English, Spanish, Chinese, Japanese, and Korean) was sent to 6,337 stakeholders who live or work within a 1,000-foot radius of LAUS and the Malabar Yard railroad improvements. The mailer was also sent to a list of over 38 key Project stakeholders, which included agency partners, elected officials, key community organizations, institutions, and businesses.

CHSRA and Metro advertisements invited the public to attend the virtual scoping meeting for the Revised NOI, provided information regarding the meeting time and place, meeting format, the 30-day public scoping period, the publication of the Revised NOI, Project website address, and instructions for submitting public comments or requesting special accommodations. The virtual scoping meeting was also promoted via Metro Press Release as well as through Metro's The Source article on October 7, 2020.

A summary of the publication dates and notice types for each newspaper is provided in Table 8-3.

Table 8-3. Link Union Station Notice Of Intent Advertising

Newspaper	Publication Date	Notice Type
LA Downtown News	May 30, 2016	Joint NOI/NOP Notice
La Opinión	May 27, 2016	Joint NOI/NOP Notice
Rafu Shimpo	May 26, 2016	Joint NOI/NOP Notice
Chinese LA Daily News	May 27, 2016	Joint NOI/NOP Notice
Los Angeles Times	September 21, 2020	Release of RNOI/Scoping Meeting
LA Downtown News	September 21, 2020	Release of RNOI/Scoping Meeting
Los Angeles Daily News	September 21, 2020	Release of RNOI/Scoping Meeting
La Opinión	September 21, 2020	Release of RNOI/Scoping Meeting
Rafu Shimpu	September 22, 2020	Release of RNOI/Scoping Meeting
Chinese LA Daily News	September 21, 2020	Release of RNOI/Scoping Meeting

Notes:
LA=Los Angeles; NOI=Notice of Intent; NOP=Notice of Preparation; RNOI=Revised Notice of Intent

8.4.3 Public Information Materials

Public information materials were created for the scoping processes to introduce the Project to the public and facilitate discussion at the scoping meetings. A Project fact sheet was developed that includes a Project overview, history, components, benefits, map, timeline and contact information. A document containing FAQs was also developed to answer common project questions. Fact sheets and FAQs were distributed at all Project briefings and both scoping meetings and were available in English, Spanish, Chinese (simplified), and Japanese. Public information materials, including the scoping notice, fact sheet and FAQs, were also distributed throughout LAUS to individual patrons and in the community at local public facilities (libraries, recreation centers, etc.). For William Mead Homes, door-to-door noticing was also conducted to disseminate the flyers and meeting invitations.

8.4.4 Scoping Meetings

Notice of Intent

As part of the community outreach process for the Project, a scoping meeting was held to educate the public on the Project and offer an opportunity to provide comments on the Project purpose and need, concepts under consideration, and issues and areas of concern to be considered in the EIS. During the NOI comment period, the scoping meeting was held on June 2, 2016, from 6:00 to 8:00 PM on the first floor plaza of Metro Headquarters at One Gateway Plaza, Los Angeles, CA 90012. Prior to the scoping meeting, information regarding the opportunity for public comment were made available through a variety of sources, including advertisements, mail, email blasts, and stakeholder briefings.

Attendees were provided copies of the Project fact sheet, FAQs, comment sheet, meeting agenda, venue layout with stations, and copies of the NOI. The comment sheet included English, Spanish, and Chinese (simplified) languages. Spanish and Chinese interpretation services were also offered at the meeting and interpretation was available for other languages upon request. The fact sheet and FAQs were also provided in English, Spanish, Chinese (simplified), and Japanese. Display boards were located around the meeting space for stakeholders to walk around, speak to and ask questions to Project and Metro staff, and view Project information. The display boards included information on the following topics:

- Project need;
- Project location;
- Project history;
- Project benefits;
- Project overview;
- Agency coordination;
- Environmental process;

- Project timeline;
- Ways to provide public comments; and
- Project contact information.

The stations located around the venue covered the topics summarized in Table 8-4.

Table 8-4. Link Union Station Scoping Meeting Stations

Station	Description
Station 1: Project Need	Provided information on the purpose and need for the Project
Station 2: Project History and Project Location	Showed where Link US is located and its relation to LAUS and the surrounding communities
Station 3: Project Benefits	Outlined the benefits that Link US will provide including improved air quality, reliable travel alternatives, and increased rail service capacity
Station 4: Project Overview and Initial Concepts	Provided an overview of the project components and five initial concepts
Station 5: Process and Timeline	Highlighted the major project milestones as part of the NEPA and CEQA processes

Notes:
CEQA=California Environmental Quality Act; LAUS=Los Angeles Union Station; Link US=Link Union Station; NEPA=National Environmental Policy Act

The meeting began at 6:00 PM with an open house format, allowing people to sign-in and view the Project display boards presented by Project and Metro staff. At 6:30 PM, Metro presented on the Project to the audience of 38 stakeholders covering the topics found at the various stations. At 7:00 PM, the open house resumed until the meeting concluded at 8:00 PM.

Comments were received during the NOI comment period through the Project telephone information line, email, mail, and comment cards submitted at the scoping meeting. Comment cards were made available to all attendees to provide input on what should be studied during the environmental review process. Three comment cards were submitted at the scoping meeting and 19 other comments were submitted through other means including letters, paper and online comment forms, information line, and email.

Revised Notice of Intent

On October 8, 2020, during the revised NOI comment period, CHSRA and Metro held a virtual public scoping meeting, from 6:00 to 8:00 PM which was through a live Zoom virtual presentation accessible via LinkUnionStation.com. The meeting was held virtually due to COVID-19 pandemic and stay-at-home orders within Los Angeles County. During the virtual public scoping meeting, simultaneous live meetings with interpreters were offered concurrent with the English presentation

in Spanish, Chinese (simplified), and Japanese, concurrent with the main meeting in English. Video recordings and PDFs of the translated PowerPoint presentations were made available to the public via the virtual meeting room. ADA accommodations and translations were made available by calling a designated information phone line (213-922-2524) or through California Relay Service at 711 at least 72 hours in advance.

The agenda for the meeting included the following events:

- 6:00 to 6:30 PM: Live Presentation
- 6:30 to 8:00 PM: Link US Public Comments (Accepted digitally and orally)

At 6:00 PM, Danielle Valentino, Metro's Community Relations Manager, started facilitating the presentation. Mrs. Valentino went over the meeting agenda and schedule before handing it over to Vincent Chio, Metro's Director of Program Management and Regional Rail, who provided the virtual Link US presentation covered the following topics:

- Project Introduction and Background
- NEPA Process
- Link US Project Overview
- Malabar Yard Railroad Improvements
- Project Area Overview (City of Vernon)
- Revised NOI – BNSF Malabar Yard
- 49th Street Closure (City of Vernon)
- Traffic Study
- 49th Street Closure – Proposed Traffic Circulation Routes
- Link US Contact Information
- How to Submit Comments

At the conclusion of the meeting, attendees were encouraged to share comments and questions orally with the Project team and encouraged to submit comments via the comment form provided at the comment station in the virtual meeting room, or using the other methods made available, including the following:

- Project information/telephone line (213-922-2524)
- Electronic comment form submissions from the virtual meeting room
- U.S. mail
- Project email address (linkunionstation@metro.net)

CHSRA and Metro solicited written and oral comments on the Malabar Yard railroad improvements addressed in the Revised NOI in multiple formats throughout the 30-day public comment period. CHSRA and Metro also received written and oral comments during the virtual public scoping meeting held on October 8, 2020. In total, 81 comment submissions were received, most of which were made during the virtual public scoping meeting, comments summary available in Appendix A, *NEPA Noticing and Scoping Summary Reports*, of this EIS.

8.5 Alternatives Evaluation Process

Public outreach throughout the environmental process from 2016 to 2023 was conducted to ensure project information and updates on the alternatives analysis process (including changes and/or removal of major components) were provided to key community organizations and elected officials prior to and during any presentations to the Metro Board of Directors.

The Project history, background, and reasons for changes to major Project components are described in the *Link US NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix B of this EIS). Additionally, within Section 1.0, Introduction of the *Link US Environmental Evaluation of Malabar Yard Mitigation* (Appendix Q of this EIS), the alternatives evaluation process is outlined to discuss how the design options considered for each of the Malabar Yard railroad improvements were identified as a result of substantial community feedback received in the City of Vernon. Community feedback on the Malabar Yard railroad improvements was received following the publication of the Revised NOI in October 2020.

8.6 Draft EIS/SEIR Distribution

As part of the outreach efforts conducted to date, a stakeholder database was compiled (Appendix R of this EIS, Coordination and Outreach Plans). The stakeholder database includes agency partners, government organizations and elected officials, businesses, associations, community organizations, as well as stakeholders in the affected local jurisdictions (City of Los Angeles and City Vernon). The stakeholder database represents the individuals that are likely to be interested in or affected by the Project and is used to distribute public meeting notices, save-the-date mailers and invitations, e-blasts, and invitations for one-on-one stakeholder briefings. The database is continually updated and will be maintained throughout the public outreach and environmental review process to reflect current stakeholder contact information.

Metro and CHSRA circulated the Draft EIS/SEIR for a 45-day public comment period beginning on June 21, 2024, through August 9, 2024. Public noticing of the Draft EIS/SEIR was distributed prior to and during the 45-day public comment period to affected local jurisdictions, State and federal agencies, tribes, community organizations, and individuals identified in the stakeholder database (Appendix R of this EIS). Public notice of the Draft EIS/SEIR was also be included in local newspapers in areas potentially affected by the Project.

This distribution of public noticing of the Draft EIS/SEIR 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 cooperating and participating agencies.

8.7 Comments Requested

During the 45-day public comment period, written comments were sent to the following address:

Los Angeles County Metropolitan Transit Authority

One Gateway Plaza, MS 99-18-2

Los Angeles, CA 90012

Attn: Carlos J. Montez, Deputy Executive Officer

Comments were also be provided via online comment form at https://www.linkunionstation.com/ or via email. Metro and CHSRA responded to all comments received in the Final EIS (see Final EIS Volume III).

Open House and Public Hearing: After the release of the Draft EIS/SEIR and publication of a Notice of Availability in the FR/posting of the Notice of Availability with the County of Los Angeles, Metro and CHSRA held an open house and public hearing to explain the Project and the Draft EIS/SEIR analysis. All stakeholders who signed up to receive information at meetings, public events, on the Project website, or call the information line, are added to the database and were notified of the open house and public hearing. Announcement of the open house and public hearing date and location is provided in the Notice of Availability and was posted on CHSRA's website: https://hsr.ca.gov/programs/environmental-planning/local-agency-sponsored-projects and on https://www.linkunionstation.com/. Comments from the public were submitted at the public hearing via comment card or court reporter. Information regarding the open house and public hearing is provided below.

Date: July 9, 2024

Time: 6:00 – 8:00 PM

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

Once all comments were assembled and reviewed, responses were prepared to address significant environmental issues that have been raised in the comments. The responses are included in the Final EIS (see Final EIS Volume III).

8.7.1 Repository Locations

The Draft EIS/SEIR was made available on Metro's website and at the following repository locations:

- LAUS/Metro Library – One Gateway Plaza, 15th Floor, Los Angeles, CA 90012
- LAUS/Metro Records Management Center – One Gateway Plaza, Plaza Level, Los Angeles, CA 90012
- High Speed Rail Authority Headquarters, 770 L Street, Suite 620 Sacramento, CA 95814
- Los Angeles Central Library – 630 West 5th Street, Los Angeles, CA 90071
- Chinatown Branch Library – 639 North Hill Street, Los Angeles, CA 90012
- Benjamin Franklin Branch Library – 2200 East 1st Street, Los Angeles, CA 90033
- Lincoln Heights Branch Library – 2530 Workman Street, Los Angeles, CA 90031
- Little Tokyo Branch Library – 203 South Los Angeles Street, Los Angeles, CA 90012
- William Mead Homes Administrative Office, 1300 Cardinal Street, Los Angeles, CA 90012
- Care First Village Administrative Office, 1060 North Vignes Street, Los Angeles, CA 90012
- Vernon City Hall, 4305 South Santa Fe Avenue, Vernon, CA 90058

9.0 Build Alternative Design Option

9.1 Introduction

This chapter provides a detailed description of the proposed design modifications to the Build Alternative (Build Alternative Design Option) including design variations, refinements, and reductions that are addressed in the Final EIS.

The Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the SHPO and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.

This chapter provides a detailed description with figures and illustrative details to convey the key components associated with the Build Alternative Design Option and support the environmental evaluation of the Build Alternative Design Option. Specifically, this chapter provides an assessment of proposed design modifications to describe how they qualify as a minor variation to the Build Alternative.

The preliminary engineering plans for the infrastructure improvements that are part of the interim condition, also referred to as Phase A (Build Alternative Design Option - Phase A Plan Sheets) and a conceptual engineering plan sheet of the infrastructure improvements that are part of the full build-out condition, also referred to as Phase B (Build Alternative Design – Phase B Plan Sheet) are included in Appendix B of this EIS. This chapter includes narrative details with comparative graphics to inform what the differences are and where changes would occur. This chapter also includes the existing figures of the Project components associated with the Build Alternative that remain applicable to the Build Alternative Design Option to provide illustrative details of the project components considered for the full build-out condition (elevated rail yard and concourse-related improvements).

Specifically, this chapter presents a comparative environmental evaluation of the Build Alternative Design Option to the Build Alternative to simply identify similarities and differences, where applicable. The analysis presented in this chapter addresses how the Build Alternative Design Option:

- Is consistent with applicable provisions of the purpose and need related to the track alignment
- Is within the spectrum of alternatives and impacts discussed in the EIS (between the No-Build Alternative and the Build Alternative), and

- Would avoid and reduce the magnitude and intensity of environmental effects that were previously identified for the Build Alternative.

As discussed more in Section 9.4.1, the Build Alternative Design Option qualifies as a minor variation of the Build Alternative for the following reasons:

1. The variations to proposed infrastructure improvements occur within the project footprint of the Build Alternative.
2. The variations reduce the size of proposed infrastructure; however, would not have substantially different project features or changes to the characteristics of the major project components that are different than the Build Alternative. The variations to the Build Alternative still include lead tracks north of LAUS, elevated platforms with concourse-related improvements at LAUS, and run-through tracks south of LAUS while meeting all provisions of the purpose and need.
3. The variations do not include major infrastructure elements that would make it a different alternative (i.e., dedicated lead tracks for HSR trains north of LAUS, double-deck platforms or new platform at LAUS, loop track[s] south of LAUS, or shared lead tracks for freight and intercity trains at BNSF West Bank Yard).

Pursuant to NEPA Guidelines, a Lead Agency must prepare a Supplemental EIS for a previously-certified EIS when any of the criteria set forth in NEPA Guidelines Section 40 C.F.R. 1502.9(c) would occur. The Build Alternative Design Option, as discussed and evaluated in this chapter of the Final EIS, would not result in substantial changes to the proposed action that are relevant to environmental concerns and there are not any significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. Therefore, preparation of a Supplemental EIS is not required.

9.2 Purpose and Need – Consistency Review

The Build Alternative Design Option is consistent with all provisions of the purpose and need as summarized below:

- The Build Alternative Design Option increases regional and intercity rail service capacity of LAUS
- The Build Alternative Design Option improves schedule reliability at LAUS through the implementation of a run through tracks configuration and eliminates the current stub end tracks configuration while preserving current levels of freight rail operations
- The Build Alternative Design Option accommodates the planned HSR system in Southern California
- The Build Alternative Design Option increases passenger/pedestrian capacity

- The Build Alternative Design Option enhances the safety of LAUS through the implementation of a new passenger concourse meeting the multi-modal transportation demands at LAUS

The need for the Project remains the same and is generated by the forecasted increase in regional population and employment; implementation of federal, state, and RTPs that provide for increased operational frequency for regional and intercity trains; and introduction of the planned HSR system in Southern California. The Build Alternative Design Option includes localized operational, safety, and accessibility upgrades in and around LAUS to meet existing demand and future growth.

9.3 Reconsideration of Track Alignment Alternatives with 8 Run-Through Tracks in the Final EIS

All track alignment alternatives considered during preparation of the Draft EIS/SEIR included a run-through track configuration that would achieve the forecasted increase in train movements on dedicated tracks south of LAUS. In collaboration with rail operators, Metro determined that a shared tracks configuration, as compared to dedicated tracks configuration, would also support future passenger operations south of LAUS. Metro also determined that an alignment with fewer than ten run-through tracks would not cause potential constraints or limits on operational flexibility that Metro had initially planned for when Track Alignment Alternative Screening Criteria 1 was developed. This is because run-through service at LAUS would facilitate enhanced capacity and operational benefits at LAUS, even with fewer than ten run-through tracks.

Screening Criterion 1 is retained in the Final EIS; however, to properly analyze and consider the benefits of alternatives with fewer than ten run-through tracks, including the proposed design modifications and reductions of the Build Alternative Design Option, the screening method was modified from pass/fail (Yes or No) to no-longer-pass/fail. In addition, all other track alignment alternatives with 8 run-through tracks, previously rejected from further consideration for not meeting Track Alignment Alternative Screening Criteria 1, were reconsidered to determine if they would qualify for detailed evaluation in the Final EIS. The reconsideration of alternatives analysis addressed:

- Purpose and Need Consistency
- Ability to Meet Other Screening Criteria
- Additional Environmental Considerations (based on identified impacts acknowledged in the Final EIS)

As summarized below, Track Alignment Alternatives 2, 5, 6, and 10, all of which include 8 run-through tracks, fulfill the provisions of the purpose and need; however, they do not meet other specified criteria and would result in greater environmental impacts. For these reasons, Track Alignment Alternatives 2, 5, 6, and 10 do not qualify for further consideration in the Final EIS.

- **Track Alignment Alternative 2: 4 Regional/Intercity Rail Run-Through Tracks + 4 HSR Run-Through Tracks**
    - ***Purpose and Need -*** Track Alignment Alternative 2 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 2 accommodates the planned HSR system; however, it does not include construction of common infrastructure from LAUS to First Street.
    - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 2 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.
    - ***Additional Environmental Considerations -*** Track Alignment Alternative 2 includes two dedicated HSR lead tracks in the throat segment, which requires partial acquisition of the William Mead Homes, which is a public housing complex with a significant low-income/minority resident population, Section 106 historic property, and Section 4(f) resource. Constructing railroad tracks outside of the existing railroad ROW closer to the residences would introduce additional noise, vibration, and air quality impacts to the community, and would cause greater impacts on historic property and Section 4(f) resources. Track Alignment Alternative 2 requires permanent realignment of the Gold Line and also includes a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101. These additional components increase construction-related impacts (Traffic, Air Quality, Noise) and would cause greater impacts to the local community.
- **Track Alignment Alternative 5: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS)**
    - ***Purpose and Need -*** Track Alignment Alternative 5 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 5 accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
    - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 5 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.
    - ***Additional Environmental Considerations -*** Similar to Track Alignment Alternative 2, Track Alignment Alternative 5 requires partial acquisition of the William Mead Homes, permanent realignment of the Gold Line and also includes a loop track that requires six additional property acquisitions, realignment of Commercial Street,

lowering of Center Street, and closure of Vignes Street south of US 101; thereby resulting in a greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community.

- **Track Alignment Alternative 6: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with dedicated lead tracks north of LAUS)**
  - ***Purpose and Need -*** Track Alignment Alternative 6 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). Track Alignment Alternative 6 accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
  - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 6 does not meet Screening Criteria 2 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS.
  - ***Additional Environmental Considerations -*** Track Alignment Alternative 6 does not require encroachment into the William Mead property or permanent realignment of the Gold Line, but does include a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes Street south of US 101, thereby resulting in a greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community.
- **Track Alignment Alternative 10: 6 Regional/Intercity Rail Run-Through Tracks + 2 HSR Run-Through Tracks (with HSR Double Decked).**
  - ***Purpose and Need -*** Track Alignment Alternative 10 is consistent with all applicable provisions of the purpose and need related to the track alignment, with the exception of preserving current levels of freight rail operations (does not meet Criterion 2). This track alignment alternative accommodates the planned HSR system; however, it only includes two HSR run-through tracks and does not include construction of common infrastructure from LAUS to First Street.
  - ***Criterion Analysis -*** As shown in Table 2-1, Track Alignment Alternative 10 does not meet Screening Criterion 2 or 5 because it includes shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard and stacked platforms at LAUS rail yard. This configuration would potentially impact intermodal freight operations and Amtrak on-time performance to and from LAUS and would not meet applicable design criteria (vertical grade and curvature requirements).
  - ***Additional Environmental Considerations -*** Similar to Track Alignment Alternatives 2 and 5, Track Alignment Alternative 10 requires partial acquisition of the William Mead Homes and includes a loop track that requires six additional property acquisitions, realignment of Commercial Street, lowering of Center Street, and closure of Vignes

Street south of US 101. Alternative 10 also includes an additional bridge over US-101 because an HSR platform would be stacked above the Gold Line; thereby resulting in an even greater level of construction-related impacts (Traffic, Air Quality, Noise) and greater impacts to the local community than Track Alignment Alternatives 2 and 5.

The analysis above demonstrates that other track alignment alternatives with 8 run-through tracks would not fulfill the applicable provisions of the purpose and need, would conflict with other screening criterion, and result in greater environmental impacts. Therefore, Track Alignment Alternatives 2, 5, 6, and 10 would not qualify for detailed consideration in the Final EIS. The Build Alternative Design Option includes 8 run-through tracks, is consistent with all applicable provisions of the purpose and need, meets all other criteria, and would avoid and reduce the magnitude and intensity of Project-related environmental effects. For these reasons, a detailed consideration of the Build Alternative Design Option and the associated environmental effects is included in this EIS. The Final SEIR certified by the Metro Board of Directors on October 23, 2025 includes the CEQA analysis of the refinements to the CEQA Modified Proposed Project and Chapter 9 includes the NEPA analysis of the Build Alternative Design Option.

9.4 Summary of Proposed Design Modifications (Build Alternative Design Option)

The Draft EIS/SEIR was distributed and made available for a 45-day public comment period from June 21, 2024, through August 9, 2024, pursuant to CEQA Guidelines Section 15105 and NEPA 40 Code of Federal Regulations (CFR) 1502.19. As discussed in Section 9.1 above, the Build Alternative Design Option was developed based on new information from public comments received during the 45-day public comment period related to historic preservation (Volume III, Comments: IND 3-1, IND 5-1, IND 58-2, IND 63, IND 94-1, IND 112-1, and IND 117-3), comments from the SHPO and consulting parties as part of the Section 106 process related to historic preservation of LAUS, and new information from the engineering design process that provide opportunities to reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of environmental effects as compared to the Build Alternative, and reduce cost in a manner that would still allow Metro to meet all provisions of the purpose and need.

These design modifications that are part of the Build Alternative Design Option qualify as a minor variation of the Build Alternative because the variations reduce the size of proposed infrastructure, avoid and reduce the magnitude and intensity of Project-related environmental effects, and would not substantially alter the overall environmental effects of the Build Alternative previously identified. The Build Alternative Design Option could be selected for approval by decision makers upon review and consideration of the content in this chapter and the remainder of the EIS.

The design modifications associated with the Build Alternative Design Option are summarized below and shown on Figure 9-1.

- ***Retaining the Existing Vignes Street Bridge Instead of Replacing it –*** The Build Alternative Design Option does not require replacement of the Vignes Street Bridge

because a run-through track alignment with 8 total run-through tracks requires a reduced raise of the rail yard. The Build Alternative Design Option does maintain space for a future sixth lead track in the throat area. In conjunction with the removal of Garden Tracks, the throat tracks supported by the Vignes Street Bridge would be configured to accommodate space for one new lead track over the existing bridge. South of the Vignes Street Bridge, the westernmost lead tracks through the throat area would be raised to tie into the raised platforms and associated Tracks 3 through 10 at the LAUS Rail Yard.

- ***Fewer Raised Platforms and Reduced Extent of Elevated Rail Yard*** – The Build Alternative Design Option would include an elevated rail yard; however, only four platforms would be raised nine feet to twelve feet higher than the existing condition, instead of six platforms raised to 15 feet as previously proposed. Platforms 2 through 5 and eight corresponding platform tracks (Tracks 3 to 10) would be raised as part of the Build Alternative Design Option. The reduced extent of the elevated rail yard would still allow for the connecting run-through track viaduct to meet vertical clearance requirements for the El Monte Busway and US-101 (16.5 feet minimum vertical clearance per Caltrans standards). The platform and track allocation for the Build Alternative Design Option would be modified because Platforms 2 and 5 would be allocated for SCRRA and Amtrak for regional/intercity rail trains and Platforms 3 and 4 (and Tracks 5 through 8) would be allocated to CHSRA for CHSRA HSR trains – Platforms 3 and 4 would be constructed to meet level-boarding requirements. Platforms 6 and 7 would remain at existing grade with stub-end tracks and would continue to be allocated for SCRRA and Amtrak long distance trains.

  The reduced extent of the elevated rail yard as part of the Build Alternative Design Option also decreases the length required for the elevated rail yard. As discussed above, lead tracks through the throat area would begin south of the Vignes Street Bridge thereby allowing for the existing Vignes Street Bridge to remain in place.

- ***Partial Reconstruction of Cesar Chavez Avenue Bridge*** – The Build Alternative Design Option would include partial reconstruction of the portion of the existing railroad bridge over Cesar Chavez Avenue, instead of a full reconstruction as previously proposed. As the rail yard would only be partially elevated, only the western portion of the bridge that would support the four new platforms is required to be reconstructed.

- ***Reduced Extent of Concourse-Related Improvements*** – The Build Alternative Design Option would include several reductions to the extent of concourse-related improvements, as summarized below.

  - *Removal of West Plaza* and West Plaza Canopy – The West Plaza, as well as modifications to the baggage handling operations and ticketing services within the Amtrak building, would be removed as part of the Build Alternative Design Option. No modifications to the exterior loading dock or parking area outside of the Amtrak building would be required.

- *Reduced Width of Expanded Passageway* – The width of the expanded passageway would be 100-feet-wide for the Build Alternative Design Option instead of 140-feet-wide, as previously proposed.
- *Reduced Canopy Coverage and Change in Type* – Removal of the West Plaza would no longer require canopy coverage for this area. As part of the Build Alternative Design Option, individual canopies would extend up to 25 feet above the 4 new platforms. Rail Yard Canopy Design Option 2 (Grand Canopy over Rail Yard) is not feasible to be implemented in conjunction with the Build Alternative Design Option because all platforms would be required to be raised to support a Grand Canopy. Furthermore, the Grand Canopy was planned to connect to the West Plaza Canopy, which was also removed from the Build Alternative Design Option.

- ***Fewer Run-Through Tracks on Single Aerial Viaduct from LAUS to West Bank of Los Angeles River*** – The Build Alternative includes 10 run-through tracks for regional/intercity trains and HSR trains and the Build Alternative Design Option would include 8 run-through tracks for regional/intercity trains and HSR trains. As part of the Build Alternative Design Option, a single aerial viaduct would support the run-through tracks, instead of a combination of viaducts and retained fill embankments as previously proposed. The single aerial viaduct would extend from LAUS, over US-101, north Commercial Street, over Center Street, and over the lowered Amtrak lead track before transitioning to a retained fill section at the BNSF West Bank Yard. With fewer run-through tracks, the corresponding width of the portion of the viaduct over US-101 has been substantially reduced from 205-feet-wide as previously proposed to 75-feet-wide as currently proposed.

  South of the elevated platforms at LAUS, the 8 run-through tracks would converge to 4 run-through tracks on the portion of the viaduct that extends over US-101. The run-through tracks would converge again to 2 run-through tracks on the portion of the viaduct west of Center Street.

  The Build Alternative Design Option still accommodates 4 run-through tracks for HSR trains that would be available for northbound/southbound bidirectional CHSRA operations at LAUS. Similarly, 4 run-through tracks for regional/intercity trains would accommodate northbound/southbound bidirectional operations.

As discussed more in detail in Section 9.9 the Build Alternative Design Option would result in less construction-related activities as compared to the Build Alternative. The reduction in the scope and scale of infrastructure is related to the following components:

1. Retaining the existing Vignes Street Bridge instead of replacing it (one less bridge reconstructed),
2. Fewer platforms raised with narrower passageway under partially elevated LAUS rail yard, and
3. Partial reconstruction of the Cesar Chavez Avenue Bridge (western extent only)

4. Fewer run-through tracks on a narrower single aerial viaduct from LAUS to the West Bank of the Los Angeles River (2 fewer run-through tracks).

Based on the reduction in the scope and scale of infrastructure components described above, an estimated 15 percent reduction of construction-related activities is applied to the Build Alternative Design Option environmental analysis. The 15 percent reduction estimate is a conservative estimate given the reduced scope and scale of proposed infrastructure as part of the Build Alternative Design Option.

The reduced scope and scale of the proposed infrastructure is summarized below:

- One bridge would be replaced north of LAUS, versus two bridges (50% less).
- Four versus six platforms are being elevated and reconstructed (33% less).
- The expanded passageway is 100 feet wide versus 140 feet wide (30% less).
- The run-through track structure south of LAUS is narrower (about 30% less deck area).

No change to the duration of the 6-year construction schedule for the Build Alternative was assumed because the means and methods to construct the proposed infrastructure remain the same under the Build Alternative and the Build Alternative Design Option. Figure 9-1 provides an overview of the modifications and refinements as part of the Build Alternative Design Option.

9.4.1 Minor Variation Qualifications (Build Alternative Design Option)

The Build Alternative Design Option qualifies as a minor variation of the Build Alternative, and is not considered a new alternative, because it: 1) occurs within the project footprint of the Build Alternative; 2) includes the same features that are part of Build Alternative, although with a reduced magnitude of impacts due to a smaller configuration; and 3) does not include major infrastructure elements that would make it a different alternative (i.e., dedicated lead tracks alignment for HSR trains north of LAUS, double-deck platforms or new platform at LAUS, loop tracks, or shared lead tracks for freight and intercity trains at BNSF West Bank Yard).

As described in Chapter 2, Alternatives and Design Options Considered, the outcome of the alternatives screening process resulted in Track Alignment Alternative 14 combined with Concourse Concept 6 being recommended for detailed evaluation as part of the Build Alternative in the EIS. Other track alignment alternatives considered included major components that are substantially different than the Build Alternative and Build Alternative Design Option.

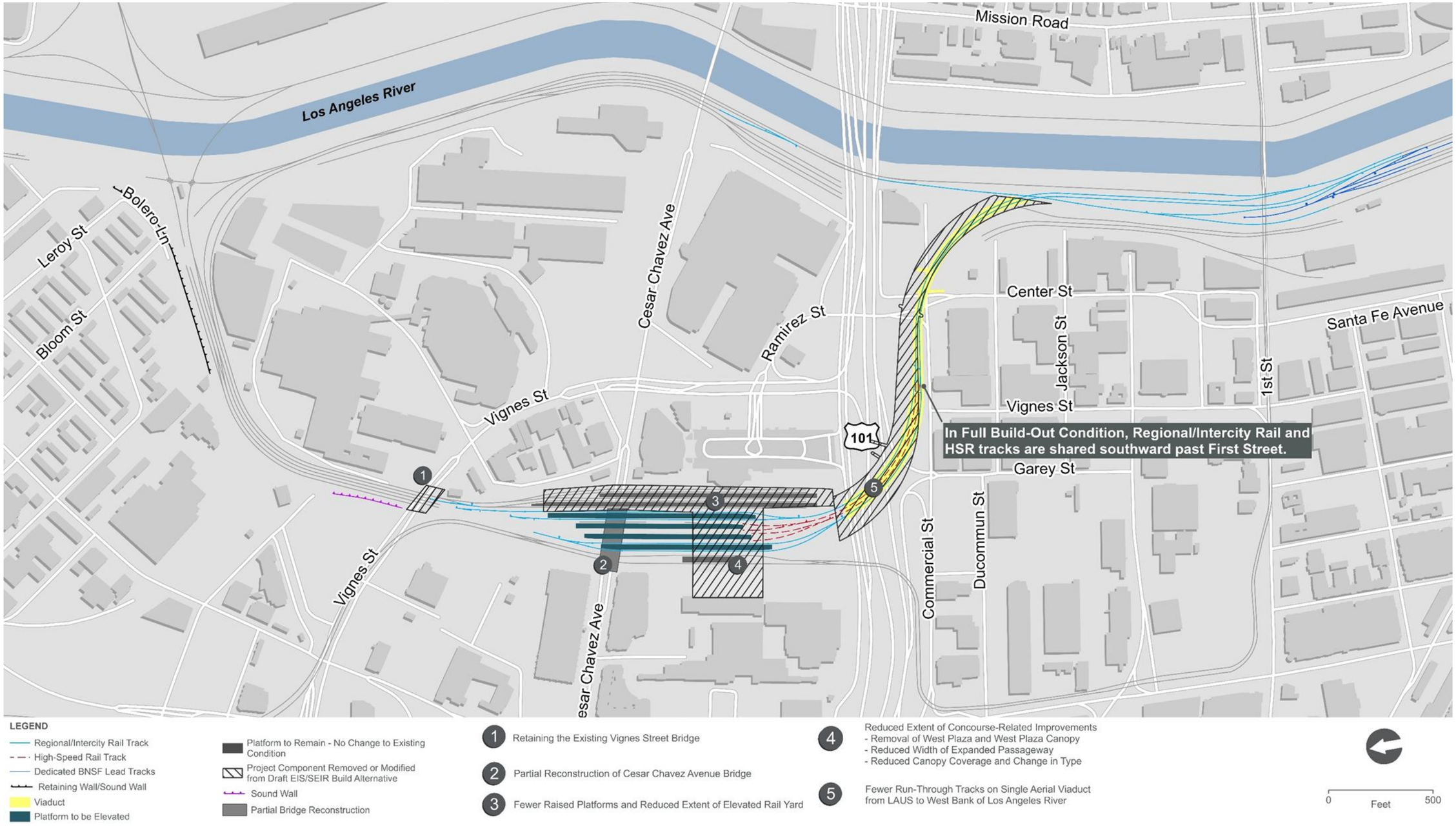
The other 13 track alignment alternatives caused major differences in the type and location of impacts, the extent of physical disturbance, and the context and intensity of potential effects. The magnitude of those differences associated with those infrastructure elements were substantially greater and different in nature from the Build Alternative, and they made those 13 alternatives qualify as different alternatives. A summary of major differences between the 13 alternatives and the Build Alternative Design Option is below:

- ***Alternatives with Dedicated Lead Track Alignment for HSR Trains North of LAUS*** (Track Alignment Alternatives 1 through 5, 7, 8, 10, and 13) – Nine alternatives with dedicated lead tracks for HSR trains would result in substantially greater impacts to properties north of LAUS, including the William Mead Home property (Section 106 historic property and Section 4(f) property) and Care First Village. Permanent impacts on these properties would be avoided with the Build Alternative and Build Alternative Design Option.
- ***Alternatives with Additional Platform at LAUS (Double Deck Platform or New Platform)*** (Track Alignment Alternative 10 and 11) – One alternative with a double-deck platform for HSR trains (Track Alignment Alternative 10) creates vertical grades along the run through track alignment that would exceed allowable design criteria (maximum 2.8 percent compensated) to connect to the other tracks – this is a substantially different configuration than the Build Alternative and Build Alternative Design Option. To meet the applicable design criteria, substantially greater impacts to adjacent properties north and south of LAUS may be required. One alternative with an eighth platform at LAUS (Track Alignment Alternative 11) requires permanent realignment of the Gold Line north of LAUS (extending towards Chinatown) and south of LAUS – this is a substantially different type of impact than the Build Alternative and Build Alternative Design Option. All applicable design criteria would be met with the Build Alternative and Build Alternative Design Option.
- **Alternatives with Loop Track(s)** (Track Alignment Alternatives 1 through 11 and 13) – Twelve alternatives with a loop track(s) require an alignment south of LAUS that would be shifted approximately 125 to 150 feet south – this would result in substantial refinements to the infrastructure and civil improvements south of US 101 and substantially greater environmental impacts resulting from:
    - Additional property acquisitions south of Commercial Street and east of Center Street.
    - Realignment of Commercial Street and closure of Vignes Street (south of Commercial Street) to vehicular traffic.
    - Lowering and reconfiguration of the Center Street and Commercial Street intersection.
    - Conflicts with Run through track structures east of Center Street and the Division 20 Portal Widening and Turnback Tracks Project.
- **Alternatives with Shared Lead Tracks for Freight Trains and Intercity Trains at BNSF West Bank Yard at the BNSF West Bank Yard** (Track Alignment Alternatives 1 through 13) – Thirteen alternatives that include shared lead tracks for BNSF and Amtrak trains at the BNSF West Bank Yard could result in potential impacts on intermodal freight operations as well as Amtrak on time performance to and from LAUS - this is a substantially greater impact on freight/passenger rail service than the Build Alternative and Build Alternative Design Option.

The major differences of these alternatives previously considered and rejected are summarized above to demonstrate why the Build Alternative Design Option qualifies as a variant to the Build Alternative and is not considered a new alternative. The Build Alternative Design Option does not include any of the infrastructure features discussed above that were part of the alternatives previously considered, and therefore qualifies as a design option.

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Figure 9-1. Build Alternative Design Option – Overview of Modifications and Refinements



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9.5 Key Components of the Build Alternative and Build Alternative Design Option

The key components of the Build Alternative and the Build Alternative Design Option are summarized north to south in Table 9-1.

Table 9-1. Key Components of the Build Alternative Design Option and the Build Alternative

Project Location	Key Components of the Build Alternative	Key Components of the Build Alternative Design Option
North of LAUS	**Interim Condition Components** • North Main Street Safety Improvements • William Mead Homes Retaining and Sound Wall • Modifications to special trackwork arrangements at CP Terminal **Full Build-Out Components** • Cesar Chavez Avenue Bridge Replacement • Vignes Street Bridge Replacement • Care First Village Sound Wall • 6 Lead Tracks	**Interim Condition Components** • North Main Street Safety Improvements • William Mead Homes Retaining and Sound Wall • Modifications to special trackwork arrangements at CP Terminal **Full Build-Out Components** • Partial Cesar Chavez Avenue Bridge Replacement • Care First Village Sound Wall • 6 Lead Tracks
LAUS – Rail Yard	**Full Build-Out Components** • 140-foot-wide Expanded Passageway • Elevated Rail Yard with 6 New Platforms (Platforms 2 through 7) • New Individual Platform Canopies (Rail Yard Canopy Design Option 1) or Grand Canopy over Rail Yard (Rail Yard Canopy Design Option 2) • Modifications to the Gold Line • East and West Plazas	**Full Build-Out Components** • 100-foot-wide Expanded Passageway • Partially Elevated Rail Yard with 4 New Platforms (Platforms 2 through 5) • 4 New Individual Platform Canopies • East Plaza
South of LAUS	**Interim Condition Components** • 10 Run-Through Tracks • Common Bridges and Embankment from LAUS to BNSF West Bank Yard • US-101 Highway Modifications/Safety Improvements • Lowered Amtrak Lead Track	**Interim Condition Components** • 8 Run-Through Tracks • Single Aerial Viaduct from LAUS to BNSF West Bank Yard • Embankment at BNSF West Bank Yard • US-101 Highway Modifications/Safety Improvements • Lowered Amtrak Lead Track

Table 9-1. Key Components of the Build Alternative Design Option and the Build Alternative

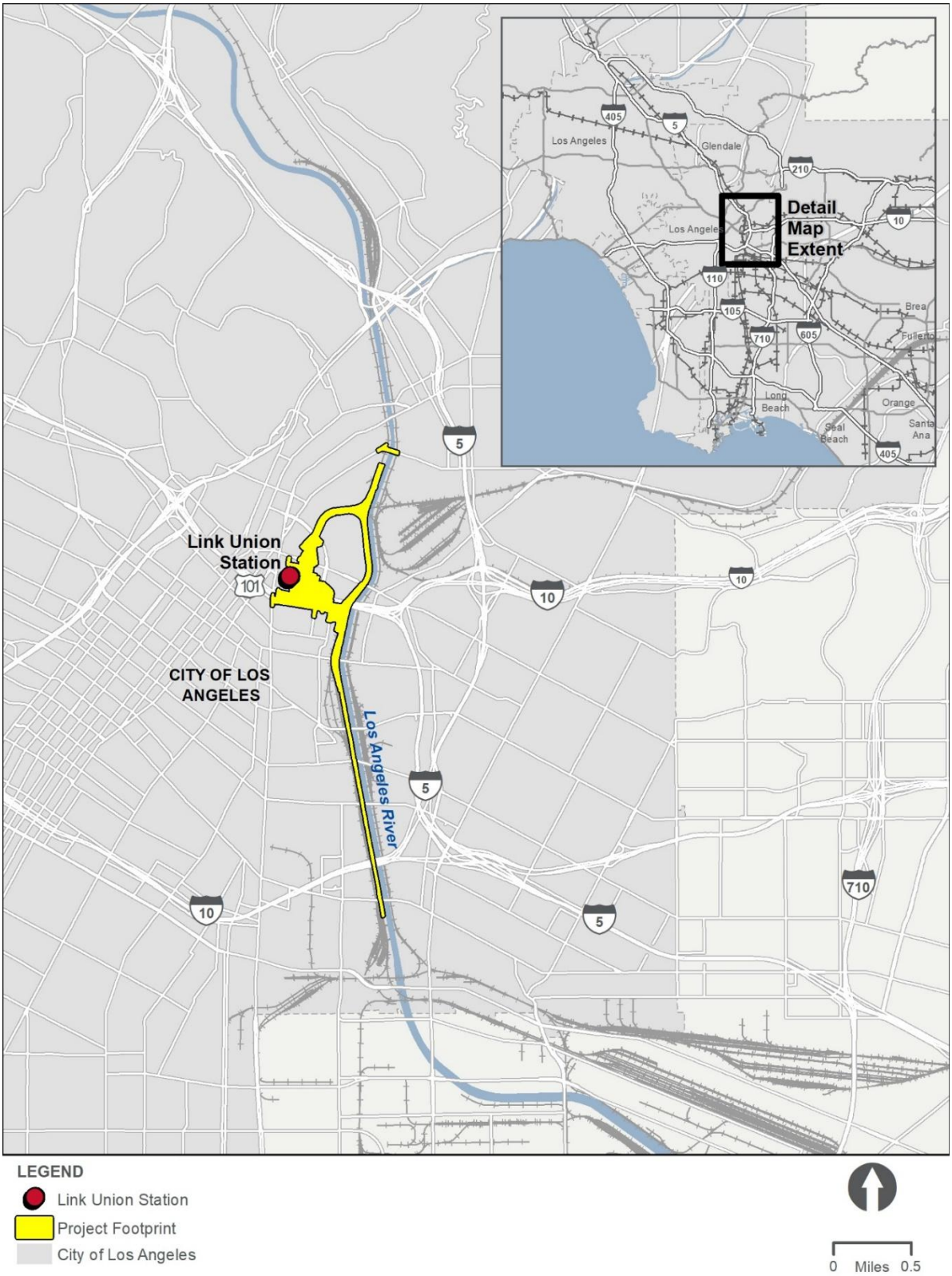
Project Location	Key Components of the Build Alternative	Key Components of the Build Alternative Design Option
	• Dedicated Lead Tracks for Amtrak Trains and BNSF Trains at West Bank Yard • Permanent loss of Freight Rail Storage Tracks at BNSF West Bank Yard (5,500 track feet).	• Dedicated Lead Tracks for Amtrak Trains and BNSF Trains at West Bank Yard • Permanent loss of Freight Rail Storage Tracks at BNSF West Bank Yard (5,500 track feet).

Notes:
LAUS=Los Angeles Union Station

9.6 Project Location and Regional Vicinity

Similar to the Build Alternative, the Build Alternative Design Option consists of infrastructure improvements in Downtown Los Angeles in the vicinity of LAUS. The Build Alternative Design Option would be implemented within the same Project footprint as previously considered for the Build Alternative (Figure 9-7, Maps 1 through 5). The Project footprint extends north and south of LAUS to accommodate proposed infrastructure improvements. The northern Project limit is at North Main Street (Mile Post [MP] 1.18) and the southern Project limit is in the vicinity of Control Point (CP) Olympic, south of Interstate 10 and Olympic Boulevard (MP 142.70). Major Project components are primarily located between Main Street and First Street. The end-to-end distance from Main Street to First Street is approximately 1.4 miles. The Project location and regional vicinity is depicted on Figure 9-2.

Figure 9-2. Project Location and Regional Vicinity



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9.7 High-Speed Rail Design Accommodation

LAUS is located between the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections of the planned HSR system. CHSRA is responsible for the planning, design, construction, and operation of the planned HSR system, as well as preparing all environmental clearance documentation required for the entirety of the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

Physical construction of common rail infrastructure that would allow CHSRA to construct the remaining infrastructure elements for the HSR system and to operate HSR trains within the Link US Project footprint is part of the Build Alternative and evaluated within this EIS. The Link US Project footprint also accommodates the space required for installation of OCS poles and other HSR related utility improvements. When this EIS states the planned HSR system is "accommodated," it means Metro would construct the common rail infrastructure described in this EIS consistent with specifications and requirements that CHSRA designates as appropriate for CHSRA to operate its HSR system within the limits of the Link US Project footprint. The northern and southern limits of the design accommodation for the planned HSR system within the Link US Project footprint is depicted in Figure 9-2. A summary of the HSR design accommodation for the Build Alternative Design Option is below.

- North of LAUS, the Build Alternative Design Option includes six shared lead tracks to support regional/intercity trains. Two of the shared lead tracks are designed to be compatible with HSR trains. The northern limit of HSR design accommodation in this EIS is where one new lead track would converge with mainline tracks north of LAUS at MP 0.91.
- At LAUS, the Build Alternative Design Option would include four new elevated platforms. Platforms 3 and 4 would meet CHSRA's level boarding requirements to support HSR trains. Other concourse-related improvements, including new VCEs and other back of house areas, would be designed to support HSR operations at LAUS.
- South of LAUS, the Build Alternative Design Option would include a single aerial viaduct from LAUS to the west bank of the Los Angeles River. Rail infrastructure south of LAUS would support regional/intercity rail run-through tracks and HSR run-through tracks. Figure 9-7 and Figure 9-8 depict the location of HSR run-through tracks evaluated in this EIS. The southern limit of HSR design accommodation is First Street along the west bank of the Los Angeles River at MP 141.10.

Common Rail Infrastructure

Tracks, platforms, bridges, embankments, and associated civil/railroad infrastructure that would accommodate both regional/intercity rail trains and HSR trains.

As part of the Link US Project, the following common rail infrastructure is environmentally evaluated in this EIS:

- North of LAUS – Shared lead tracks (compatible tracks) and the new Cesar Chavez Avenue Bridge are considered common rail infrastructure.
- At LAUS – Platforms 3 and 4, tracks, and concourse related improvements to support HSR operations are considered common rail infrastructure.
- South of LAUS – A single viaduct structure and embankment (extending from LAUS to First Street constructed wide enough to support run-through tracks for both regional intercity rail and HSR use), catenaries, and tracks are considered common rail infrastructure.

All other HSR-related infrastructure north and south of the Mile Post limits described above, and operation of the planned HSR system is or will be considered in CHSRA's environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections because additional infrastructure elements outside of the Link US Project limits are needed to analyze HSR operations.

9.8 Project Implementation Approach

Similar to the Build Alternative, the infrastructure improvements considered in the interim condition and the full build-out condition correspond to the earliest timeframe when infrastructure could be constructed and operational. The infrastructure improvements as part of the interim and full build-out condition is described below.

9.8.1 Interim Condition (Phase A)

The interim condition (also referred to as Phase A) is when the run-through track infrastructure south of LAUS would be implemented, in addition to the associated signal modifications, property acquisitions, and civil/structural improvements to facilitate new run-through service (Figure 9-4).

The preliminary engineering plans for the infrastructure improvements that are part of the interim condition (Build Alternative Design Option - Phase A Plan Sheets) are included in Appendix B of this EIS.

The interim condition does not include the one new lead track north of LAUS, or the partially elevated rail yard and new concourse-related improvements at LAUS. The infrastructure improvements as part of the interim condition align with a construction completion date as early as 2026.

Figure 9-5 below shows the reduced width of the run-through structure for the Build Alternative Design Option in comparison to the width of the run-through structure for the Build Alternative.

A summary of the proposed activities associated with the Build Alternative Design Option for the interim condition is provided below.

- Acquire properties south of LAUS within the Project footprint
- Relocate utilities north and south of LAUS
- Acquire a portion of the BNSF West Bank Yard (majority north of First Street) and remove 5,500 feet of existing storage tracks at BNSF West Bank Yard
- Construct special track work and modify signal/communication infrastructure north of LAUS
- Construct a run-through track ramp on the southern extent of Platform 3 at LAUS
- Construct a single aerial viaduct that would extend from LAUS, over US-101, north Commercial Street, over Center Street, and over the lowered Amtrak lead track before transitioning to a common rail embankment on the west bank of the Los Angeles River
- Construct common rail embankment on the west bank of the Los Angeles River (from southern extent of single arial viaduct to First Street Bridge)
- Construct new dedicated lead track for Amtrak trains at the BNSF West Bank Yard
- Construct modified BNSF West Bank Yard north end tail track configuration
- Construct two run-through tracks from Platform 3 at LAUS to the mainline tracks along the west bank of the Los Angeles River that would continue south past First Street

9.8.2 Full Build-Out Condition (Phase B)

The full build-out condition (also referred to as Phase B) is when the one new lead track, partially elevated rail yard, and concourse-related improvements at LAUS would be implemented (Figure 9-6). The conceptual engineering plans for the infrastructure improvements that are part of the full build-out condition (Build Alternative Design Option - Phase B Plan Sheets) are included in Appendix B of this EIS.

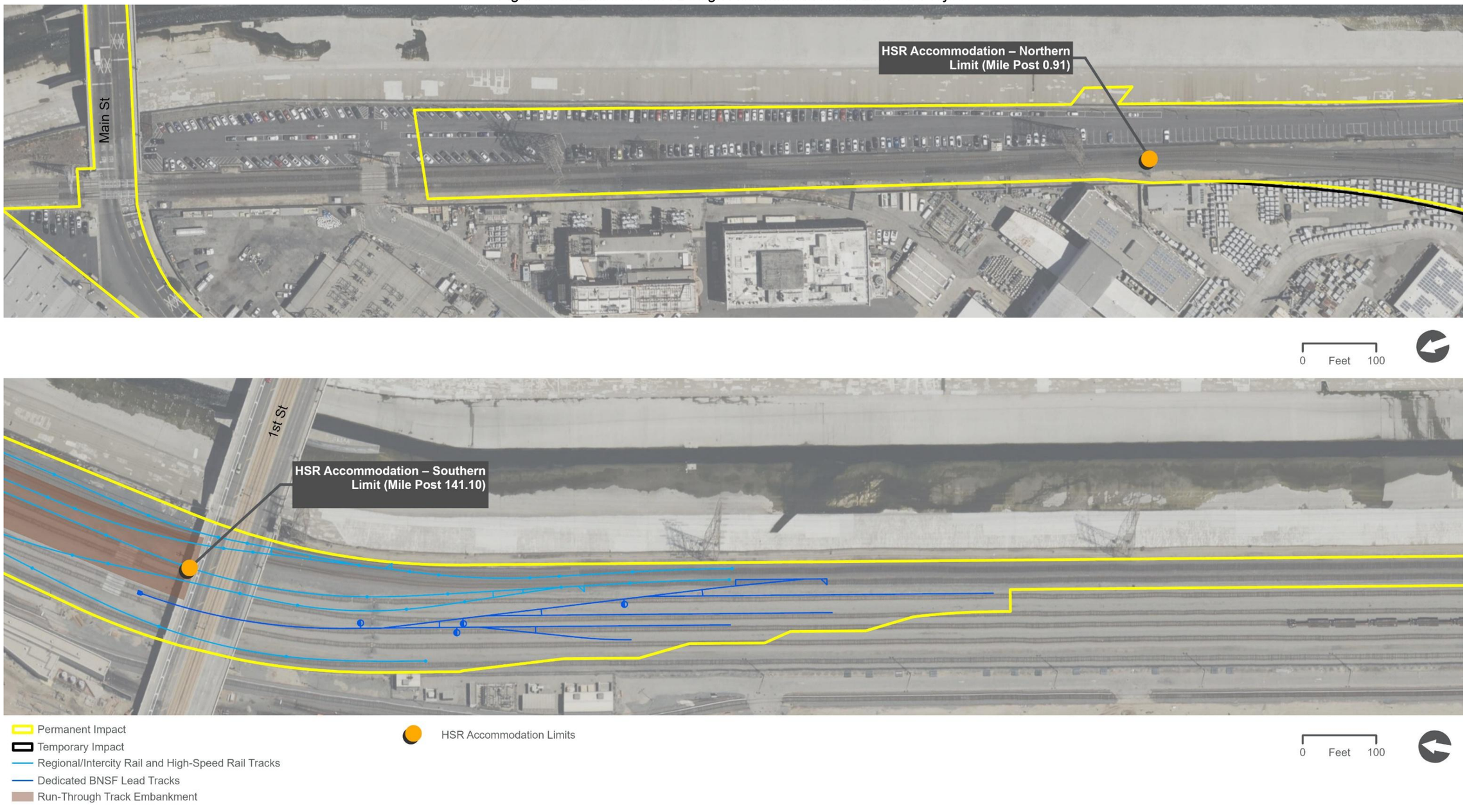
Regional/intercity rail trains would operate on all lead tracks north of LAUS, including compatible lead tracks identified for HSR service. Regional/intercity rail trains would also have full use of tracks in the rail yard (with exception of Tracks 1 and 2) and regional/intercity rail run-through tracks south of LAUS. The full build-out condition aligns with a construction completion date as early as 2031.

A summary of the proposed activities associated with the Build Alternative Design Option for the full build-out condition is provided below.

- Reconstruct a portion of the throat north of LAUS (from Vignes Street to Cesar Chavez Avenue)
- Reconstruct a portion of the bridge over Cesar Chavez Avenue north of LAUS
- Construct partially elevated rail yard with reconstructed platforms (Platforms 2 through 5), concourse-related improvements, and East Plaza at LAUS
- Construct 8 run through tracks (on previously constructed single aerial viaduct south of LAUS) that would extend south of LAUS Platforms 2 through 5 and merge into a minimum of four tracks on the US-101 viaduct that would merge with the two run-through tracks (for both regional/intercity rail and HSR use) through to First Street that were previously constructed in the interim condition.

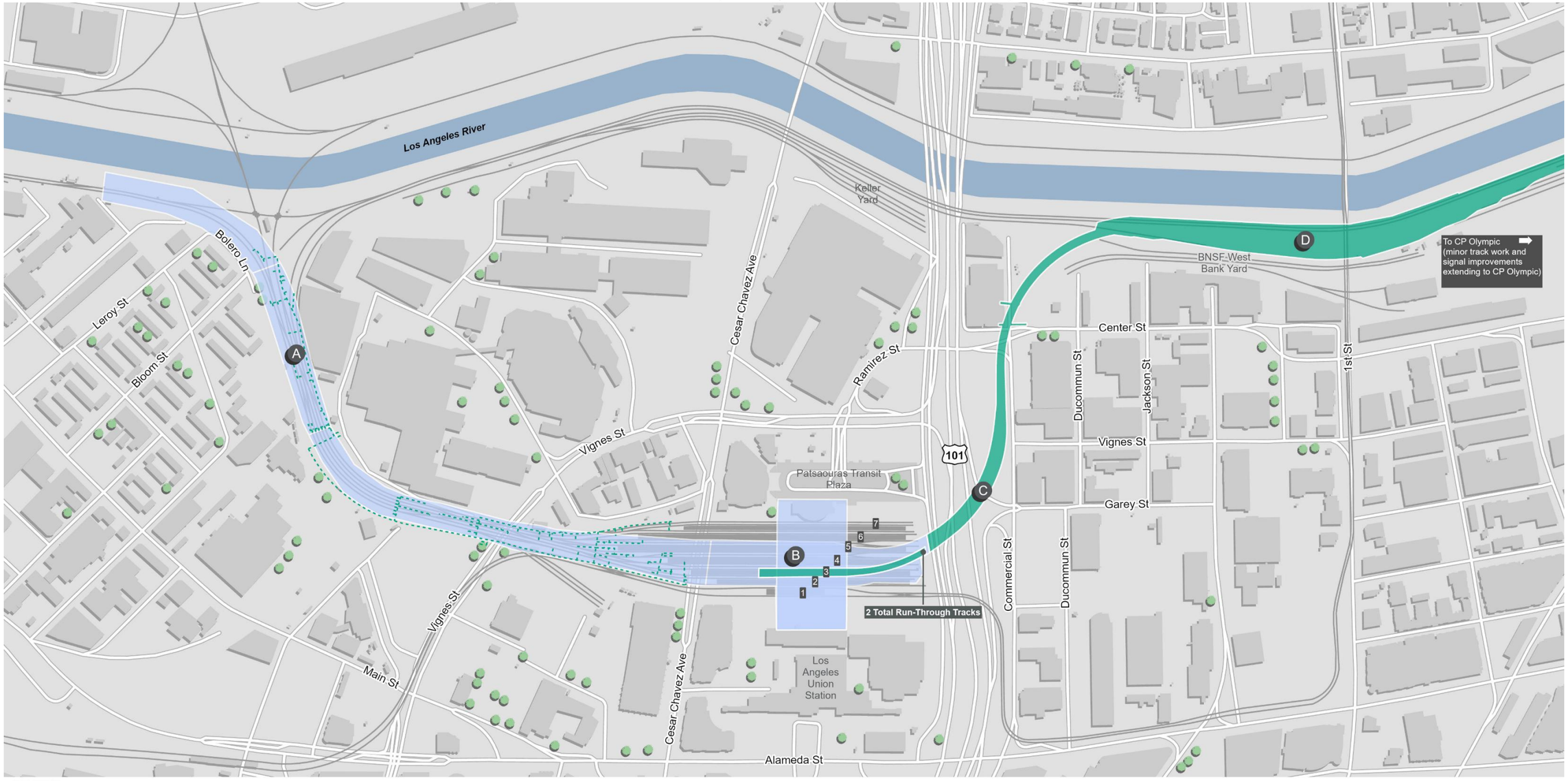
The full build-out condition includes some construction elements for the planned HSR system including the common rail infrastructure and HSR tracks that would be located throughout the Link US Project limits, including improvements at LAUS. Operation of HSR trains would occur on two lead tracks north of LAUS, Platforms 3 and 4 and associated Tracks 5 through 8 at LAUS, and on HSR run-through tracks supported by the single aerial viaduct and embankment along the Los Angeles River south of LAUS. As discussed above in Section 9.7, operation of the planned HSR system is or will be considered in CHSRA's environmental documentation for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections because additional infrastructure elements outside of the Link US Project limits are needed to analyze HSR operations.

Figure 9-3. Limits of HSR Design Accommodation in Link US Project



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Figure 9-4. Interim Condition Major Components (Build Alternative Design Option)



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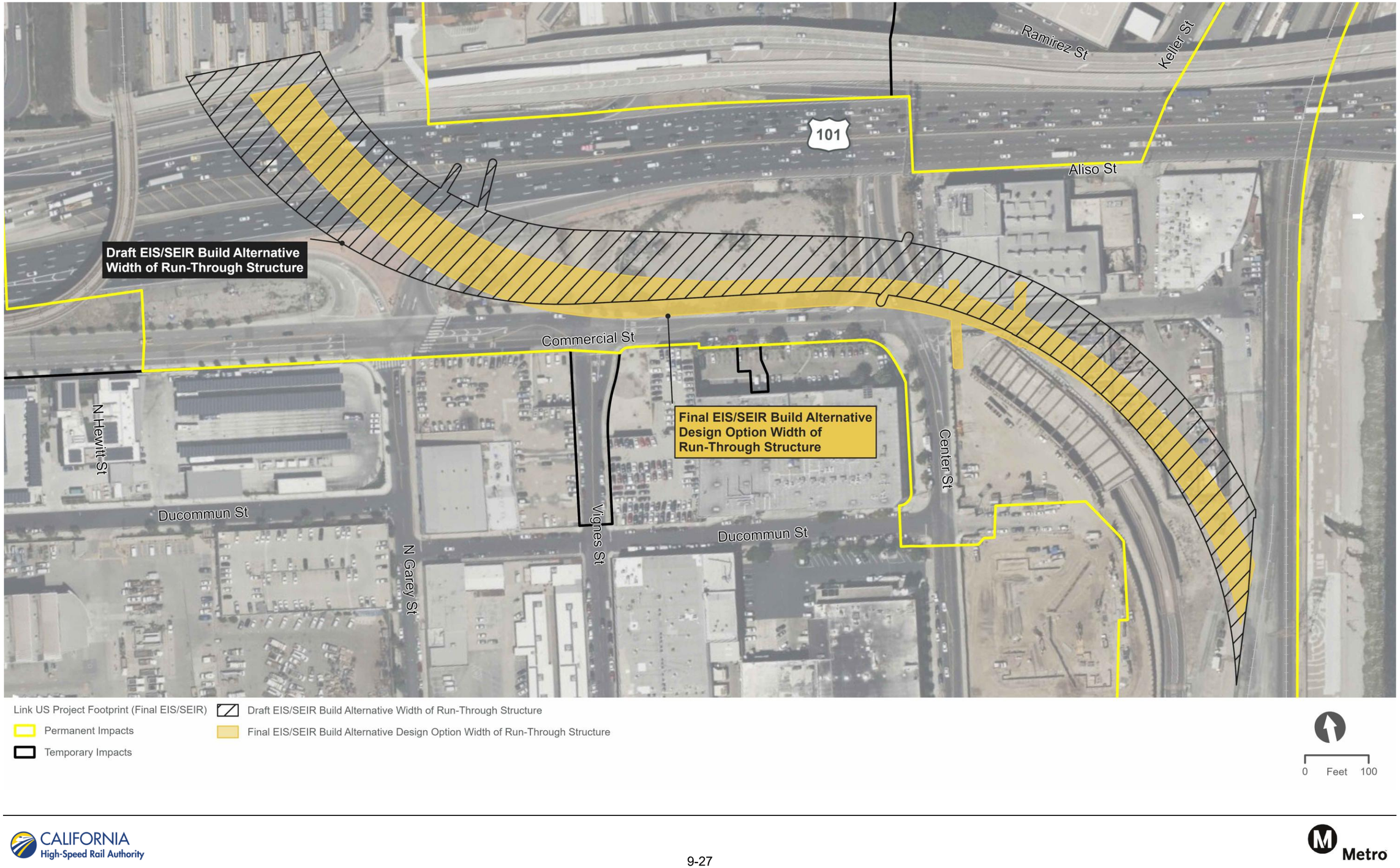
- Infrastructure Constructed in the Interim Condition
- Signal Improvements Constructed in the Interim Condition
- Infrastructure Constructed in Full Build-Out Condition
- Existing Platform
- Existing Tracks

- A — Track,Signal and Communications Improvements
- B — Platform 3 Ramp and Two Total Run-Through Tracks
- C — Run-Though Track Infrastructure
- D — Removal of BNSF Storage Tracks

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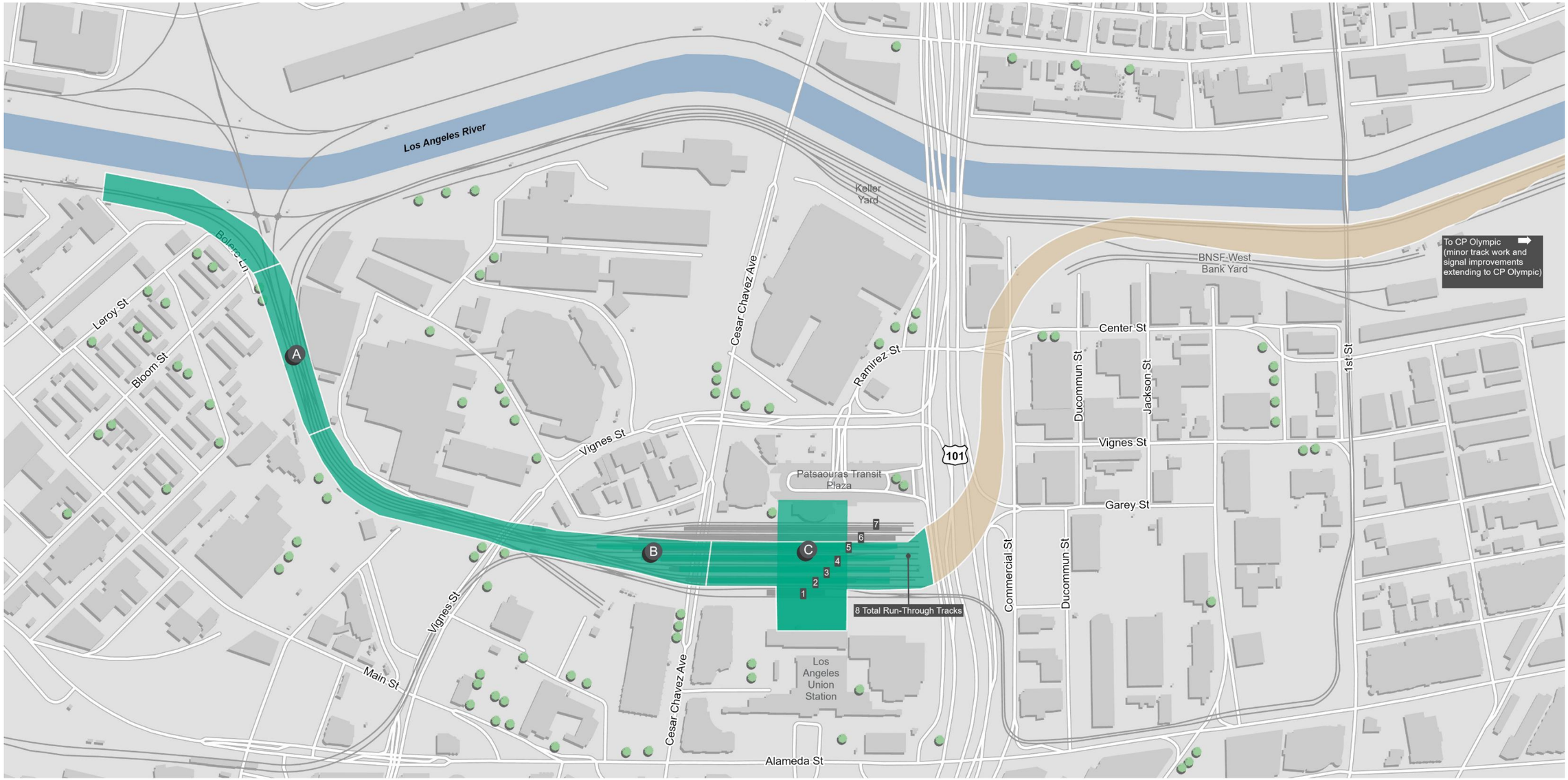
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Figure 9-5. Build Alternative Design Option - Reduced Width of Run-Through Structure



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Figure 9-6. Full Build-Out Condition Major Components (Build Alternative Design Option)



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9.9 Rail Yard Capacity Enhancements

Similar to the Build Alternative, the proposed capacity enhancements associated with the Build Alternative Design Option would facilitate enhanced railroad operations to enable the rail operators at LAUS to meet the forecasted daily train movements through LAUS (in conjunction with other infrastructure improvements not related to the Project that would be implemented by other entities). The forecasted train movements for the Build Alternative Design Option are consistent with the information presented in Chapter 1 of this EIS and are summarized below.

- Metrolink would operate 410 train movements through LAUS per day as early as 2026 and 690 train movements through LAUS per day as early as 2031. The projected service level for 2031 is consistent with the SCORE service plan and would represent a full build-out of Metrolink services for the foreseeable future, so the projected train movements remain the same for 2040.
- Amtrak and LOSSAN would operate 68 train movements through LAUS per day as early as 2026, 80 train movements through LAUS per day as early as 2031, and 140 train movements through LAUS per day as early as 2040.
- CHSRA would operate 272 HSR train movements through LAUS per day as early as 2040 (148 originating from/terminating at LAUS and 74 operating through LAUS to-and-from Anaheim). There would also be 50 daily deadhead equipment movements. HSR train movements into and out of LAUS (revenue and nonrevenue train movements) was provided by CHSRA for use in the environmental documentation for the Project.

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

Infrastructure improvements unrelated to the Build Alternative Design Option that are required to implement SCRRA's system-wide SCORE Program are the responsibility of SCRRA and other agency partners. Furthermore, the operational aspects of the planned HSR system and the associated environmental impacts resulting from implementation of the planned HSR system are not evaluated in this EIS because operation of the planned HSR system and the associated effects are addressed separately in the environmental documentation prepared by CHSRA for the Burbank to Los Angeles and Los Angeles to Anaheim Project Sections.

9.10 Infrastructure Improvements

This section describes the infrastructure improvements for the Build Alternative Design Option under the following six main categories.

- **Track and structural improvements** – One new lead track north of LAUS, track/platform arrangements in the rail yard, and characteristics of the run-through track connections from LAUS to the mainline tracks on the west bank of the Los Angeles River are described. The Cesar Chavez Avenue Bridge replacement, single aerial viaduct, and embankments and retaining walls are also described.
- **Concourse Improvements** – Passenger safety and accessibility improvements, and other amenities including the East Plaza are described.
- **Rail signal improvements** – Communications and systems-related equipment are described.
- **Utility improvements** – Wet and dry utility relocations, extensions, and/or abandonments are described.
- **Drainage and water quality improvements** – New drainage systems and permanent stormwater BMPs are described.
- **Circulation and streetscape improvements** – Temporary detours, roadway improvements (widening, realignment, reconfiguring, restriping, and resurfacing of local roadways) and safety improvements on US-101 and along nearby streets is described.

The infrastructure improvements as part of the Build Alternative Design Option are described in this section in a similar format to how the infrastructure improvements for the Build Alternative are described in Chapter 2, Alternatives and Design Options Considered. This format helps demonstrate how the infrastructure improvements as part of the Build Alternative Design Option are within the spectrum of project components discussed in the Draft EIS/SEIR (between the No-Build Alternative and the Build Alternative), and to also provide a basis for where project components were adequately addressed and thoroughly analyzed within the environmental analysis and Project Footprint of the Build Alternative.

Any new or modified infrastructure described herein is discussed and presented relative to the existing condition, not the condition as if the Build Alternative was implemented.

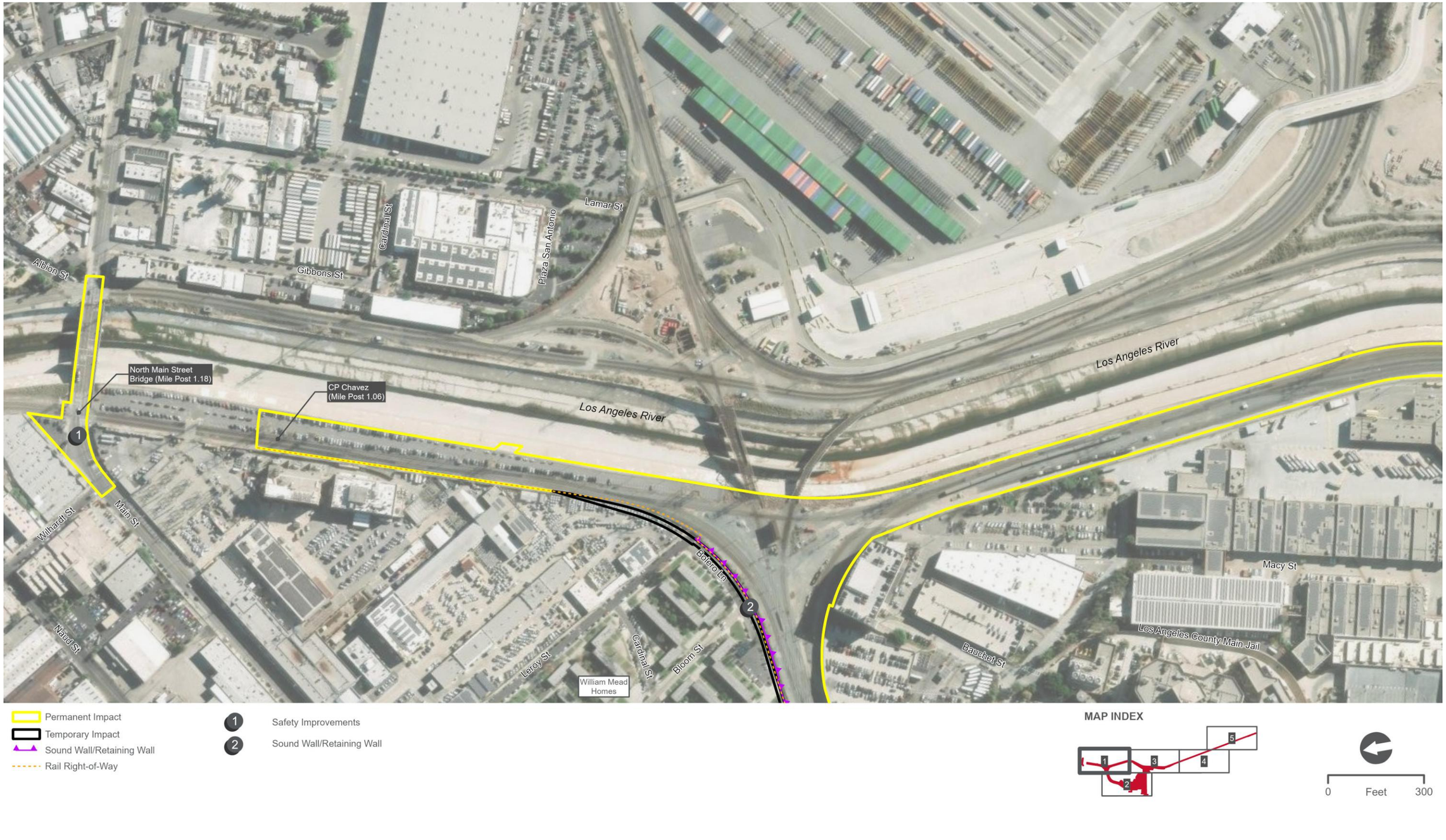
9.10.1 Build Alternative Design Option – Detailed Description

This section provides a detailed description of the key infrastructure improvements that would facilitate construction of the one new lead track in the throat north of LAUS, a 100-foot-wide expanded passageway below four elevated rail yard platforms at LAUS (partially elevated rail yard), and 8 run-through tracks that would extend south of LAUS Platforms 2 through 5 and merge into a minimum of four tracks on the US-101 viaduct, and then to a minimum of two run-through tracks (for both regional/intercity rail and HSR use) through to First Street.

The Project footprint for the Build Alternative Design Option extends to the farthest extent of where temporary work areas (temporary impacts) would occur and where permanent infrastructure (permanent impacts) is proposed at or within the vicinity of LAUS. The Project footprint and key components associated with the Build Alternative Design Option are depicted on Figure 9-7 through Figure 9-9.

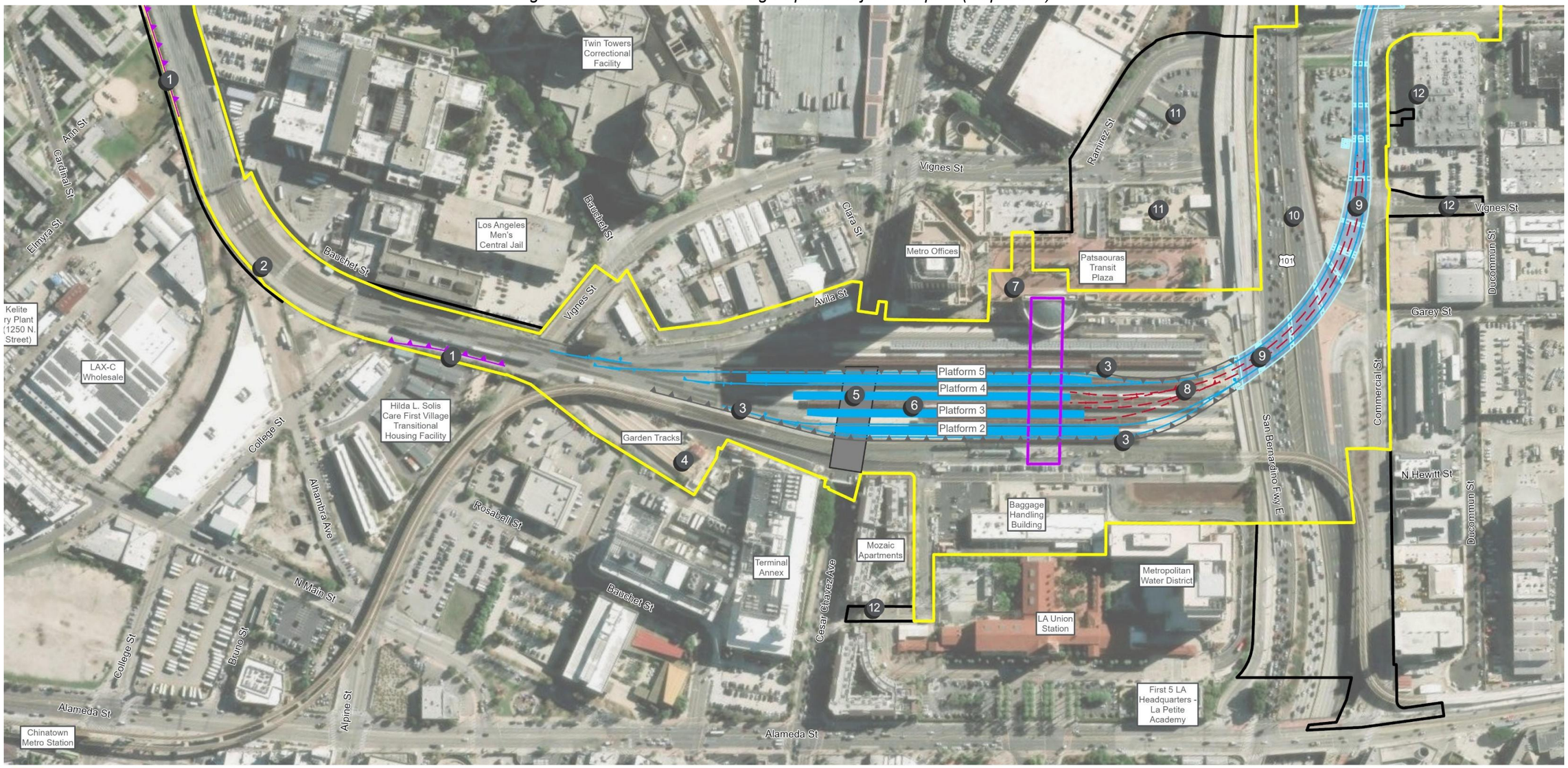
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Figure 9-7. Build Alternative Design Option Project Footprint (Map 1 of 5)



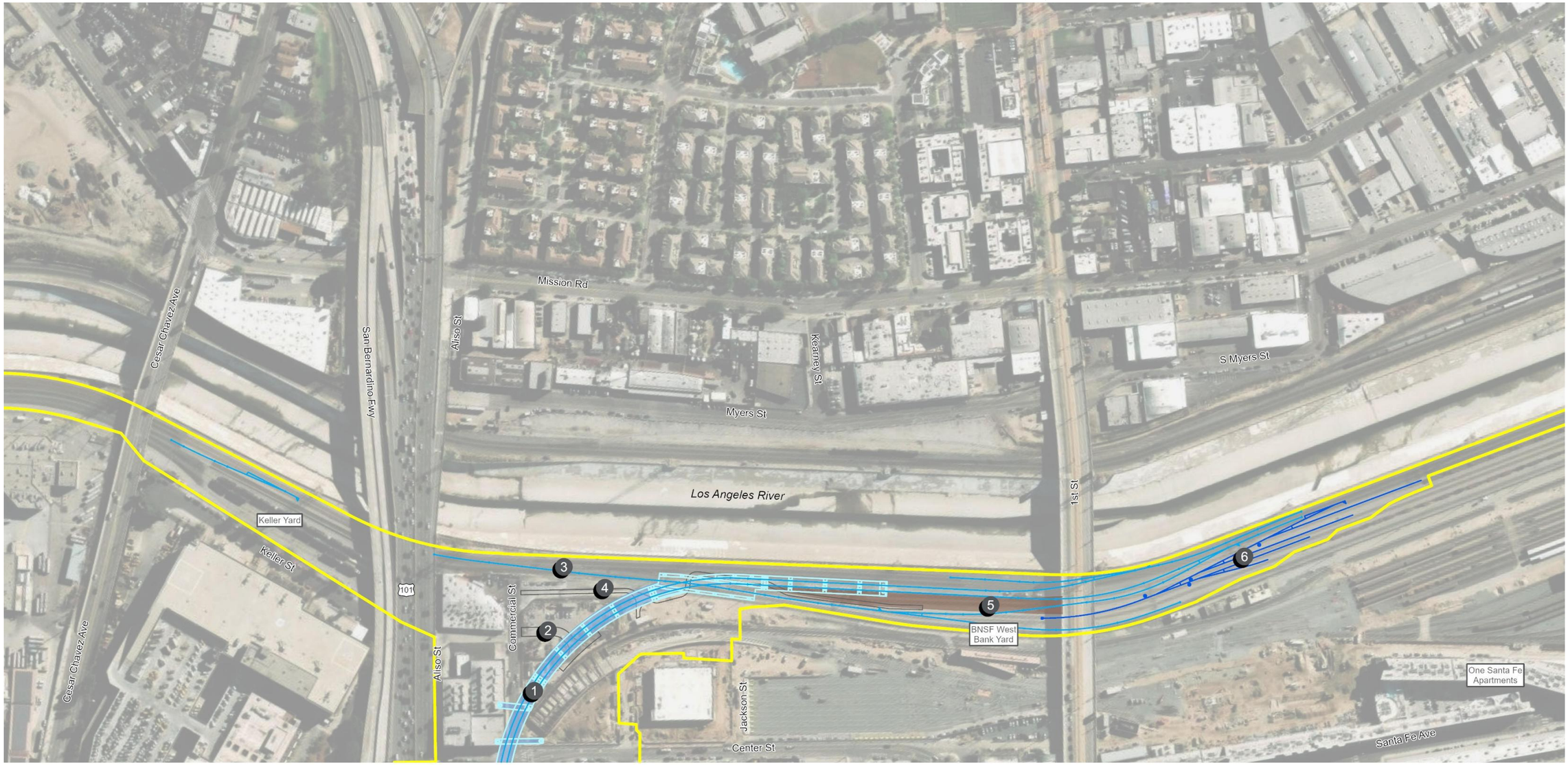
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Figure 9-7. Build Alternative Design Option Project Footprint (Map 2 of 5)



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Figure 9-7. Build Alternative Design Option Project Footprint (Map 3 of 5)



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Figure 9-7. Build Alternative Design Option Project Footprint (Map 4 of 5)



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Figure 9-7. Build Alternative Design Option Project Footprint (Map 5 of 5)



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Infrastructure improvements associated with the Build Alternative Design Option are described below.

Track and Structural Improvements

Track Improvements

Lead Tracks

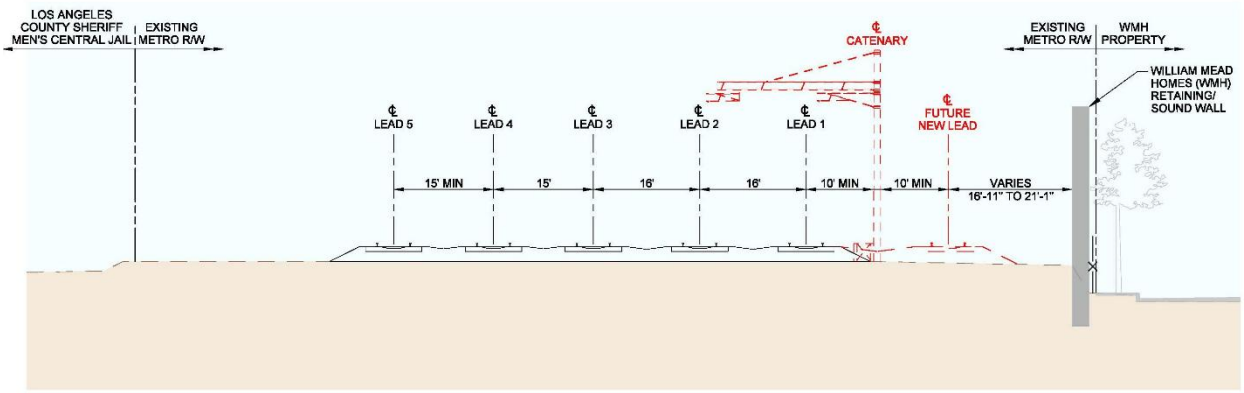
The Build Alternative Design Option includes one new lead track in the LAUS throat with regional/intercity rail trains and HSR trains sharing two compatible lead tracks for approximately 3,000 feet from CP Chavez to LAUS. Retaining wall(s) would also be required within the existing railroad ROW. Temporary work areas may extend outside of the existing railroad ROW within the William Mead Home property to construct the retaining wall (and sound wall as part of Mitigation Measure NV-1 [see Section 3.6, Noise and Vibration]).

Track improvements and their planned use in the interim and full build-out- condition are summarized below.

- In the interim condition, the one new lead track north of LAUS would not be constructed; however, special track work in the throat 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 one new lead track north of LAUS would be constructed. Two tracks in the western portion of the throat would be constructed with a minimum 650'-0" radius curve and with turnouts compatible for operation of HSR trains by CHSRA.
- -Eventually, HSR trains would operate on two tracks north of LAUS that would be electrified by CHSRA. Regional/intercity rail trains would utilize all lead tracks in the full build-out condition and after the initiation of planned HSR service, as they would be capable of running under their own power on the electrified tracks.

Figure 9-8 depicts a cross section of the shared lead tracks with electrified catenaries north of LAUS where HSR trains may operate.

Figure 9-8. Cross Section of Shared Lead Tracks for Regional/Intercity Rail and Planned High-Speed Rail System -–– North of Los Angeles Union Station



Throat Tracks

In the interim condition, lead tracks through the LAUS throat to raised platforms, as well as the station tracks they serve (new Tracks 3 through 10, respectively), would be raised at an approximate 0.9 percent maximum grade to accommodate elevated platforms. Reconfiguring and raising of the platforms and tracks in the rail yard requires permanent removal of the Garden Tracks and associated track work in the LAUS 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, positive train control (PTC), and communications-related equipment.

Temporary Run-Through Track Ramp

In the interim condition, no platforms would be raised. From Platform 3, a temporary run through track ramp would be constructed to connect Tracks 5 and 6, which Platform 3 serves, to the single aerial viaduct. Passenger ramps leading to Platform 3 would be modified and/or demolished and reconstructed to facilitate construction of the temporary run through track ramp. Tracks 5 and 6 would facilitate run-through service for regional/intercity trains from LAUS to the mainline tracks on the west bank of the Los Angeles River. Accommodating the curvature of the track ramp and connection to the run-through track viaduct will require shortening the southern portion of Platforms 4 through 7.

Partially Elevated Rail Yard

In the full build-out condition, the rail yard would be partially elevated with 4 new platforms and 8 connecting tracks. The rail yard would be partially elevated and would still allow the connecting run-through track viaduct to meet vertical clearance requirements for the El Monte Busway and US-101 (16.5 feet minimum vertical clearance per Caltrans standards). Platforms 3 and 4 would be constructed in the full build-out condition to meet level boarding requirements for HSR trains. The characteristics of the elevated rail yard are depicted on Figure 9-7 and Figure 9-9, respectively and described below.

- Platform 1 (Tracks 1 and 2) – In the full build-out condition Platform 1 is proposed to be lengthened by 175 feet to the north with Tracks 1 and 2 being aligned to accommodate the lengthening. No modification to the Gold Line Viaduct south of LAUS would occur. In both full build-out conditions, the Metro Gold Line trains would utilize Platform 1 (Tracks 1 and 2).
- Platform 2 (Tracks 3 and 4) – In the full build-out condition, Platform 2 and Tracks 3 and 4 would be demolished to facilitate construction of a new Platform 2 with associated regional/intercity rail run-through tracks. In both full build-out conditions, Tracks 3 and 4 would serve regional/intercity rail trains from Platform 2.
- Platforms 3 and 4 (Tracks 5 through 8) – In the full build-out condition, Platforms 3 and 4 and the adjacent tracks (Tracks 5 through 8) and the interim condition track ramp would be demolished to facilitate the construction of new Platforms 3 and 4 with HSR run-through tracks. Platforms 3 and 4 would be built 36-inches or 3 feet higher than Platforms 2 and 5 to accommodate the level boarding requirements for HSR trains as depicted in Figure 9-9.
- It should be noted that Tracks 5 through 8 and Platforms 2 and 3 could be available for use by regional/intercity trains if high-level train vehicles are used.
- Platform 5 (Tracks 9 and 10) – In the full build-out condition, Platform 5 and Tracks 9 and 10 would be demolished to facilitate construction of a new Platform 5 with associated regional/intercity rail run-through tracks. In both full build-out conditions, Tracks 9 and 10 would serve regional/intercity rail trains.
- Platforms 6 and 7 (Tracks 11 through 15) – In the interim and full build-out conditions, Tracks 11 through 15 would remain as stub-end tracks for regional/intercity rail use.

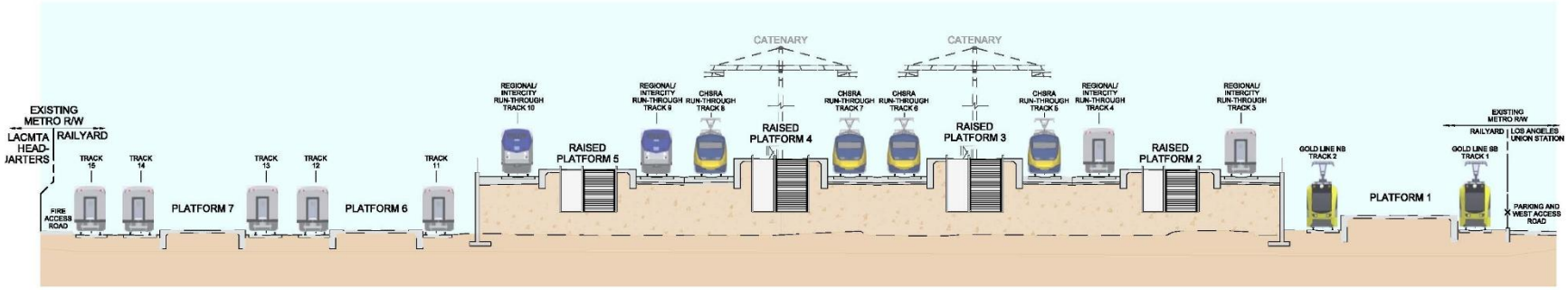
Level Boarding

Refers to “high-level” vehicles or trains with interiors that are level with station platforms, so passenger do not climb steps to board the train. This allows people in wheelchairs to board quickly and easily without any special assistance.

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.

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Figure 9-9. Cross Section of Rail Yard (Full Build-Out Condition with HSR Trains Depicted) – Looking South



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Platform Improvements

In the interim condition, the rail yard would be retained at its current elevation. The southern portion of Platform 3 would be shortened to facilitate construction of the temporary run-through track ramp supporting Tracks 5 and 6. Other platform enhancements and amenities including furnishings along Platform 3 would also be implemented in the interim condition in conjunction with construction of the temporary run-through track ramp.

In the full build-out condition, the rail yard would be partially elevated with four new platforms. As discussed above, Platform 1 serving the Metro E Line (Gold Line) would be lengthened to optimize the passenger circulation space below the rail yard, and Platforms 3 and 4 would be constructed to accommodate level boarding requirements for HSR trains as depicted on Figure 9-9. Platforms 2 through 5 would also be widened to enhance safety, allow enough space for new VCEs while still providing sufficient room for passenger movements, and to meet current CBC and NFPA 130 performance requirements for egress and safe evacuation.

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 9-2 are included in the environmental evaluation.

Table 9-2. Build Alternative Design Option Platform Characteristics – Interim and Full Build-Out Conditions

Platform Number	Tracks	Platform Length (Interim Condition/Full Build-Out Condition) (feet)	Operator (Interim Condition/Full Build-Out Condition)	Platform Tracks South of LAUS (Interim Condition/Full Build-Out Condition)
1	1 - 2	275/450	Metro	Run-through (Gold Line)
2	3 - 4	960/820	Metrolink	Stub-end/Run-through
3	5 - 6	775/800	Metrolink and Amtrak/CHSRA	Run-through/Run-through
4	7 8	965/800 1,065/800	Metrolink and Amtrak/CHSRA	Stub-end/Run-through
5	9 - 10	1,365/995	Metrolink and Amtrak	Stub-end/Run-through

Table 9-2. Build Alternative Design Option Platform Characteristics – Interim and Full Build-Out Conditions

Platform Number	Tracks	Platform Length (Interim Condition/Full Build-Out Condition) (feet)	Operator (Interim Condition/Full Build-Out Condition)	Platform Tracks South of LAUS (Interim Condition/Full Build-Out Condition)
6	11 - 12	1,315	Metrolink and Amtrak	Stub-end
7	13 - 14	1050	Metrolink and Amtrak	Stub-end

Notes:
CHSRA=California High-Speed Rail Authority; EIS=environmental impact statement; HSR=high-speed rail; LAUS=Los Angeles Union Station

Run-Through Tracks

In the interim condition, two run-through tracks would be constructed to connect Tracks 5 and 6 from the LAUS rail yard to the mainline tracks on the west bank of the Los Angeles River. The proposed run-through track alignment for the Build Alternative Design Option would be located north of Commercial Street and would avoid conflicts with businesses and industrial buildings located on the south side of Commercial Street between Vignes Street and Center Street. In addition, potential acquisition and business relocation impacts on Amay's Bakery would be avoided because the proposed single aerial viaduct would extend over but not across the property thereby allowing the business to remain operational. Furthermore, no conflicts with Metro's new widened Red/Purple Line subway tunnel portal that would be constructed as part of Metro's Division 20 Portal Widening and Turnback Facility Project and the ESOC Project, would occur. The Build Alternative Design Option does not include modifications to the Keller Yard storage tracks.

At the BNSF West Bank Yard, the single aerial viaduct would connect to a common rail embankment that would extend on the west bank of the Los Angeles River from the southern extent of the single aerial viaduct to the First Street Bridge that would support two shared regional/intercity/CHSRA rail run-through tracks. Dedicated lead tracks for Amtrak trains and BNSF freight trains would facilitate direct access to the Amtrak maintenance facility in the vicinity of Redondo Junction, and the remainder of the BNSF West Bank Yard, respectively. The mainline track connections for run-through tracks would occur approximately 1,000 feet south of First Street.

Construction of a common rail embankment along the west bank of the Los Angeles River in conjunction with dedicated lead tracks for Amtrak and BNSF freight trains would result in permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard (majority of lost capacity would occur north of First Street).

Approximately 24,645 feet of existing track at the BNSF West Bank Yard (south of First Street) would not be affected.

In the full build-out condition, the Build Alternative Design Option accommodates a total of eight regional/intercity rail and CHSRA run-through tracks from rail yard Tracks 3 through 10 that would extend to the mainline tracks on the west bank of the Los Angeles River within the limits of the Build Alternative Design Option Project footprint. The additional run-through tracks would facilitate expanded regional/intercity rail run-through service and eventually HSR service capabilities.

Eventually, four HSR run-through tracks (Tracks 5 through 8) would be operational within the limits of the Build Alternative Design Option Project footprint.

Structural Improvements

The Build Alternative Design Option would include the following structural improvements:

- Partial replacement of the bridge over Cesar Chavez Avenue
- Construction of a new single aerial viaduct that would span over US-101, Commercial St, Center Street, and the Amtrak Lead and then end at the West Bank of the Los Angeles River
- Construction a new common rail embankment at the BNSF West Bank Yard along the mainline tracks
- Construction of new retaining walls, concrete aprons, parapet walls, in-fill walls, concrete abutments, and/or placement of new concrete foundations

The structural improvements are described in detail below. Structural elements described below would be designed for a live load of Cooper E-60, as applicable.[1]

Cesar Chavez Avenue Bridge

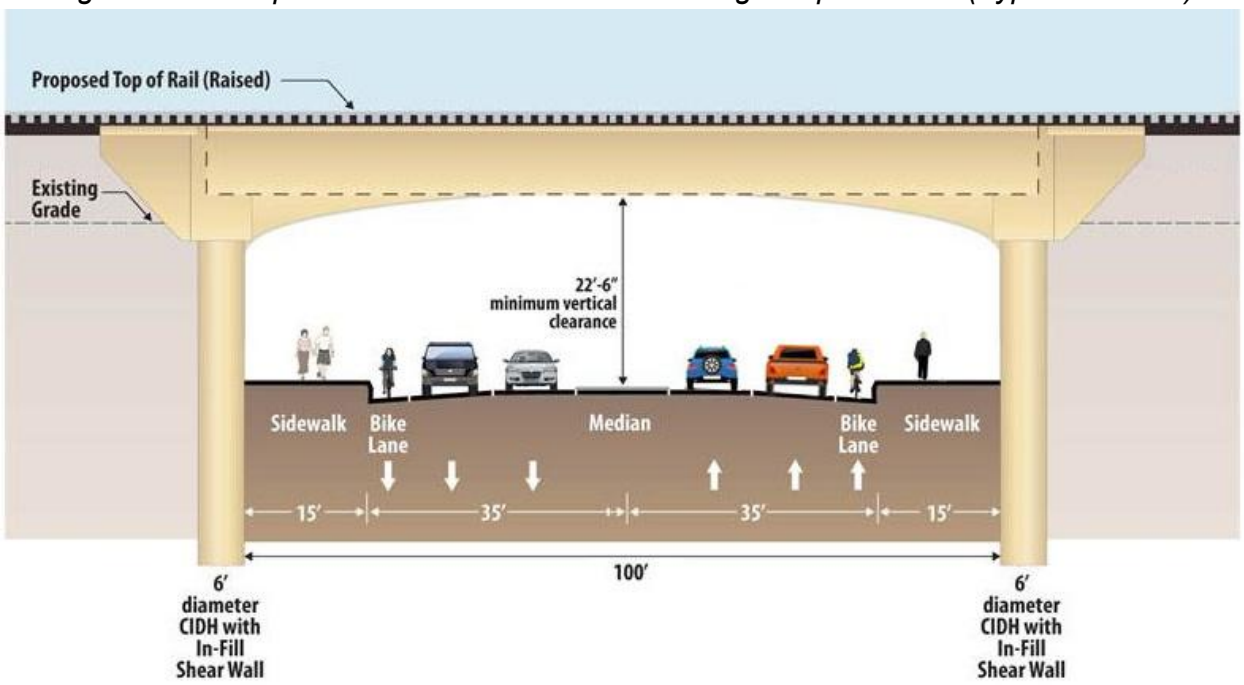
The Build Alternative Design Option includes partial replacement of the existing railroad bridge over Cesar Chavez Avenue. Partial replacement of the existing bridge is required because it would not support the additional loading requirements for passenger trains and steam locomotives at 20 miles per hour which is the estimated rate of travel at this location. This bridge was also constructed in 1937, is a federal and state eligible historic 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 CHSRA, the City of Los Angeles, and other applicable regulatory agencies (i.e., SHPO). Figure 9-10 depicts a typical section for the partial replacement of the Cesar Chavez

[1] 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 (AREMA) Cooper live load diagram to determine the actual E rating of a bridge, which depends on train speed, bridge span length, and bridge design.

Avenue Bridge at a width that would not preclude future roadway improvements pursuant to the city's *Mobility Plan 2035*.

In the full build-out condition, the Cesar Chavez Avenue Bridge would be partially reconstructed in two portions, the westward and eastward portions. 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 9-10. Proposed Cesar Chavez Avenue Bridge Replacement (Typical Section)



Single Aerial Viaduct

In the interim condition, a single aerial viaduct over the El Monte Busway and US-101 would be constructed with a deck wide enough to support regional/intercity rail run-through tracks and HSR run-through tracks.

The portion of the single aerial viaduct has a width that varies between approximately 75 feet wide and 44 feet wide on a length of approximately 2,470 feet long. The deck elevation that varies between 308 feet and 268 AMSL. The height of the structure would vary depending on location when measured from the roadway or ground below to the highest point of the viaduct structure. The viaduct would be supported by two abutments and on twenty-seven bents. The width of the viaduct would taper down and become narrower as the structure crosses US-101 and continues east toward Vignes Street. The viaduct would meet the vertical clearance requirements of the El Monte Busway and US-101 (16.5 feet minimum clearance) and the structural requirements per Metrolink, Amtrak, and CHSRA design criteria manuals.

The viaduct would be constructed of materials similar to those used in the Alameda Street overhead crossing and the Gold Line Viaduct. Metro, in coordination with the City of Los Angeles and Caltrans, may also implement aesthetic treatments to the viaduct. Although the renderings depicted Figure 9-11. and Figure 9-12. depict the run-through track structures and alignment that is part of the Build Alternative, the examples of potential aesthetic treatment concepts shown in these figures could also be applied to the viaduct associated with the Build Alternative Design Option. These aesthetic treatments are concepts and subject to change. Figure 9-11. and Figure 9-12 also depict the bicycle lanes along Commercial Street that would be required as part of the design.[2] Urban design enhancements would be implemented in coordination with City of Los Angeles and Caltrans.

Figure 9-11. Aesthetic Treatments and Urban Design Enhancements South of US-101 (Commercial Street)



[2] Bicycle lanes along Commercial Street are required as part of Mitigation Measure LU-1 (described in Section 3.2, Land Use and Planning).

Figure 9-12. Aesthetic Treatments and Urban Design Enhancements South of US-101 (Center Street/Commercial Street)



Concourse Improvements

In the interim condition, no concourse-related improvements would be constructed, except for platform enhancements on Platform 3.

In the full build-out condition, the Build Alternative Design Option includes a 100-foot-wide expanded passageway below the LAUS rail yard in conjunction with a new plaza east of the elevated rail yard (East Plaza). The expanded passageway and concourse-related improvements would be designed with the appropriate size and relative arrangement of waiting areas, wayfinding and signage, amenities, circulation spaces, and other back-of-house facilities. These improvements would increase passenger capacity, enhance safety and ADA accessibility, allow for more efficient passenger egress movements to and from the various transit modes at LAUS, and accommodate the forecast increases in passengers while meeting current building code requirements.

Existing ramps and stairs that currently provide passenger connections from the pedestrian passageway to the platforms on the rail yard (along with the Gold Line and Red/Purple Line subway station access points) would be modified to accommodate the new expanded passageway and installation of new VCEs (stairs, escalators, and elevators). As discussed above under the discussion of Track Improvements, VCEs serving Platforms 3 and 4 would accommodate CHSRA's level boarding requirements for HSR trains.

The expanded passageway and associated concourse-related improvements would be designed to meet the demands of a modern multimodal transit station with architectural elements and design features that balance the historic character of LAUS with a new modern design. Sustainable design features would be incorporated into the concourse-related improvements in accordance with the CBC, industry standards, and design criteria specific to Metro, SCRRA, LOSSAN, and CHSRA, as appropriate.

Concourse-related improvements associated with the Build Alternative Design Option include:

- 100-foot-wide expanded passageway below the rail yard
- Passenger circulation and waiting areas
- East Plaza
- Weather protection (individual rail yard platform canopies)
- Ancillary support functions and back-of-house uses (staff support spaces, administrative areas, and baggage handling operations)
- VCEs (stairs, escalators, and elevators)
- Ticketing and baggage pick-up/drop-off 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

Individual canopies would extend up to 25 feet over each of the 4 raised platforms. The canopies over the partially elevated rail yard are part of the Build Alternative Design Option and are further discussed in Section 9.10.2.

Figure 9-13 through Figure 9-15 include architectural renderings of the concourse-related improvements as part of the Build Alternative Design Option including the 100-foot-wide expanded passageway, interior and exterior views of and within the East Plaza, ingress/egress areas, waiting areas, and VCEs. The renderings are conceptual, subject to change, and provided to illustrate the extent of architectural expansion and renovation if the Build Alternative Design Option were implemented.

Figure 9-13. Build Alternative Design Option – Expanded Passageway with Retail and Waiting Areas Looking Southwest



Figure 9-14. Build Alternative Design Option – Expanded Passageway Looking West



Figure 9-15. Build Alternative Design Option – Expanded Passageway Entrance Looking West



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 Build Alternative Design Option requires modifications to the existing railroad signal, communication, and PTC systems and new signal houses, wayside signals, and ancillary 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 north of LAUS 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.

In the full build-out condition, new rail signal and communications infrastructure would also be required to facilitate increased and new run-through service for regional/intercity trains, and eventually HSR trains.

Utility Improvements

Numerous utility conflicts would occur upon implementation of the Build Alternative Design Option. The Build Alternative Design Option would require additional utility services for the new platform areas and the concourse-related improvements. Increased on-site water service would be required for fire flow and domestic flow demands and pressures and on the platforms. Additional power service connections from the City of Los Angeles Department of Water and

Power (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 amenities. These new utility services would not require any reconstruction of existing public utility lines outside of the Project footprint to accommodate the additional demands. The Build Alternative Design Option 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) and along the run-through track alignment south of LAUS. All utility work would be conducted in accordance with applicable utility design criteria and engineering standards. Existing streetlights and traffic signals may also be relocated or replaced, as needed.

Drainage and Water Quality Improvements

The Build Alternative Design Option 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 Build Alternative Design Option would include the following post-construction BMPs to address applicable stormwater requirements:

- North of LAUS, a structural stormwater vault is proposed to capture stormwater north of Vignes St. (subject to approval and further coordination with LASAN).
- At LAUS, capture-and-use BMPs (cisterns) are proposed in the vicinity of the rail yard. (subject to approval and further coordination with LASAN).
- South of LAUS and US-101, sand filter and downspout structures BMPs are proposed to treat the runoff from the run-through track viaduct structure and embankment (subject to approval and further coordination with LASAN).

Circulation and Streetscape Improvements

Circulation and streetscape improvements associated with the Build Alternative Design Option would enhance public safety. Safety improvements to portions of North Main Street and US-101 would be implemented as part of the Build Alternative Design Option, as would modifications to existing streetlights and traffic signals.

A description of the circulation and streetscape improvements are presented below. Roadway ROW widths are subject to the city's *Mobility Plan 2035*.

US-101

Implementation of run-through tracks over US-101 requires modifications to the lane geometry of the existing highway to accommodate the placement of bents and support structures in Caltrans ROW. The following highway modifications/safety improvements within the Caltrans ROW would require an encroachment permit as part of the Build Alternative Design Option:

US-101

- Improved median and shoulder horizontal clearances
- Increased horizontal stopping sight distance to provide required design speed
- Increased shoulder widths for enhanced horizontal clearance and safe refuge area for disabled vehicles
- Increased lane widths for reduced sideswipe collisions
- Improved lane geometry to provide increased comfort speed for existing super elevation
- 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
- Increased shoulder width for enhanced horizontal clearance and safe refuge area for disabled vehicles

Commercial Street On-Ramp (Southbound)

- Increased shoulder widths for enhanced horizontal clearance and safe refuge area for disabled vehicles

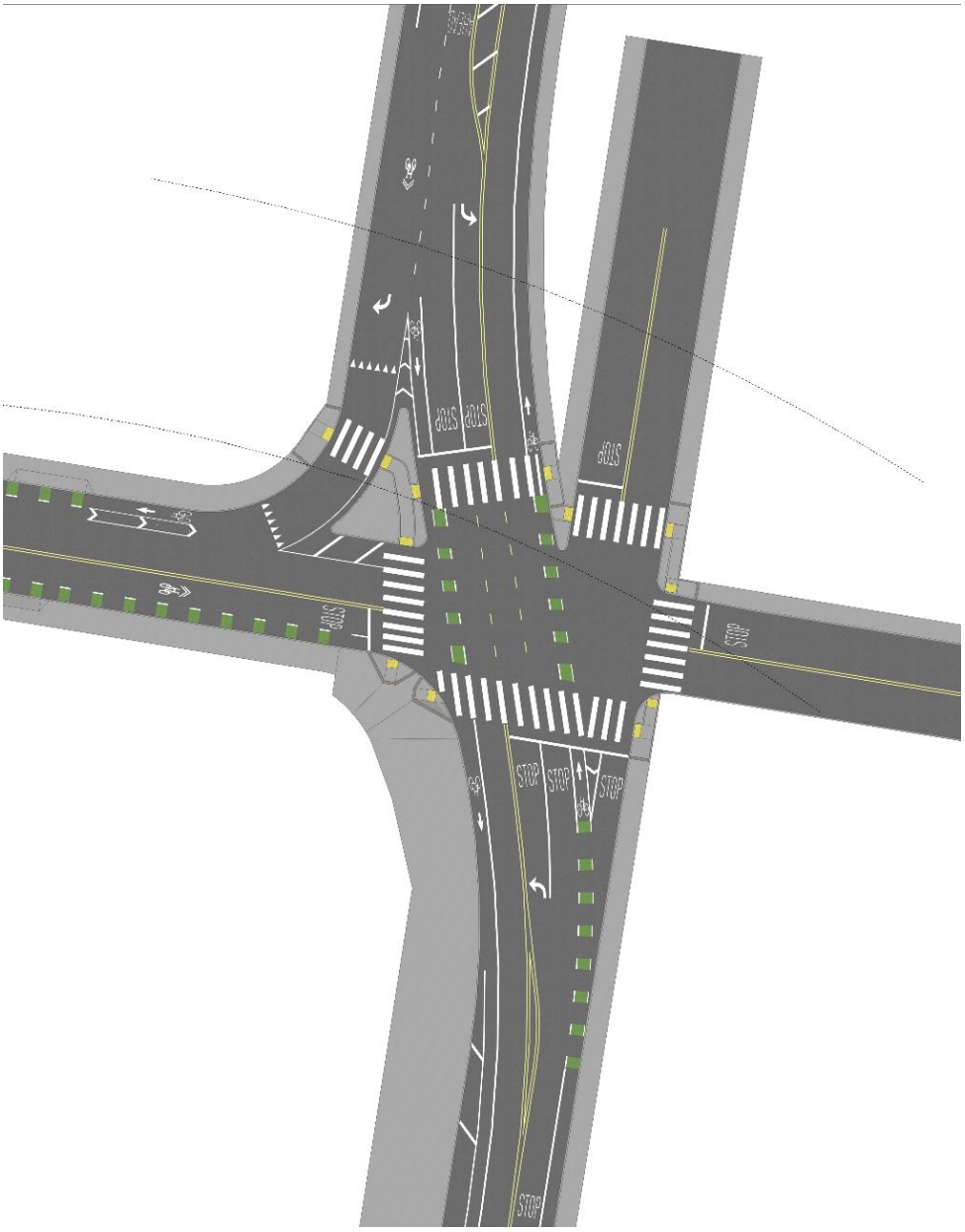
Commercial Street/Old Center Street

In the interim condition, Commercial Street between Garey Street and Center Street would be modified to accommodate streetscape improvements (street trees/pedestrian lighting and ADA improvements.

Center Street (between US-101 and Ducommun Street)

In the interim condition, Center Street from Ducommun Street to US-101 would be reconstructed to not preclude infrastructure improvements along this roadway envisioned as part of the *Connect US Action Plan*. As depicted on Figure 9-16, at the intersection of Center Street and Commercial Street, new sidewalks, bike lanes, and pedestrian safety/ADA features would be implemented as part of the Build Alternative Design Option.

Figure 9-16. Center Street/Commercial Street Intersection



North Main Street

Due to the projected increase in train movements anticipated through the North Main Street crossing, safety improvements in conjunction with a future quiet zone are being jointly coordinated between the City of Los Angeles and Metro. In the interim condition, the Build Alternative Design Option includes safety improvements that would be constructed at the North Main Street at-grade railroad crossing to support the future implementation of a quiet zone by the City of Los Angeles. The implementation of a future quiet zone is subject to review and approval by the California Public Utilities Commission (CPUC) (Figure 9-17).

North of CP Chavez, the Build Alternative Design Option would include the following safety improvements at North Main Street:

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

On March 5, 2024, Measure HLA, also known as Healthy Streets LA, was passed and requires the City of Los Angeles to install street enhancements outlined in its *Mobility Plan 2035* when making road repairs. Based on comments received during the public comment period, Metro modified the design of the proposed North Main Street safety improvements to remove the median and accommodate future active transportation roadway improvements. The key components of the safety improvements, revised based on receipt of public and agency comments, are depicted on Figure 9-17.

In the full build-out condition, no additional safety improvements would be implemented at North Main Street. In support of the Burbank to Los Angeles Project Section of the planned HSR system, CHSRA may implement a future grade separation at North Main Street to support operation of the planned HSR system as early as 2033. Upon implementation of the planned HSR system, the safety improvements (and quiet zone infrastructure constructed by City of Los Angeles) would be removed by CHSRA to facilitate construction of a grade separation for HSR trains.

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Figure 9-17. Safety Improvements at the North Main Street At-Grade Public Crossing



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9.10.2 Rail Yard Canopy – Individual Canopies over Rail Yard

The existing historic butterfly canopies that extend above Platforms 2 through 5 would be replaced with new individual canopies above each reconstructed platform. New individual canopies would be constructed in the full build-out condition in conjunction with other partially elevated rail yard and concourse-related improvements. Individual canopies would extend up to 25 feet above each platform, be similar in form to the existing butterfly canopies, but sized 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.

9.11 Potentially Affected Parcels

Table 9-3 and Figure 9-18 identifies the 18 non-Metro-owned parcels within the Project footprint that would be potentially affected by the Build Alternative Design Option. Maintenance easements are accounted for within the limits of the Project Footprint. The *NEPA Alternatives Evaluation Memorandum and Engineering Plans* (Appendix D of this EIS) includes more detail on the description of property impacts for each potentially affected parcel.

Table 9-3. Summary of Non-Metro-Owned Potentially Affected Parcels

Assessor's Parcel Number	Parcel Name	Description of Property Impact
Throat Segment		
5409-012-903	HACLA William Mead Homes Parcel	TCE for Construction Access and Temporary Loss of Parking
5409-010-032	Kelite Parcel	TCE for Construction Access
5409-014-902	Los Angeles County Men's Central Jail Parcel	TCE for Construction Access
5409-013-913	LADWP Parcel	TCE for Construction Access and Potential Acquisition (Partial)
5409-013-915	City of Los Angeles Parcel	Potential Acquisition (Partial) related to design changes for North Main Street Safety Improvements
Concourse Segment		
5409-022-905	Denny's Parcel	TCE for Construction Staging/Laydown Area and Temporary Loss of Parking
5409-023-930	MWD Parcel	Potential Road Widening for Baggage Movement

Table 9-3. Summary of Non-Metro-Owned Potentially Affected Parcels

Assessor's Parcel Number	Parcel Name	Description of Property Impact
Run-Through Segment		
5173-003-011	PBR Realty Parcel	Potential Acquisition
5173-003-900	Caltrans Parcel	Potential Acquisition
5173-003-012	PBR Realty Parcel	Potential Acquisition
5173-018-001	PBR Realty Parcel	Potential Acquisition
5173-017-008	Stiizy LA Parcel	TCE for Construction Access
5173-019-006	Life Storage Building Parcel	Potential Acquisition and Building Demolition
5163-017-806	BNSF West Bank Yard	Potential Acquisition (Partial)
5173-023-805	BNSF West Bank Yard	Potential Acquisition (Full)
5173-022-808	BNSF West Bank Yard	Potential Acquisition (Full)
5173-021-811	BNSF West Bank Yard	Potential Acquisition (Full)
5173-021-813	BNSF West Bank Yard	Potential Acquisition (Full)

Source: HDR 2023
Notes:
APN=Assessor's Parcel Number; HACLA=Housing Authority of City of Los Angeles; LADWP=Los Angeles Department of Water and Power; MWD=Metropolitan Water District; TCE=Temporary Construction Easement

9.12 Depths of Disturbance

The estimated maximum excavation depth for the major components associated with the Build Alternative Design Option is depicted on Figure 9-19 and shown on Table 9-4.

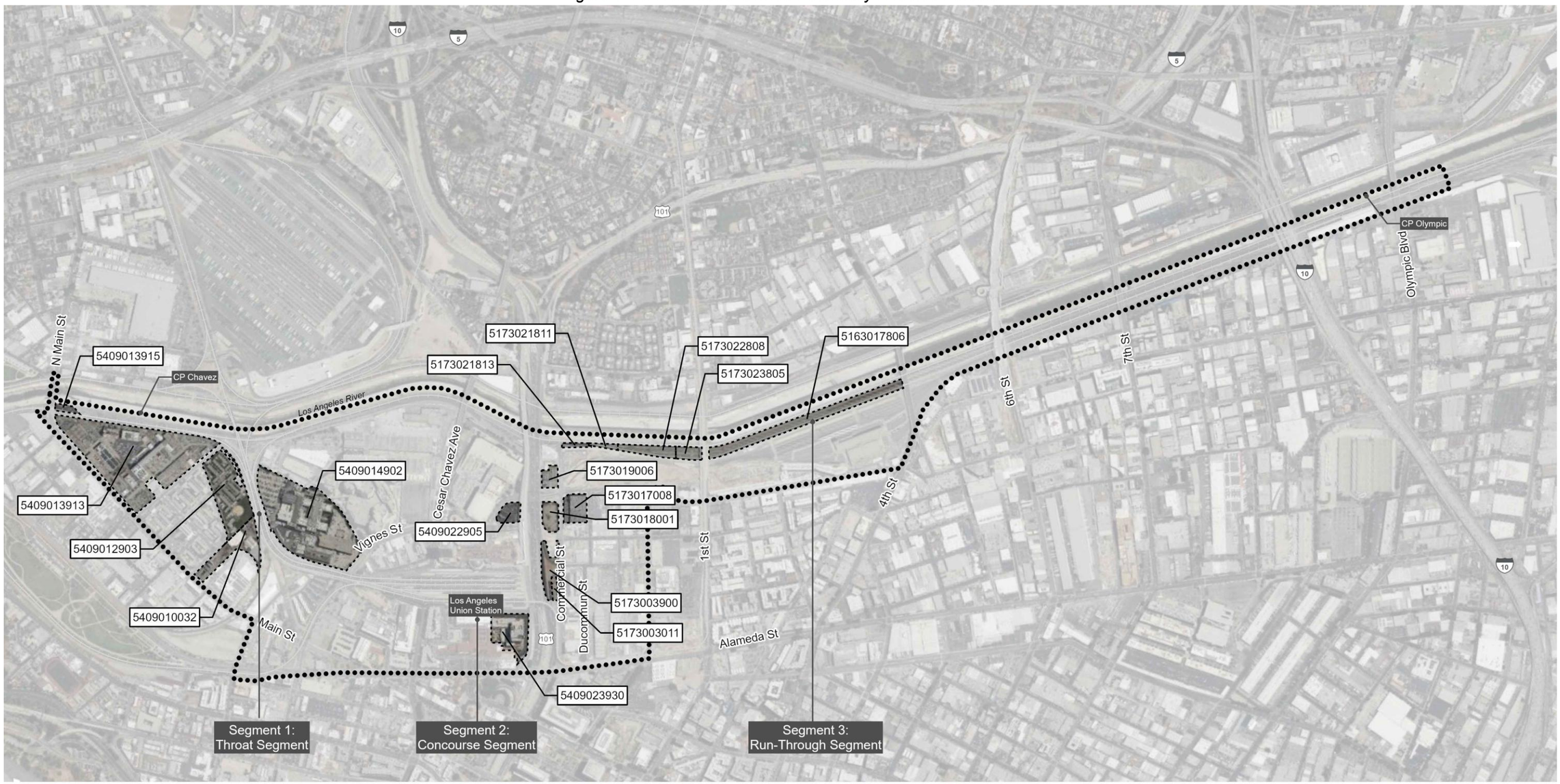
Table 9-4. Estimated Maximum Excavation Depths

Major Project Component	Ground-Disturbing Construction Activity	Maximum Depth Associated with Ground Disturbance
Throat reconstruction	Utility relocations	Up to 20 feet
	Track widening	Up to 5 feet
	Throat reconstruction (over excavation only)	Up to 5 feet
	Cesar Chavez Avenue bridge supports	Up to 100 feet
	Drainage improvements (cistern)	Up to 10 feet
	North Main Street Bridge safety improvements	Up to 5 feet
Partially Elevated rail yard/concourse-related improvements	Expanded passageway	Up to 20 feet
	East Plaza	Up to 10 feet
	Utility relocations	Up to 10 feet
	Drainage improvements (cisterns)	Up to 10 feet
Run-through tracks	Support piers/bents	Up to 100 feet
	Utility relocations	Up to 20 feet
Main line connection	Support piers	Up to 100 feet
	Track reconstruction (over excavation only)	Up to 5 feet
	BNSF West Bank Yard track work	Up to 5 feet

Source: HDR 2025
Notes:
Anticipated depths of disturbance are for Project-related infrastructure only and do not account for additional excavation required for potentially hazardous materials.

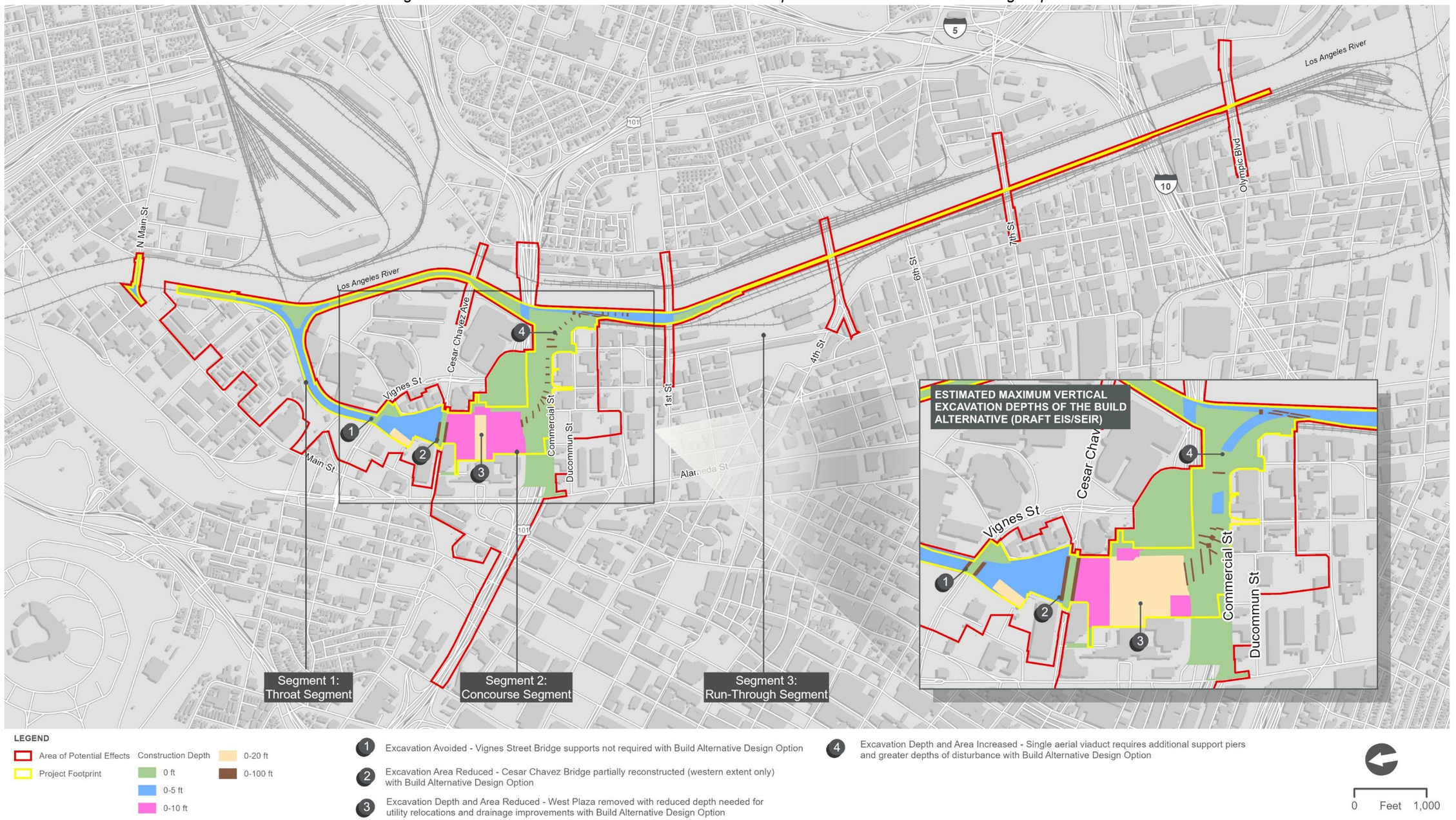
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Figure 9-18. Non-Metro-Owned Potentially Affected Parcels



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Figure 9-19. Estimated Maximum Vertical Excavation Depths of the Build Alternative Design Option



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9.13 Project Cost and Funding Sources

Capital expenditures during the Interim Condition are expected to be $1.597 billion. During the Full Build-Out Condition, an additional $1.15 billion of capital expenditure is expected. This cost includes design, construction, ROW, and environmental mitigation expenditures. The capital costs presented in this chapter are not inclusive of Metro's project development costs. As the Project moves through subsequent phases of design, the costs and implementation schedule would be further refined.

The following federal, state, and local revenue sources are some of the possible sources of funding for the Project:

- Federal sources
  - Capital Investment Grants Program (FTA)
  - Transportation Infrastructure Finance and Innovation Act (United States Department of Transportation [USDOT])
  - Better Utilizing Investments to Leverage Development Program (USDOT)
  - Congestion Management and Air Quality Program (Federal Highway Administration [FHWA])
  - Other future USDOT, FTA and FRA funding, Urban Area Formula Grant
- State sources
  - Proposition 1A HSR Bond
  - Transit and Intercity Rail Capital Program
  - State Transportation Improvement Program
  - Trade Corridor Enhancement Program
  - Regional Improvement Program
  - Traffic Congestion Relief Program
  - California Cap-and-Trade Program
  - Regional Surface Transportation Program
- Local sources
  - Measure R Sales Tax
  - Local Agency Funds
  - Proposition A Sales Tax
  - Proposition C Sales Tax
  - Measure M Sales Tax

9.14 Environmental Evaluation of the Build Alternative Design Option

The scope and scale of infrastructure improvements as part of the Build Alternative Design Option are: 1) smaller in scale than the as key components of the Build Alternative; and 2) fully located within the Project footprint of the Build Alternative. This section presents the environmental analysis conducted to determine if the Build Alternative Design Option would result in: 1) substantial changes relevant to environmental concerns; 2) significant new circumstances or information; 3) a minor variation; or 4) effects that remain qualitatively within the spectrum of alternatives previously analyzed.

This detailed analysis identifies similarities and differences, where applicable addresses all environmental topic areas in Section 9.13.5, with an additional quantitative level of analysis for key resource areas that relate to previous environmental concerns, including Traffic; Air Quality and Global Climate Change; Noise and Vibration; and Economic and Fiscal Impacts. As discussed in the analysis below for Traffic, Air Quality and Global Climate Change, and Noise and Vibration, a 15 percent reduction of construction-related activities was assumed for the Build Alternative Design Option. The environmental evaluation addresses the reduction in the scope and scale of infrastructure for the Build Alternative Design Option compared to the Build Alternative, specifically related to the following reductions to proposed infrastructure:

1. Retaining the existing Vignes Street Bridge instead of replacing it (one less bridge reconstructed),
2. Fewer platforms raised with narrower passageway under partially elevated LAUS rail yard,
3. Partial reconstruction of the Cesar Chavez Avenue Bridge (western extent only), and
4. Fewer run-through tracks on a narrower single aerial viaduct from LAUS to the West Bank of the Los Angeles River (2 fewer run-through tracks).

The 15 percent reduction compared to the Build Alternative is a conservative estimate given the reduced scope of the Build Alternative Design Option. No change to the duration of the 6-year construction schedule for the Build Alternative was assumed because the means and methods to construct the proposed infrastructure remains the same under the Build Alternative and the Build Alternative Design Option.

9.14.1 Environmental Evaluation of the Build Alternative Design Option – Traffic

Approach and Methodology

For the purpose of the environmental evaluation related to traffic, with the reduced scope of the Build Alternative Design Option, there would be approximately 15 percent less on-road and off-road construction vehicle trips compared to the Build Alternative. These changes are reflected

quantitatively in the analysis for construction impacts below. To identify the maximum possible traffic disruption, only off-peak vehicle trips were reduced. This is a conservative assumption to show the greatest magnitude of environmental effects.

Construction

Removal of the Vignes Street Bridge replacement would eliminate the need for a construction detour and street closure of Vignes Street (see EIS Figure 3.3-5).

As discussed above, the reduced scope of the Build Alternative Design Option would result in fewer construction-related trips, as shown below in Table 9-5. The Build Alternative Design Option would result in reduced total daily construction trips as compared to the Build Alternative. Construction trips during the AM and PM peak periods would experience no change under the Build Alternative Design Option, as compared to the Build Alternative. This is because typically a substantial amount of the total daily construction trips such as workers and equipment usually takes place outside of the AM and PM peak periods. This is especially true for any construction taking place within the LA downtown region due to high traffic congestion during the peak period. The Construction Transportation Management Plan (TMP) required by Mitigation Measure TR-1 memorializes this requirement by including provisions that require the contractor to minimize construction related vehicular traffic impacts during the peak hour and 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 during construction.

The total daily construction trips for the Build Alternative Design Option with a 15 percent reduction are shown in Table 9-5.

Table 9-5. Construction Trip Generation for Build Alternative Design Option

Trip Type	Number Required per Day	Unit	Daily Trips (passenger car equivalent)	AM Peak Hour (passenger car equivalent)			PM Peak Hour (passenger car equivalent)		
				In	Out	Total	In	Out	Total
Phase 1									
Employee vehicles/ construction worker trips	519	Workers	1,037	610	0	610	0	244	244
Trucks	54	Trucks	268	20	20	40	8	8	16
Total trips - Phase 1	—	—	1,305	630	20	650	8	252	260
Phase 2									
Employee vehicles/ construction worker trips	318	Workers	636	374	0	374	0	150	150
Trucks	42	Trucks	208	16	16	32	6	6	12
Total trips - Phase 2	—	—	844	390	16	406	6	156	162
Phase 3									
Employee vehicles/ construction worker trips	341	Workers	682	401	0	401	0	160	160
Trucks	47	Trucks	234	18	18	36	7	7	14
Total trips - Phase 3	—	—	916	419	18	437	7	167	174
Phase 4									
Employee vehicles/ construction worker trips	386	Workers	772	454	0	454	0	182	182
Trucks	10	Trucks	51	4	4	8	2	2	4

Table 9-5. Construction Trip Generation for Build Alternative Design Option

Trip Type	Number Required per Day	Unit	Daily Trips (passenger car equivalent)	AM Peak Hour (passenger car equivalent)			PM Peak Hour (passenger car equivalent)		
				In	Out	Total	In	Out	Total
Total trips - Phase 4	—	—	823	458	4	462	2	184	186
Total construction traffic in passenger car equivalent (worst phase)			**1,305**	**630**	**20**	**650**	**8**	**252**	**260**

Notes:
Passenger car equivalent of 5.0 for truck trips.
For AM peak hour truck trips, hourly average of daily truck trips was split equally for inbound and outbound. Assumed that PM peak hour truck trips would be 40 percent of AM peak hour trips.
Assumed 8-hour workday.

Operations

Vehicle trips during Project operations would not change for the Build Alternative Design Option because estimated Project trips are related to the proposed transit-oriented retail and office/commercial space proposed in the East Plaza, and no changes are proposed to these land uses. No change to these land uses would occur upon implementation of the Build Alternative Design Option; therefore, the operational trips would remain unchanged.

Mitigation Measures

Mitigation Measures TR-1, TR-2, and TR-3 (described in Section 3.3, Transportation) remain applicable to the Build Alternative Design Option to reduce adverse effects. No new or substantially modified mitigation measures are required.

NEPA Determination

The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the DEIS, with no new or increased environmental impacts. The magnitude of construction related traffic is reduced due to the 15 percent reduction of daily construction trips under the Build Alternative Design Option. Therefore, a Supplemental EIS is not required.

9.14.2 Environmental Evaluation of the Build Alternative Design Option – Air Quality and Global Climate Change

Approach and Methodology

For the purpose of the environmental evaluation related to air quality and global climate change, with the reduced scope of the Build Alternative Design Option, similar to the approach for Traffic, the construction activity for both on-road vehicles and off-road equipment would be approximately

15 percent less as compared to the Build Alternative. These changes are reflected quantitatively in the analysis for construction impacts below.

Construction

Table 9-6 presents the annual construction emissions without mitigation for the Build Alternative Design Option, combined with the Malabar Yard railroad improvements. There are no changes to the Malabar yard railroad improvements as part of the Build Alternative Design Option.

Reduced construction activity for the Build Alternative Design Option would result in approximately 15 percent less construction-related GHG emissions as compared to the Build Alternative.

The Build Alternative Design Option reduces ROG, CO, NO_x, SO_x, and CO_2e pollutant emissions by 15 percent compared to the Build Alternative. The reduction in emissions for these pollutants is proportional to the 15 percent reduction in hours of on-road and off-road equipment usage. Particulate matter emissions (including both PM_{10} and $PM_{2.5}$) are dominated by fugitive dust emissions (not exhaust emissions) and are determined by the acreage disturbed during construction. The Build Alternative Design Option does not include any changes to the Project footprint or daily disturbed area within the Project footprint, therefore, there is no change to fugitive dust emissions compared to the Build Alternative. As a result, the construction related PM_{10} and $PM_{2.5}$ emissions from the Build Alternative Design Option would be reduced by 1 percent and 2 percent, respectively.

Table 9-6. Annual Construction Emissions - Unmitigated (tons/year)

Source	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	CO_2e
Build Alternative Design Option						
Off-Road Equipment	90.8	14.3	101.9	7.1	5.1	28,922
On-Road Equipment	27.3	0.6	7.3	2.9	1.2	11,795
Fugitive Dust	–	–	–	225.0	47.3	–
Total	118.1	14.9	109.3	235.0	53.5	40,717
Average Year	**19.7**	**2.5**	**18.2**	**39.2**	**8.9**	**6,786**
Build Alternative Average Year	**23.2**	**2.9**	**21.4**	**39.5**	**9.1**	**7,983.8**
% change from Table 6-1 of Appendix G	**-15%**	**-15%**	**-15%**	**-1%**	**-2%**	**-15%**

Table 9-6. Annual Construction Emissions - Unmitigated (tons/year)

Source	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	CO_2e
Malabar Yard Railroad Improvements						
Year - 2028	1.2	0.1	1.5	<0.1	<0.1	276
Year - 2029	4.0	0.5	5.2	0.3	0.2	946
Year - 2030	1.9	0.5	7.1	0.2	<0.1	1,385
Maximum Year	4.0	0.5	7.1	0.3	0.2	1,385
Combined Build Alternative Design Option and Malabar Yard	**23.7**	**3.0**	**25.3**	**39.5**	**9.1**	**8,171**
De minimis level	10	10	100	100	70	NA
Exceedance	**Yes**	No	No	No	No	NA

Notes:
SO_2 is in attainment and does not have an applicable de minimis level in the South Coast Air Basin.
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$=particles of 2.5 microns or less; ROG=reactive organic gas

Table 9-6 indicates that prior to implementation of mitigation, the annual construction emissions associated with the Build Alternative Design Option combined with Malabar Yard railroad improvements would exceed the *de minimis* levels for NO_x.

Implementation of Mitigation Measure AQ-2 (described in Section 3.5, *Air Quality and Global Climate Change)* and Malabar Yard Mitigation Measure AQ-2 (described in Draft EIR/EIS Appendix Q, Section 3.5, *Air Quality and Global Climate Change),* presented below, is proposed to reduce the NO_x emissions during construction. Mitigation Measure AQ-1 is required as part of the Final EIR and Malabar Yard Mitigation Measure AQ-1 (MY AQ-1) is required by SCAQMD to reduce daily fugitive dust emissions and has been included in the calculation of the mitigated annual construction emissions presented in Table 9-7. Mitigation Measure AQ-1 is not presented in this analysis because it is not required as mitigation to reduce NO_x emissions during construction.

AQ-2: **Compliance with U.S. EPA's Tier 4 Final 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.

MY AQ-2 (same as Mitigation Measure AQ-2)

Table 9-7 presents the annual construction emissions for the Build Alternative Design Option and Malabar Yard railroad improvements after implementation of Mitigation Measure AQ-2.

Table 9-7. Annual Construction Emissions After Mitigation (tons/year)

Source	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	CO_2e
Build Alternative Design Option						
Off-Road Equipment	15.3	5.5	26.5	2.5	1.2	18,192
On-Road Equipment	27.3	0.6	7.3	2.9	1.2	11,795
Fugitive Dust	–	–	–	112.5	23.6	–
Total	42.6	6.1	33.8	118.0	26.0	29,987
Average Year	7.1	1.0	5.6	19.7	4.3	4,998
Build Alternative Average Year	8.3	1.2	6.6	19.8	4.4	5,879.8
% change from Table 6-1 of Appendix G	**-15%**	**-15%**	**-15%**	**-1%**	**-2%**	**-15%**
Malabar Yard Railroad Improvements						
Year - 2028	0.2	<0.1	1.9	<0.1	<0.1	276
Year - 2029	0.6	0.1	6.5	<0.1	<0.1	946
Year - 2030	0.8	0.2	8.5	0.1	<0.1	1,385
Maximum Year	0.8	0.2	8.5	0.1	<0.1	1,385
Combined Build Alternative Design Option and Malabar Yard	**7.9**	**1.2**	**14.1**	**19.8**	**4.4**	**6,383**
De minimis level	10	10	100	100	70	NA

Table 9-7. Annual Construction Emissions After Mitigation (tons/year)

Source	NOx	ROG	CO	PM_{10}	$PM_{2.5}$	CO_2e
Exceedance	No	No	No	No	No	NA

Notes:
SO_2 is in attainment and does not have an applicable de minimis level in the South Coast Air Basin.
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ROG=reactive organic gas

As shown in Table 9-7, with implementation of mitigation, annual construction emissions generated by the Build Alternative Design Option and Malabar Yard railroad improvements are below the general conformity *de minimis* levels applicable to the South Coast Air Basin. Upon implementation of mitigation, no adverse effects related to air quality would occur from construction of the Build Alternative Design Option or Malabar Yard railroad improvements.

Operations

Although the Build Alternative Design Option would include 8 run-through tracks instead of 10 run-through tracks, no changes to the volume of daily train trips would be anticipated with the Build Alternative Design Option. No changes to operational emissions would result from implementation of the Build Alternative Design Option.

Mitigation Measures

As mentioned above, Mitigation Measure AQ-2 (described in Section 3.5, *Air Quality and Global Climate Change)* and Malabar Yard Mitigation Measure AQ-2 (described in Appendix Q, Section 3.5, *Air Quality and Global Climate Change)* remain applicable to the Build Alternative Design Option to reduce adverse effects during construction. No new or substantially modified mitigation measures are required.

NEPA Determination

With reduced construction activity that would result in approximately 15 percent less construction-related emissions, a reduced magnitude of construction-related air quality impacts associated with the Build Alternative Design Option would occur. No changes to operational emissions would result from implementation of the Build Alternative Design Option.

The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the DEIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

9.14.3 Environmental Evaluation of the Build Alternative Design Option – Noise and Vibration

Approach and Methodology

For the purpose of the environmental evaluation related to noise and vibration, with the reduced scope of the Build Alternative Design Option, similar to the approach for Traffic and Air Quality and Global Climate Change, the construction activity for both on-road vehicles and off-road equipment would be approximately 15 percent less as compared to the Build Alternative. These changes are reflected quantitatively in the analysis for construction impacts below.

Construction

Noise

While less construction volume does not imply that the peak noise impacts will be lower every day, the reduced scope of the Build Alternative Design Option would result in lower noise levels during construction of the Build Alternative Design Option, as compared to the Build Alternative. The frequency and duration of noise impacts would be reduced as less construction activity is required for the Build Alternative Design Option Additionally, the removal of the Vignes Street Bridge replacement would eliminate the need for pile driving, which would result in a substantially lower impact related to noise and vibration at the Care First Village. Table 9-8 below summarizes construction noise levels for the anticipated phases of construction of the Build Alternative Design Option. Detailed calculations for each sensitive receptor considered in the analysis are also provided in Table 9-9.

As summarized below and on Figure 9-20, construction impacts would be reduced for the Build Alternative Design Option, specifically throughout the duration of construction. The maximum number of impacts at each receptor group are:

- 17 units impacted at William Mead Homes
- 23 units impacted at Mozaic Apartments
- 25 units impacted at Care First Village

Table 9-8. Construction Noise Levels

Phase	Sub-Phase	Equipment[a]			Composite Sound Level (L_{eq}) at Distance[c] Variable Distances (feet)					
		Type	Quantity	L_{max} at 50 feet[b]	50	100	200	400	800	1000
Segment 1: Throat Segment	—	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	—	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 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						
	BNSF West Bank Yard earthwork	Dozer	2	82	84	78	72	66	60	58
		Wheel loader	2	79						

Table 9-8. Construction Noise Levels

Phase	Sub-Phase	Equipment[a]			Composite Sound Level (L_{eq}) at Distance[c]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50 feet[b]	50	100	200	400	800	1000
		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						

Notes:
a Equipment mix obtained from Project engineers 7/8/2016
b Measured Lmax at given reference distance obtained from the Federal Highway Administration Roadway Construction Noise Model, Federal Highway Administration 2018 and/or FTA Noise and Vibration Guidance 2018
c 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 the 2006 Federal Highway Administration Roadway Construction Noise Model.
Leq=equivalent noise level; Lmax=maximum sound level

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct Cast-in-drilled-hole piles	Segment 3 Viaduct Superstructure placement	Segment 3 Viaduct Pile driving for abutments	Segment 3 Viaduct Bridge earthwork	Segment 3 Westbank Yard BNSF West Bank Yard earthwork	Segment 3 Westbank Yard BNSF West Bank Yard rail placement	Noise Walls
William Mead Homes	WM1	3	1	61	51	47	45	56	43	47	48	54
	WM2	2	40	61	50	47	45	56	43	47	48	54
	WM3	2	40	60	50	47	45	56	43	47	48	52
	WM4	2	12	63	52	48	46	57	44	47	48	57
	WM5	2	11	61	51	47	45	56	43	47	48	55
	WM6	2	16	79	51	48	46	57	44	49	50	76
	WM7	2	38	72	51	48	46	57	44	49	50	66
	WM8	2	24	76	52	48	46	57	44	49	50	70
	WM9	2	46	71	52	48	46	57	44	49	50	66
	WM10	2	20	67	51	47	45	56	43	48	49	61
	WM11	2	40	64	51	47	45	56	43	48	49	58
	WM12	2	40	62	51	47	45	56	43	47	48	56
	WM13	2	32	64	51	48	46	57	44	48	49	57
	WM14	2	40	66	52	48	46	57	44	48	49	60
	WM15	2	16	65	52	48	46	57	44	48	49	59
	PK1	3	1	79	53	49	47	58	45	49	50	75
Metro Senior Housing	TT1	2	123	67	62	54	52	63	50	53	54	51
Los Angeles Central Jail	CJ1	2	4000	74	59	53	51	62	49	51	52	54
Twin Towers Correctional Facility	MT1	2	9500	58	55	50	48	59	46	47	48	49
Mosaic Apartments East Building	MA12a	2	3	75	84	60	58	69	56	52	53	46
	MA13a	2	3	73	82	59	57	68	55	52	53	46
	MA14a	2	3	71	80	59	57	68	55	52	53	46
	MA15a	2	3	70	76	59	57	68	55	52	53	46
	MA1a	2	3	80	80	58	56	67	54	52	53	47
	MA2a	2	3	75	75	58	56	67	54	51	52	47
	MA3a	2	3	72	72	58	56	67	54	51	52	47
	MA4a	2	3	70	70	57	55	66	53	51	52	46
	MA5a	2	3	68	68	57	55	66	53	51	52	46
	MA11a	2	3	70	72	58	56	67	54	51	52	46
	MA10a	2	3	71	73	58	56	67	54	51	52	46
	MA9a	2	3	73	74	58	56	67	54	51	52	46

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct Cast-in-drilled-hole piles	Segment 3 Viaduct Superstructure placement	Segment 3 Viaduct Pile driving for abutments	Segment 3 Viaduct Bridge earthwork	Segment 3 Westbank Yard BNSF West Bank Yard earthwork	Segment 3 Westbank Yard BNSF West Bank Yard rail placement	Noise Walls
	MA8a	2	3	74	75	59	57	68	55	52	53	46
	MA7a	2	3	76	77	59	57	68	55	52	53	46
	MA6a	2	3	78	80	59	57	68	55	52	53	46
	MA12b	2	3	75	84	60	58	69	56	52	53	46
	MA13b	2	3	73	82	59	57	68	55	52	53	46
	MA14b	2	3	71	80	59	57	68	55	52	53	46
	MA15b	2	3	70	76	59	57	68	55	52	53	46
	MA1b	2	3	80	80	58	56	67	54	52	53	47
	MA2b	2	3	75	75	58	56	67	54	51	52	47
	MA3b	2	3	72	72	58	56	67	54	51	52	47
	MA4b	2	3	70	70	57	55	66	53	51	52	46
	MA5b	2	3	68	68	57	55	66	53	51	52	46
	MA11b	2	3	70	72	58	56	67	54	51	52	46
	MA10b	2	3	71	73	58	56	67	54	51	52	46
	MA9b	2	3	73	74	58	56	67	54	51	52	46
	MA8b	2	3	74	75	59	57	68	55	52	53	46
	MA7b	2	3	76	77	59	57	68	55	52	53	46
	MA6b	2	3	78	80	59	57	68	55	52	53	46
	MA12c	2	3	75	84	60	58	69	56	52	53	46
	MA13c	2	3	73	82	59	57	68	55	52	53	46
	MA14c	2	3	71	80	59	57	68	55	52	53	46
	MA15c	2	3	70	76	59	57	68	55	52	53	46
	MA1c	2	3	80	80	58	56	67	54	52	53	47
	MA2c	2	3	75	75	58	56	67	54	51	52	47
	MA3c	2	3	72	72	58	56	67	54	51	52	47
	MA4c	2	3	70	70	57	55	66	53	51	52	46
	MA5c	2	3	68	68	57	55	66	53	51	52	46
	MA11c	2	3	70	72	58	56	67	54	51	52	46
	MA10c	2	3	71	73	58	56	67	54	51	52	46
	MA9c	2	3	73	74	58	56	67	54	51	52	46
	MA8c	2	3	74	75	59	57	68	55	52	53	46

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct Cast-in-drilled-hole piles	Segment 3 Viaduct Superstructure placement	Segment 3 Viaduct Pile driving for abutments	Segment 3 Viaduct Bridge earthwork	Segment 3 Westbank Yard BNSF West Bank Yard earthwork	Segment 3 Westbank Yard BNSF West Bank Yard rail placement	Noise Walls
	MA7c	2	3	76	77	59	57	68	55	52	53	46
	MA6c	2	3	78	80	59	57	68	55	52	53	46
	MA12d	2	3	75	84	60	58	69	56	52	53	46
	MA13d	2	3	73	82	59	57	68	55	52	53	46
	MA14d	2	3	71	80	59	57	68	55	52	53	46
	MA15d	2	3	70	76	59	57	68	55	52	53	46
	MA1d	2	3	80	80	58	56	67	54	52	53	47
	MA2d	2	3	75	75	58	56	67	54	51	52	47
	MA3d	2	3	72	72	58	56	67	54	51	52	47
	MA4d	2	3	70	70	57	55	66	53	51	52	46
	MA5d	2	3	68	68	57	55	66	53	51	52	46
	MA11d	2	3	70	72	58	56	67	54	51	52	46
	MA10d	2	3	71	73	58	56	67	54	51	52	46
	MA9d	2	3	73	74	58	56	67	54	51	52	46
	MA8d	2	3	74	75	59	57	68	55	52	53	46
	MA7d	2	3	76	77	59	57	68	55	52	53	46
	MA6d	2	3	78	80	59	57	68	55	52	53	46
Mosaic Apartments West Building	MA16a	2	2	66	66	57	55	66	53	50	51	46
	MA17a	2	2	64	65	56	54	65	52	50	51	46
	MA18a	2	2	64	65	56	54	65	52	50	51	46
	MA19a	2	2	63	64	56	54	65	52	50	51	46
	MA20a	2	2	62	63	56	54	65	52	50	51	46
	MA21a	2	2	62	64	56	54	65	52	50	51	45
	MA22a	2	2	62	64	57	55	66	53	50	51	45
	MA23a	2	2	62	64	57	55	66	53	50	51	45
	MA24a	2	2	64	66	57	55	66	53	50	51	45
	MA25a	2	2	66	68	58	56	67	54	51	52	46
	MA26a	2	2	64	65	57	55	66	53	50	51	46
	MA16b	2	2	66	66	57	55	66	53	50	51	46
	MA17b	2	2	64	65	56	54	65	52	50	51	46
	MA18b	2	2	64	65	56	54	65	52	50	51	46
	MA19b	2	2	63	64	56	54	65	52	50	51	46

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct Cast-in-drilled-hole piles	Segment 3 Viaduct Superstructure placement	Segment 3 Viaduct Pile driving for abutments	Segment 3 Viaduct Bridge earthwork	Segment 3 Westbank Yard BNSF West Bank Yard earthwork	Segment 3 Westbank Yard BNSF West Bank Yard rail placement	Noise Walls
	MA20b	2	2	62	63	56	54	65	52	50	51	46
	MA21b	2	2	62	64	56	54	65	52	50	51	45
	MA22b	2	2	62	64	57	55	66	53	50	51	45
	MA23b	2	2	62	64	57	55	66	53	50	51	45
	MA24b	2	2	64	66	57	55	66	53	50	51	45
	MA25b	2	2	66	68	58	56	67	54	51	52	46
	MA26b	2	2	64	65	57	55	66	53	50	51	46
	MA16c	2	2	66	66	57	55	66	53	50	51	46
	MA17c	2	2	64	65	56	54	65	52	50	51	46
	MA18c	2	2	64	65	56	54	65	52	50	51	46
	MA19c	2	2	63	64	56	54	65	52	50	51	46
	MA20c	2	2	62	63	56	54	65	52	50	51	46
	MA21c	2	2	62	64	56	54	65	52	50	51	45
	MA22c	2	2	62	64	57	55	66	53	50	51	45
	MA23c	2	2	62	64	57	55	66	53	50	51	45
	MA24c	2	2	64	66	57	55	66	53	50	51	45
	MA25c	2	2	66	68	58	56	67	54	51	52	46
	MA26c	2	2	64	65	57	55	66	53	50	51	46
	MA16d	2	2	66	66	57	55	66	53	50	51	46
	MA17d	2	2	64	65	56	54	65	52	50	51	46
	MA18d	2	2	64	65	56	54	65	52	50	51	46
	MA19d	2	2	63	64	56	54	65	52	50	51	46
	MA20d	2	2	62	63	56	54	65	52	50	51	46
	MA21d	2	2	62	64	56	54	65	52	50	51	45
	MA22d	2	2	62	64	57	55	66	53	50	51	45
	MA23d	2	2	62	64	57	55	66	53	50	51	45
	MA24d	2	2	64	66	57	55	66	53	50	51	45
	MA25d	2	2	66	68	58	56	67	54	51	52	46
	MA26d	2	2	64	65	57	55	66	53	50	51	46
One Santa Fe Apartments	SF1	2	13	46	48	49	47	58	45	61	62	36
	SF2	2	13	46	48	49	47	58	45	62	63	37
	SF3	2	13	47	49	49	47	58	45	61	62	37

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct: Cast-in-drilled-hole piles	Segment 3 Viaduct: Superstructure placement	Segment 3 Viaduct: Pile driving for abutments	Segment 3 Viaduct: Bridge earthwork	Segment 3 Westbank Yard: BNSF West Bank Yard earthwork	Segment 3 Westbank Yard: BNSF West Bank Yard rail placement	Noise Walls
	SF4	2	13	47	49	49	47	58	45	63	64	37
	SF5	2	13	47	49	49	47	58	45	62	63	37
	SF6	2	13	47	49	49	47	58	45	64	65	37
	SF7	2	13	47	49	50	48	59	46	63	64	37
	SF8	2	13	47	49	50	48	59	46	65	66	37
	SF9	2	13	47	49	50	48	59	46	64	65	37
	SF10	2	13	47	50	50	48	59	46	66	67	37
	SF11	2	13	48	50	50	48	59	46	65	66	37
	SF12	2	13	48	50	51	49	60	47	67	68	37
	SF13	2	13	48	50	51	49	60	47	64	65	37
	SF14	2	13	48	50	51	49	60	47	64	65	37
	SF15	2	13	47	50	50	48	59	46	63	64	37
	SF16	2	13	47	50	50	48	59	46	63	64	37
	SF17	2	13	47	49	50	48	59	46	63	64	37
	SF18	2	13	47	49	50	48	59	46	63	64	37
	SF19	2	13	47	49	50	48	59	46	62	63	37
	SF20	2	13	47	49	50	48	59	46	62	63	37
	SF21	2	13	47	50	50	48	59	46	62	63	37
	SF22	2	13	48	50	51	49	60	47	63	64	37
	SF23	2	13	48	50	51	49	60	47	63	64	37
	SF24	2	13	48	50	51	49	60	47	65	66	38
	SF25	2	13	48	51	52	50	61	48	64	65	38
	SF26	2	13	48	51	52	50	61	48	65	66	38
	SF27	2	13	49	51	52	50	61	48	64	65	38
	SF28	2	13	49	51	53	51	62	49	66	67	38
	SF29	2	13	49	52	53	51	62	49	65	66	38
	SF30	2	13	49	52	53	51	62	49	67	68	38
	SF31	2	13	49	52	54	52	63	50	65	66	38
	SF32	2	13	49	52	54	52	63	50	65	66	39
	SF33	2	13	50	53	54	52	63	50	66	67	39
	SF34	2	13	50	53	54	52	63	50	66	67	39
	HFC 1	2	5	82	69	62	60	71	58	60	61	75

Table 9-9. Construction Noise (dBA Leq) for Build Alternative Design Option

Noise Sensitive Area Description	Receptor ID	Land Use Category	# of Noise-Sensitive Sites Represented	Segment 1: Throat Segment	Segment 2: Concourse Segment	Segment 3 Viaduct Cast-in-drilled-hole piles	Segment 3 Viaduct Superstructure placement	Segment 3 Viaduct Pile driving for abutments	Segment 3 Viaduct Bridge earthwork	Segment 3 Westbank Yard BNSF West Bank Yard earthwork	Segment 3 Westbank Yard BNSF West Bank Yard rail placement	Noise Walls
Care First Village	HFC 2	2	5	82	68	62	60	71	58	60	61	75
	HFC 3	2	5	76	69	62	60	71	58	60	61	69
	HFC 4	2	5	77	68	62	60	71	58	60	61	70
	HFC 5	2	5	72	69	62	60	71	58	60	61	65
	HFC 6	2	5	73	68	62	60	71	58	60	61	66
	HFC 7	2	5	74	68	62	60	71	58	60	61	67
	HFC 8	2	5	69	68	62	60	71	58	60	61	62
	HFC 9	2	5	70	68	62	60	71	58	60	61	63
	HFC 10	2	5	72	68	62	60	71	58	60	61	65
	HFC 13	2	60	68	67	61	59	70	57	59	60	61
	HFC 16	2	72	67	67	61	59	70	57	59	60	60
	HFC 17	2	0	80	67	62	60	71	58	60	61	73
	HFC 18	2	5	79	69	62	60	71	58	60	61	72
	HFC 19	2	5	80	68	62	60	71	58	60	61	73
	HFC 20	2	5	76	68	62	60	71	58	60	61	69
	HFC 21	2	5	75	69	62	60	71	58	60	61	68
	HFC 22	2	5	71	69	62	60	71	58	60	61	64
	HFC 23	2	5	72	68	62	60	71	58	60	61	65
	HFC 24	2	5	73	68	62	60	71	58	60	61	66
	HFC 25	2	5	69	68	62	60	71	58	59	60	62
	HFC 26	2	5	70	68	62	60	71	58	59	60	63
	HFC 27	2	5	71	68	62	60	71	58	60	61	64
	HFC 28	3	1	80	69	63	61	72	59	60	61	73
Gateway Childcare Center	GCC	3	1	67	75	60	58	69	56	56	57	60

Figure 9-20. Maximum Number of Construction Nosie Impacts at Each Receptor Group



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Vibration

Lower vibration levels during construction of the Build Alternative Design Option, as compared to the Build Alternative, would also occur as a result of fewer raised platforms, reduced extent of the elevated rail yard, and fewer run-through tracks. The reduction in vibration impacts, as well as detailed calculations at each sensitive receptor for the Build Alternative Design Option are provided below in Table 9-10. In summary, the following receptors would be impacted:

- WM7 38 Noise Sensitive Site Represented – Pile Driver
- MA3a 3 Noise Sensitive Site Represented – Pile Driver
- MA3b 3 Noise Sensitive Site Represented – Pile Driver
- MA3c 3 Noise Sensitive Site Represented – Pile Driver
- MA3d 3 Noise Sensitive Site Represented – Pile Driver

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Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
WM2	40	0.003	56	0.001	46	0.2	80	No Impact	No Impact	No Impact	No Impact
WM3	40	0.003	57	0.001	47	0.2	80	No Impact	No Impact	No Impact	No Impact
WM4	12	0.002	55	0.001	45	0.2	80	No Impact	No Impact	No Impact	No Impact
WM5	11	0.003	57	0.001	47	0.2	80	No Impact	No Impact	No Impact	No Impact
WM6	16	0.002	55	0.001	45	0.2	80	No Impact	No Impact	No Impact	No Impact
WM7	38	0.073	85	0.024	75	0.2	80	No Impact	Impact	No Impact	No Impact
WM8	24	0.022	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
WM9	46	0.038	80	0.013	70	0.2	80	No Impact	No Impact	No Impact	No Impact
WM10	20	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
WM11	40	0.009	67	0.003	57	0.2	80	No Impact	No Impact	No Impact	No Impact
WM12	40	0.005	62	0.002	52	0.2	80	No Impact	No Impact	No Impact	No Impact
WM13	32	0.004	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
WM14	40	0.004	61	0.001	51	0.2	80	No Impact	No Impact	No Impact	No Impact
WM15	16	0.007	64	0.002	54	0.2	80	No Impact	No Impact	No Impact	No Impact
TT1	123	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
CJ1	4000	0.014	70	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
MT1	9500	0.008	66	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact
MA12a	3	0.023	75	0.008	65	0.2	80	No Impact	No Impact	No Impact	No Impact
MA13a	3	0.002	53	0.001	43	0.2	80	No Impact	No Impact	No Impact	No Impact
MA14a	3	0.028	77	0.009	67	0.2	80	No Impact	No Impact	No Impact	No Impact
MA15a	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA1a	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA2a	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA3a	3	0.042	80	0.014	70	0.2	80	No Impact	Impact	No Impact	No Impact
MA4a	3	0.024	75	0.008	65	0.2	80	No Impact	No Impact	No Impact	No Impact
MA5a	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA11a	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA10a	3	0.008	66	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact
MA9a	3	0.011	68	0.003	58	0.2	80	No Impact	No Impact	No Impact	No Impact
MA8a	3	0.013	70	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
MA7a	3	0.017	72	0.005	62	0.2	80	No Impact	No Impact	No Impact	No Impact
MA6a	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact

Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
MA12b	3	0.027	76	0.009	66	0.2	80	No Impact	No Impact	No Impact	No Impact
MA13b	3	0.035	79	0.011	69	0.2	80	No Impact	No Impact	No Impact	No Impact
MA14b	3	0.028	77	0.009	67	0.2	80	No Impact	No Impact	No Impact	No Impact
MA15b	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA1b	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA2b	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA3b	3	0.042	80	0.014	70	0.2	80	No Impact	Impact	No Impact	No Impact
MA4b	3	0.024	75	0.008	65	0.2	80	No Impact	No Impact	No Impact	No Impact
MA5b	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA11b	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA10b	3	0.008	66	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact
MA9b	3	0.011	68	0.003	58	0.2	80	No Impact	No Impact	No Impact	No Impact
MA8b	3	0.013	70	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
MA7b	3	0.017	72	0.005	62	0.2	80	No Impact	No Impact	No Impact	No Impact
MA6b	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA12c	3	0.027	76	0.009	66	0.2	80	No Impact	No Impact	No Impact	No Impact
MA13c	3	0.035	79	0.011	69	0.2	80	No Impact	No Impact	No Impact	No Impact
MA14c	3	0.028	77	0.009	67	0.2	80	No Impact	No Impact	No Impact	No Impact
MA15c	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA1c	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA2c	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA3c	3	0.042	80	0.014	70	0.2	80	No Impact	Impact	No Impact	No Impact
MA4c	3	0.024	75	0.008	65	0.2	80	No Impact	No Impact	No Impact	No Impact
MA5c	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA11c	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA10c	3	0.008	66	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact
MA9c	3	0.011	68	0.003	58	0.2	80	No Impact	No Impact	No Impact	No Impact
MA8c	3	0.013	70	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
MA7c	3	0.017	72	0.005	62	0.2	80	No Impact	No Impact	No Impact	No Impact
MA6c	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA12d	3	0.027	76	0.009	66	0.2	80	No Impact	No Impact	No Impact	No Impact
MA13d	3	0.035	79	0.011	69	0.2	80	No Impact	No Impact	No Impact	No Impact
MA14d	3	0.028	77	0.009	67	0.2	80	No Impact	No Impact	No Impact	No Impact
MA15d	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact

Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
MA1d	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA2d	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA3d	3	0.042	80	0.014	70	0.2	80	No Impact	Impact	No Impact	No Impact
MA4d	3	0.024	75	0.008	65	0.2	80	No Impact	No Impact	No Impact	No Impact
MA5d	3	0.015	71	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
MA11d	3	0.011	69	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
MA10d	3	0.008	66	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact
MA9d	3	0.011	68	0.003	58	0.2	80	No Impact	No Impact	No Impact	No Impact
MA8d	3	0.013	70	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
MA7d	3	0.017	72	0.005	62	0.2	80	No Impact	No Impact	No Impact	No Impact
MA6d	3	0.021	74	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
MA16a	2	0.027	76	0.009	66	0.2	80	No Impact	No Impact	No Impact	No Impact
MA17a	2	0.035	79	0.011	69	0.2	80	No Impact	No Impact	No Impact	No Impact
MA18a	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA19a	2	0.005	61	0.002	51	0.2	80	No Impact	No Impact	No Impact	No Impact
MA20a	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA21a	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA22a	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA23a	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA24a	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA25a	2	0.003	58	0.001	48	0.2	80	No Impact	No Impact	No Impact	No Impact
MA26a	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA16b	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA17b	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA18b	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA19b	2	0.005	61	0.002	51	0.2	80	No Impact	No Impact	No Impact	No Impact
MA20b	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA21b	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA22b	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA23b	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA24b	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA25b	2	0.003	58	0.001	48	0.2	80	No Impact	No Impact	No Impact	No Impact
MA26b	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA16c	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact

Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
MA17c	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA18c	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA19c	2	0.005	61	0.002	51	0.2	80	No Impact	No Impact	No Impact	No Impact
MA20c	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA21c	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA22c	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA23c	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA24c	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA25c	2	0.003	58	0.001	48	0.2	80	No Impact	No Impact	No Impact	No Impact
MA26c	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA16d	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA17d	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA18d	2	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
MA19d	2	0.005	61	0.002	51	0.2	80	No Impact	No Impact	No Impact	No Impact
MA20d	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA21d	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
MA22d	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA23d	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA24d	2	0.003	59	0.001	49	0.2	80	No Impact	No Impact	No Impact	No Impact
MA25d	2	0.003	58	0.001	48	0.2	80	No Impact	No Impact	No Impact	No Impact
MA26d	2	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
SF1	13	0.006	63	0.002	53	0.2	80	No Impact	No Impact	No Impact	No Impact
SF2	13	0.004	60	0.001	50	0.2	80	No Impact	No Impact	No Impact	No Impact
SF3	13	0.000	35	0.000	25	0.2	80	No Impact	No Impact	No Impact	No Impact
SF4	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF5	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF6	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF7	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF8	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF9	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF10	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF11	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF12	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF13	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact

Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
SF14	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF15	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF16	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF17	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF18	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF19	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF20	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF21	13	0.000	36	0.000	26	0.2	80	No Impact	No Impact	No Impact	No Impact
SF22	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF23	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF24	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF25	13	0.000	37	0.000	27	0.2	80	No Impact	No Impact	No Impact	No Impact
SF26	13	0.000	38	0.000	28	0.2	80	No Impact	No Impact	No Impact	No Impact
SF27	13	0.000	38	0.000	28	0.2	80	No Impact	No Impact	No Impact	No Impact
SF28	13	0.000	38	0.000	28	0.2	80	No Impact	No Impact	No Impact	No Impact
SF29	13	0.000	39	0.000	29	0.2	80	No Impact	No Impact	No Impact	No Impact
SF30	13	0.000	39	0.000	29	0.2	80	No Impact	No Impact	No Impact	No Impact
SF31	13	0.000	39	0.000	29	0.2	80	No Impact	No Impact	No Impact	No Impact
SF32	13	0.000	39	0.000	29	0.2	80	No Impact	No Impact	No Impact	No Impact
SF33	13	0.000	40	0.000	30	0.2	80	No Impact	No Impact	No Impact	No Impact
SF34	13	0.000	40	0.000	30	0.2	80	No Impact	No Impact	No Impact	No Impact
WM1	1	0.000	40	0.000	30	0.2	80	No Impact	No Impact	No Impact	No Impact
PK1	1	0.000	40	0.000	30	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 1	5	0.002	54	0.033	78	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 2	5	0.002	53	0.032	78	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 3	5	0.002	53	0.013	70	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 4	5	0.002	53	0.015	71	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 5	5	0.002	53	0.006	64	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 6	5	0.002	53	0.007	64	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 7	5	0.002	52	0.009	66	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 8	5	0.002	53	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 9	5	0.002	52	0.005	61	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 10	5	0.002	52	0.006	63	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 13	60	0.002	52	0.003	58	0.2	80	No Impact	No Impact	No Impact	No Impact

Table 9-10. Construction Vibration for Build Alternative Design Option

Receptor ID	# of Noise-Sensitive Sites Represented	Pile Driver Typical PPV	Pile Driver Typical VdB	Roller PPV	Roller VdB	Damage Threshold PPV	Annoyance Threshold VdB	Pile Driver Typical Damage Impact	Pile Driver Typical Annoyance Impact	Roller Damage Impact	Roller Annoyance Impact
HFC 16	72	0.002	51	0.012	69	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 17	0	0.002	54	0.023	75	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 18	5	0.002	53	0.023	75	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 19	5	0.002	53	0.011	69	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 20	5	0.002	53	0.010	68	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 21	5	0.002	53	0.006	63	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 22	5	0.002	53	0.006	63	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 23	5	0.002	52	0.007	65	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 24	5	0.002	53	0.004	59	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 25	5	0.002	52	0.004	60	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 26	5	0.002	52	0.005	62	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 27	5	0.002	55	0.025	76	0.2	80	No Impact	No Impact	No Impact	No Impact
HFC 28	1	0.001	51	0.002	55	0.2	80	No Impact	No Impact	No Impact	No Impact
GCC	1	0.035	79	0.003	56	0.2	80	No Impact	No Impact	No Impact	No Impact

Operations

The reduced width of the run-through structure represents the biggest change from an operational noise and vibration perspective because the alignment is different with the track on structure instead of fill after it crosses US-101, and a reduced number of tracks. However, land uses south of LAUS where this modification is proposed are industrial and commercial, which are generally not considered to be noise or vibration sensitive. No change to these land uses would occur upon implementation of the Build Alternative Design Option; therefore, the operational noise and vibration impacts would remain unchanged. Due to platform allocation of the Build Alternative Design Option, HSR trains would operate from Platform 3 and 4 instead of Platform 2 and 3. This shift would result in louder diesel-powered regional/intercity rail trains operating closer to the Mozaic Apartments, resulting in slightly higher exterior sound levels. However, as discussed in this EIS, impacts would not be adverse at the Mozaic Apartments because interior noise levels are assumed to be 45 dBA Ldn or lower. This same assumption can be applied when considering the Build Alternative Design Option. Additionally, over 80 percent of 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.

Mitigation Measures

Mitigation Measures NV-1, NV-2, and NV-3 AQ-2 (Described in Section 3.6, *Noise and Vibration*) remain applicable to the Build Alternative Design Option to reduce adverse effects. No additional mitigation measures are required.

NEPA Determination

The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the DEIS, with no new or increased environmental impacts. With reduced construction activity that would result in approximately 15 percent less required construction equipment, construction impacts related to noise would be reduced for the Build Alternative Design Option, while the construction impacts related to vibration would remain similar for the Build Alternative Design Option. This is primarily because fewer receptors would be subject to noise that would be 75dBA or higher. Operational noise and vibration impacts would remain unchanged for the Build Alternative Design Option. Therefore, a Supplemental EIS is not required.

9.14.4 Environmental Evaluation of the Build Alternative Design Option – Economic and Fiscal Impacts

Approach and Methodology

For the purpose of the environmental evaluation related to economic and fiscal impacts, with the reduced scope of the Build Alternative Design Option, this analysis considers impacts from short-term construction spending, as well as long-term incremental operating and maintenance spending required to support the concourse related improvements and passenger support

services at LAUS. The potential job displacement and lost property tax revenues are also considered due to the required right of way (ROW) acquisitions. These negative effects are compared with the expected job creation and generation of property tax revenues (beneficial effects) from the concourse-related improvements and new retail activity. The Build Alternative Design Option could also result in reduced sales tax revenues; however, the impact cannot be estimated with any certainty as other businesses in the Project study area would pick up some of the sales lost by affected businesses. Information contained in this economic and fiscal impact assessment should not be used to make investment decisions. These changes are reflected in the analysis for construction and operations impacts below.

Construction

Multiplier Effects from Short-Term Capital Spending

Capital expenditures during Project construction would result in short-term economic impacts.[3] In addition to impacts generated directly from capital spending, follow-on multiplier effects are expected. To estimate the multiplier effects in the economy due to construction, the IMPLAN® input-output model was used. The model estimates three types of effect:

- **Direct effect.** This refers to the economic activity occurring as a result of direct spending by businesses or agencies (e.g., direct spending on construction and professional services).
- **Indirect effect.** This refers to the economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractor responsible for individual components).
- **Induced effect.** This represents the increase in economic activity, over and above the direct and indirect effects, associated with the increased labor income that accrues to workers (of the contractor and all suppliers) and is spent on household goods and services purchased from businesses.

Construction spending for the Build Alternative Design Option is broken down into two stages: the interim condition and full build-out condition. Capital expenditures during the interim condition are expected to be $1.597 billion, where previously the capital expenditures during the interim condition for the Build Alternative were expected to be $1.93 million. During the full build-out condition, a 15 percent reduction of capital expenditure is expected--due to less construction activity that is expected to occur from removal of Vignes Street Bridge, the reduced extent of the elevated rail yard and platforms, partial reconstruction of the Cesar Chavez Avenue Bridge, and reduced width of run-through structure with fewer run-through tracks.

This capital expenditure is expected to generate short-term economic impacts. In particular, the Build Alternative Design Option is expected to generate 27,440 job-years,[4] which would also

[3] These impacts are expected to last as long as the construction period.
[4] A job-year can be defined as 1 person employed for 1 year, whether part-time or full-time.

translate to $4.28 billion in output and $0.61 billion in federal, state, and local tax revenues. A summary of the multiplier effects expected during construction is provided in Table 9-11.

Table 9-11. Total Construction Economic Impacts by Type and Metric
($2019 million)

Impact Metric	Direct	Indirect	Induced	Total
Output	$2,252	$917	$1,110	$4,279
Value added	$1,088	$539	$682	$2,310
Labor income	$1,241	$358	$390	$1,990
Employment (job-years)	14,913	5,127	7,400	27,440
Tax revenues	—	—	—	$610

Notes:
Totals are rounded for reporting purposes.
Results are reported in constant dollars of 2019 (i.e., the year the analysis was conducted).

Operations

Job Displacement and Property Tax Losses

The Build Alternative Design Option would not result in permanent residential displacements; however, it may require the full or partial acquisition of several parcels and the subsequent demolition of up to 122,050 square feet of building space associated with the Life Storage Self Storage facility. Amay's Bakery is no longer proposed for acquisition and demolition as part of the Build Alternative Design Option. Assuming a worst-case scenario, the acquisition and demolition of one commercial building (Life Storage Self Storage facility) are expected to result in the loss of 13 to 20 jobs, depending on how many relocate within Los Angeles County, and reduced property tax revenues of up to $268,947. Assuming some level of business relocation would occur, the resulting number of jobs lost would decrease to approximately 13. For comparison purposes, the Build Alternative is expected to result in the loss of 20 to 60 jobs (20 with some level of business relocation) with reduced property tax revenues of up to $335,221. The Build Alternative Design Option would result in 7 to 40 fewer lost jobs and $66,274 more in tax revenues.

Direct Fiscal Impacts of Concourse-Related Improvements

The Build Alternative Design Option would involve the existing passenger concourse to be expanded with up to 160,000 square feet of new retail space. The concourse-related improvements are expected to lead to new transit-serving retail businesses and, thus, new retail sales. The total fiscal impacts are estimated to be $4.3 million, considering the incremental retail sales, lease revenues, property taxes and the incremental cost of facility operations. Taking into account the expected reduction in property tax revenues from property acquisitions, the net fiscal impacts would be $4.0 million (in 2019 dollars). This is consistent with the Build Alternative.

Direct Long-Term Jobs Created

To support the new concourse-related improvements, LAUS would require additional staff for facility operations and maintenance. The anticipated new retail establishments would also result in additional retail jobs. Expanded Metrolink and Amtrak services and the introduction of the planned high-speed rail (HSR) system are also anticipated to generate jobs. Taking all three of these into account, the Build Alternative Design Option is expected to generate a total of 171 new full-time equivalent (FTE)[5] positions, as detailed below.

- 50 FTE positions for janitorial, engineering, and security service jobs
- 96 FTE positions for retail jobs
- 25 positions for passenger support service jobs

The estimate of FTE positions is consistent with the Build Alternative.

Multiplier Effects from Long-Term Project Operations and Maintenance Spending

As mentioned above, additional personnel would be needed to operate the concourse-related improvements (janitorial, engineering, security, and rail services). These jobs would also have a multiplier effect on the local economy. Overall, the 75 FTE jobs at LAUS would lead to 145 full- and part-time jobs, $24.94 million in output, and $2.70 million in total tax revenues, annually. These multiplier effects are summarized in Table 9-12. These effects are consistent with the Build Alternative.

Table 9-12. Annual Operating and Maintenance Impacts
($2019 million)

Impact Metric	Direct	Indirect	Induced	Total
Output	$13.6	$5.8	$5.5	$24.9
Value added	$7.3	$3.2	$3.4	$13.9
Labor income	$5.9	$2.0	$1.9	$9.9
Employment	81	27	37	145
Tax revenues	—	—	—	$2.7

[5] Full-time equivalent (FTE) employment is the number of FTE jobs, defined as total hours worked divided by average annual hours worked in full-time jobs.

Mitigation Measures

Consistent with Section 3.13, *Economic and Fiscal Impacts*, no mitigation measures are proposed because the Build Alternative Design Option is anticipated to result in net benefits in terms of economic and fiscal impacts.

NEPA Determination

The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the DEIS, with no new or increased environmental impacts related to economic and fiscal impacts. Therefore, a Supplemental EIS is not required.

9.14.5 Section 4(f) Evaluation and Least Overall Harm Analysis

Impact Assessment and Previous Section 4(f) Use Determination

The Section 4(f) determinations of the Build Alternative are as follows:

- The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge);
- The Build Alternative would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant);
- No constructive use would occur.

This Section 4(f) evaluation and least overall harm analysis addresses the change in permanent use that would occur upon implementation of the Build Alternative Design Option. No changes to the temporary occupancy and constructive use determinations are required for the Build Alternative Design Option because they are the same as the Build Alternative.

Avoidance Alternatives Evaluation

The Build Alternative Design Option is considered a "design change" that would affect a portion of the Build Alternative (end to end project) where three Section 4(f) properties previously considered are located (Vignes Street Undercrossing, Los Angles Union Passenger Terminal, and North Main Street Bridge).

The Build Alternative Design Option was first evaluated to determine whether avoiding the Section 4(f) properties are feasible and prudent. While the Build Alternative Design Option would not avoid use of all Section 4(f) properties, it does avoid use of one of the three Section 4(f) properties considered (Vignes Street Undercrossing) and reduce the magnitude and intensity of the use previously anticipated at a second location (Los Angles Union Passenger Terminal).

Minimization and Mitigation of Harm

The Build Alternative Design Option is designed in a manner that minimizes overall effects on Section 4(f) properties, even beyond what was considered reasonable for the Build Alternative. Consideration of the Build Alternative Design Option further demonstrates CHSRA and Metro's commitment to undertake all possible planning to minimize harm on Section 4(f) properties.

No changes are proposed to the mitigation measures previously considered for the Build Alternative. These minimization measures and commitments are contained in a Programmatic Agreement, that was executed prior to the NEPA Record of Decision.

The cost of these measures would be a reasonable public expenditure in light of the adverse impacts of the Build Alternative Design Option. Additionally, the benefits of the measure(s) to the property and the measures themselves would not result in any substantial impacts on communities or environmental resources outside the Section 4(f) properties. Therefore, the measures provided below are considered reasonable mitigation measures, and the Build Alternative Design Option includes all possible planning to minimize harm to the resources resulting from the use of Los Angeles Union Passenger Terminal and the North Main Street Bridge. As discussed above, the Build Alternative Design Option avoids use of Vignes Street Undercrossing.

PR-1 **Restoration of Affected Areas.** CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.

CUL-2 **Built Environment Treatment Plan (BETP)** (described in Section 3.12, Cultural and Paleontological Resources of this EIS).

Determine Alternative with Section 4(f) Least Overall Harm

When there is no feasible and prudent avoidance alternative (which avoids all Section 4(f) properties) and there are two or more alternatives that use Section 4(f) property, a least overall harm analysis is required pursuant to 23 CFR 774.3l. Least overall harm is determined by balancing the following seven factors:

i) The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);

ii) The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;

iii) The relative significance of each Section 4(f) property;

iv) The views of the OWJ over each Section 4(f) property;

v) The degree to which each alternative meets the purpose and need for the project;

vi) After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

vii) Substantial differences in costs among the alternatives.

As discussed in Chapter 5 of the EIS, the Build Alternative includes all possible planning, as defined in 23 CFR § 774.17, to minimize harm to Section 4(f) properties. After the close of the 45-day public comment period, the Build Alternative Design Option was considered. Table 9-13 includes an evaluation of the seven least overall harm factors for the Build Alternative and the Build Alternative Design Option.

Table 9-13. Least Overall Harm Analysis for Build Alternative and Build Alternative Design Option

Factors	Build Alternative	Build Alternative Design Option	Least Overall Harm Analysis
i. The ability to mitigate adverse impacts to each Section 4(f) property	Design of proposed improvements would be undertaken in consultation with SHPO and other interested parties as mitigation to minimize the adverse impacts to the Section 4(f) Historic Properties Considered. Upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use for the following three (3) Section 4(f) Historic Properties: • North Main Street Bridge • Vignes Street Undercrossing • Los Angles Union Passenger Terminal	Design of proposed improvements would be undertaken in consultation with SHPO and other interested parties as mitigation to minimize the adverse impacts to the Section 4(f) Historic Properties Considered. Upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use for the following two (2) Section 4(f) Historic Properties: • North Main Street Bridge • Los Angles Union Passenger Terminal The Build Alternative Design Option avoids adverse impacts (avoids a Section 4(f) use) of the Vignes Street Undercrossing because the bridge does not require replacement and reduces the extent of adverse impact (reduced extent of permanent use) of Los Angeles Union Passenger Terminal.	The Build Alternative Design Option has fewer adverse impacts on Section 4(f) properties because use of the Vignes Street Undercrossing is avoided and use of the Los Angeles Union Passenger Terminal is reduced.

Table 9-13. Least Overall Harm Analysis for Build Alternative and Build Alternative Design Option

Factors	Build Alternative	Build Alternative Design Option	Least Overall Harm Analysis
ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection	As discussed above, upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use of three (3) Section 4(f) Historic Properties. The Build Alternative would result in alteration of (1 location) and destruction of (2 locations) features that qualify the Section 4(f) historic properties for protection.	As discussed above, upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use of two (2) Section 4(f) Historic Properties. The Build Alternative Design Option would result in alteration of (1 location) and destruction of (1 location) features that qualify the Section 4(f) historic properties for protection.	The remaining harm after mitigation for the Build Alternative is more severe than the Build Alternative Design Option since the Vignes Street Undercrossing would be permanently impacted even after the application of mitigation.
iii. The relative significance of each Section 4(f) property;	The Build Alternative impacts character-defining features of three Section 4(f) Historic Properties.	The Build Alternative Design Option impacts character-defining features of two Section 4(f) Historic Properties.	The Build Alternative Design Option avoids impacts to character-defining features of the Vignes Street Undercrossing and reduces the magnitude and intensity of adverse impacts to character-defining features of the Los Angeles Union Passenger Terminal.
iv. The views of the official(s) with jurisdiction over each Section 4(f) property;	On November 20, 2023, SHPO concurred with a finding of adverse effect under Section 106 and the mitigation measures to reduce impacts to the three Section 4(f) properties considered (CUL-2). SHPO also provided feedback on the Programmatic Agreement.	The Build Alternative Design Option includes design changes that avoid use of Vignes Street Undercrossing and reduces the magnitude and intensity of adverse impacts (and corresponding use) of the Los Angeles Union Passenger Terminal.	CHSRA as the NEPA Lead Agency considered the views of the SHPO and United States Department of Interior prior to making the Section 4(f) determinations.
v. The degree to which each alternative meets the purpose and need for the project;	The Build Alternative meets the Purpose and Need for the project (see EIS Chapter 1). The Build Alternative has two additional run-through tracks enabling greater run-through track capacity and a larger expanded passageway enabling increased	The Build Alternative Design Option meets the Purpose and Need for the project (see Section 9.2 above)	The Build Alternative and the Build Alternative Design Option meet the Purpose and Need for the project. The Build Alternative would better meet the Purpose and Need because it includes two additional run-through tracks with expanded passenger capacity through LAUS.

Table 9-13. Least Overall Harm Analysis for Build Alternative and Build Alternative Design Option

Factors	Build Alternative	Build Alternative Design Option	Least Overall Harm Analysis
	passenger/pedestrian capacity.		
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)	As discussed above, upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use of three (3) Section 4(f) Historic Properties. Impacts to resources not protected by Section 4(f) are summarized in Section 9.13.6 of this Chapter (Table 9-13).	As discussed above, upon implementation of mitigation, impacts would remain adverse and result in a corresponding Section 4(f) use of two (2) Section 4(f) Historic Properties. Impacts to resources not protected by Section 4(f) are summarized in Section 9.13.6 of this Chapter (Table 9-13).	As discussed in Table 9-13, the Build Alternative Design Option results in reduced magnitude and intensity of adverse effects to resources not protected by Section 4(f).
vii. Substantial differences in costs among the alternatives	The capital costs for the Build Alternative is estimated to be approximately: • Interim Condition Cost Estimate – $1.93B (2023$) • Full Build-Out Condition Cost Estimate – $1.35B (2018$)	The capital costs for the Build Alternative Design Option is estimated to be approximately: • Interim Condition Cost Estimate - $1.597B (2024$ - based on updated cost estimate) • Full Build-Out Condition Cost Estimate – $1.15B (2018$ -assumes 15% reduction)	Due to the reduced scope and scale of proposed infrastructure, a lower overall cost is expected to implement the Build Alternative Design Option. • Interim Condition - $333M less • Full Build-Out Condition - $200M less

Summary

After considering the harm analysis above, the Build Alternative would better meet the Purpose and Need because it includes two additional run-through tracks with expanded passenger capacity through LAUS. If the Build Alternative Design Option is implemented, the use of one of the three Section 4(f) properties (Vignes Street Undercrossing) would be avoided and the extent of permanent use of another Section 4(f) property (Los Angeles Union Passenger Terminal) would be reduced.

Upon consideration of the impacts and benefits for the Build Alternative and the Build Alternative Design Option and balancing of the seven least overall harm factors in Table 9-13 above, neither would result in substantially more or less harm. Therefore, either the Build Alternative or the Build

Alternative Design Option would include all possible planning, as defined in 23 CFR § 774.17, to minimize harm to the Section 4(f) properties considered.

9.14.6 Comparative Environmental Evaluation of the Build Alternative and the Build Alternative Design Option – All Environmental Topic Areas

Table 9-13 provides a summary of the NEPA effect determinations for each environmental topic area for the Build Alternative, the NEPA effect determinations for the Build Alternative Design Option, and a comparative evaluation with evidence to support how the scope of the proposed modifications as part of the Build Alternative Design Option is within the scope and associated environmental analysis of the Build Alternative, and how the environmental effects identified for the Build Alternative would be reduced or avoided with the Build Alternative Design Option. Table 9-13 provides evidence that the Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the DEIS/SEIR, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

The Final SEIR certified by the Metro Board of Directors on October 23, 2025 includes a summary of the CEQA significance conclusions for each environmental topic area for the Modified Proposed Project considered in the Draft EIS/SEIR and the CEQA significance conclusions for the refinements to the Modified Proposed Project considered in the Final SEIR. A comparative evaluation is also included in the Final SEIR certified by the Metro Board of Directors on October 23, 2025 demonstrating that the reduced magnitude and intensity of the refinements to the Modified Proposed Project does not constitute a significant impact or result in substantially greater impacts than the Modified Proposed Project considered in the Draft EIS/SEIR.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Section 3.2, Land Use and Planning							
Topic 3.2-A: Alteration of land use patterns.	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option is in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not alter existing land use patterns, and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-B: Compatibility with existing or planned land uses.	*Construction* Adverse Effect • Construction activities that could occur near residential communities and commercial properties could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). *Operations* Adverse Effect • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP AES-2 Minimize Nighttime Work and Screen Direct Lighting 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 NV-1 Construct Sound Walls NV-2 Employ Noise and Vibration Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction activities that could occur near residential communities and commercial properties could cause temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions). *Operations* Adverse Effect • New physical features adjacent to residential communities may introduce a potential land use incompatibility (retaining wall/sound wall and lighting from canopies). *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP AES-2 Minimize Nighttime Work and Screen Direct Lighting 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 NV-1 Construct Sound Walls NV-2 Employ Noise and Vibration Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction *Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option is in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in magnitude of effects related to compatibility with existing or planned land uses due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it would result in a decrease in the magnitude of effects related to temporary land use incompatibilities (road detours, potential increases in light and glare, noise and vibration, and air quality emissions) for Care First Village and other nearby residential land uses. LAUS and Rail Yard • Construction-related effects to land use incompatibilities would be reduced in magnitude raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. • Operational effects from light and glare near Mozaic Apartments and other residential communities would be reduced in magnitude and intensity due to reduced canopy coverage (Individual Canopies). South of LAUS • Reduction in the magnitude of the effects from traffic delays during the construction period from reduced

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
		AES-3 Screen Direct Lighting and Glare			AES-3 Screen Direct Lighting and Glare		run-through tracks and reduced width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-C: Physical division of an established community.	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar—** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would result in a decrease in overall scope and scale of the project, effects would be similar and no adverse effect would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* Adverse Effect • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River. • Conflict with one policy and program of the City of Los Angeles *Mobility Plan 2035* and three goals and one policy of the California Transportation Plan 2040 that relate to goods	*Operations* LU-1 Enhance Neighborhood Connectivity TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* No Adverse Effect *Operations* Adverse Effect • Conflicts with plans that promote neighborhood sustainability, connectivity, and nonmotorized connections from LAUS to Los Angeles River. • Conflict with one policy and program of the City of Los Angeles *Mobility Plan 2035* and three goals and one policy of the California Transportation Plan 2040 that relate to	*Operations* LU-1 Enhance Neighborhood Connectivity TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would conflict with plans that promote non-motorized connections from LAUS to the Los Angeles River and with one policy and program of the City of Los Angeles *Mobility Plan 2035* and three goals and one policy of the California Transportation Plan 2040 that relate to goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. Although the Build Alternative Design Option would result in a decrease in overall scope and scale of the project, effects would be similar and no adverse effects would occur after mitigation. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. *Indirect* No Adverse Effect			goods movement, the flow of freight traffic, managing and operating an efficient integrated multimodal transportation system, and reducing impacts from climate change. *Indirect* No Adverse Effect			increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.3, Transportation and Traffic							
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • Construction-related activities would result in temporary traffic delays and local street closures, resulting in potential hazards on local roadways and safety of multimodal facilities. • Construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #15: Vignes Street and Main Street and Intersection #27: Mission Road and Cesar Chavez Avenue, traffic delays would exceed the 2.5 second delay significance criteria per LADOT guidelines. *Operations* Adverse Effect • Operational traffic delays would exceed LADOT guidelines at Intersection	*Construction* TR 1 Prepare a Construction TMP *Operations* LU-1 Enhance Neighborhood Connectivity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction-related activities would result in temporary traffic delays and local street closures, resulting in potential hazards on local roadways and safety of multimodal facilities. • Construction-related traffic impacts would occur during peak hours or during planned closures. At Intersection #27: Mission Road and Cesar Chavez Avenue, traffic delays would exceed the 2.5 second delay significance criteria per LADOT guidelines. *Operations* Adverse Effect • Operational traffic delays would exceed LADOT guidelines at Intersection #4: Center	*Construction* TR 1 Prepare a Construction TMP *Operations* LU-1 Enhance Neighborhood Connectivity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction-related effects-related to traffic days that limit the effectiveness of the traffic circulation system when compared to the Build Alternative. This would be due to: North of LAUS • A reduction in the magnitude and intensity of traffic delays from retaining the existing Vignes Street Bridge instead of replacing it, resulting in significant traffic delays at two intersections (Intersection #15: Vignes Street and Main Street; Intersection #27: Mission Road and Cesar Chavez Avenue) during construction would remain the same since it is conservatively assumed that the construction related trips during the AM and PM peak periods would not change. Daily construction related trips would be reduced. LAUS and Rail Yard • Reduction in the overall magnitude and intensity of traffic delays & hazards during the construction period due to raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. South of LAUS • Reduction in the magnitude of traffic delays during the construction period from reduced run-through tracks and the reduced width of run-through structure.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	#4: Center Street and Commercial Street. *Indirect Effects* No Adverse Effect			Street and Commercial Street. *Indirect Effects* No Adverse Effect			Once operational, the Build Alternative Design Option would result in similar effects as the Build Alternative because the trip generation from retail and office land uses would be the same. Operational traffic delays would still exceed LADOT guidelines at Intersection #4: Center Street and Commercial Street. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.3-B: Design of existing roadways and intersections causing increased hazards	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US-101 would also 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. The on and off ramps at Commercial Street would also be subject to temporary lane width reductions. Additionally, short radius curves and/or short sight distances may occur during construction. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Existing roadways and intersections may be subject to temporary detours and lane closures at multiple locations. US101 would also 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. The on and off ramps at Commercial Street would also be subject to temporary lane width reductions. Additionally, short radius curves and/or short sight distances may occur during construction. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced -** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to the design of existing roadways and intersections causing increased hazards due to a reduction in project components, including: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, reducing the magnitude of hazards from fewer roadway detours and lane closures during construction. LAUS and Rail Yard • Fewer roadway detours and lane closures from construction of only 4 instead of 6 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet. South of LAUS • Construction of 8 run-through tracks on a single viaduct versus ten tracks on multiple viaducts, resulting in reduced magnitude of effects from temporary closures of US-101 during the night. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Significant delays at two 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 result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Significant delays at two intersections during construction would affect traffic along Commercial and Alameda, construction activities in the vicinity of these affected intersections, especially US-101 and Alameda Street, could result in impacts to emergency response and access, due to potential delays in response times for emergency vehicles as a result of temporary roadway closures and anticipated detours. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction-related delays for emergency access when compared to the Build Alternative due to: North of LAUS • The reconstruction of one bridge versus two bridges, resulting in a reduction of the magnitude of effects related to road closures and detours and effects on emergency response and access during the construction period because Vignes Street would remain open during construction. LAUS and Rail Yard • Reduction in magnitude of effects related to road closures and detours and effects on emergency response and access during construction period from construction of only 4 rail yard platforms, not 6. South of LAUS • Reduction in the magnitude and intensity of effects on emergency response and access during the construction period from the reduced run-through tracks and width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect • Construction of the expanded passageway and associated concourse-related improvements may result in detours and temporary accessibility disruptions to public transit and bicycle and pedestrian	*Construction* TR-2 Prepare Passenger Rail Operations Temporary Construction Staging Plan	*Construction* No Adverse Effect *Operations* Beneficial Effect (Public Transit) No Adverse Effect (Bicycle and Pedestrian Facilities)	*Construction* Adverse Effect • Construction of the expanded passageway and associated concourse-related improvements may result in detours and temporary accessibility disruptions to public transit and bicycle and	*Construction* TR-2 Prepare Passenger Rail Operations Temporary Construction Staging Plan	*Construction* No Adverse Effect *Operations* Beneficial Effect (Public Transit) No Adverse Effect (Bicycle and Pedestrian Facilities)	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of construction and operation related impacts to public transit, bicycle, or pedestrian facilities when compared to the Build Alternative due to: North of LAUS • The construction of one bridge replacement versus two bridge replacements, resulting in less roadway closures and detours and temporary disruptions to pedestrian and

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	facilities. Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns may occur for passengers accessing the Gold Line, Red Line, and Purple Line and regional/intercity rail platforms during construction at LAUS. • 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). *Operations* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. Adverse Effect • Although the Build Alternative contributes to the growth of public	*Operations* LU-1 Enhance Neighborhood Connectivity	*Indirect* Beneficial Effect	pedestrian facilities. Decreased performance for rail operators at LAUS and temporary disruptions to commuter daily travel patterns may occur for passengers accessing the Gold Line, Red Line, and Purple Line and regional/intercity rail platforms during construction at LAUS. • 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 at Cesar Chavez Avenue and modifications to local streets (including potential street closures and vacations). *Operations* Beneficial Effect • The Build Alternative Design Option will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. Adverse Effect • Although the Build Alternative Design	*Operations* LU-1 Enhance Neighborhood Connectivity	*Indirect* Beneficial Effect	bicycle facilities during construction of bridge improvements at only Cesar Chavez Avenue. LAUS and Rail Yard • Reduction in the magnitude of effects from hazardous conditions near construction work zones from raising of 4 rail yard platforms a maximum of 9 to 12 feet instead of 15 feet. • Reduction in the magnitude and intensity of disruptions to rail operators at LAUS and temporary disruptions to commuter daily travel from reduced concourse related improvements (elimination of West Plaza and reduced passageway width). South of LAUS • Reduction in the magnitude and intensity of construction related hazardous conditions from the reduced run-through tracks and width of run-through structure. Once operational, the Build Alternative Design Option would result in similar indirect beneficial effects to public transit, bicycle, or pedestrian facilities as the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	transit in Southern California and the interconnectivity of the planned HSR system, the Build Alternative would conflict with the City's *Mobility Plan 2035* due to decreased connectivity between LAUS and neighborhoods surrounding LAUS that facilitate cycling and walking. *Indirect* Beneficial Effect • The Build Alternative will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. The Build Alternative accommodates future roadway improvements, including future active transportation and enhanced mobility improvements identified in the City of Los Angeles' *Mobility Plan 2035.*			Option contributes to the growth of public transit in Southern California and the interconnectivity of the planned HSR system, the Build Alternative would conflict with the City's *Mobility Plan 2035* due to decreased connectivity between LAUS and neighborhoods surrounding LAUS that facilitate cycling and walking. *Indirect* Beneficial Effect • The Build Alternative Design Option will support Metrolink's implementation of the SCORE Program and is necessary to implement the goals and objectives of multiple planning documents that guide future growth in rail operations. • The Build Alternative Design Option accommodates future roadway improvements, including future active transportation and enhanced mobility improvements identified in the City of Los Angeles' *Mobility Plan 2035*.			
Topic 3.3-E: Freight	*Construction* Adverse Effect	*Construction* TR--3 Implement Malabar Yard Railroad	*Construction* No Adverse Effect	*Construction* Adverse Effect	*Construction* TR--3 Implement Malabar Yard Railroad	*Construction* No Adverse Effect	**Similar -** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would include 8

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• Removal of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard will cause operational inefficiencies when BNSF operates longer trains. *Operations* Adverse Effect • Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF will cause operational inefficiencies when BNSF operates longer trains. *Indirect* Adverse Effect A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard from construction and operations would indirectly affect operations at other freight rail yards by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards.	Improvements in the City of Vernon (46th Street and 49th Street) *Operations* TR--3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Operations* No Adverse Effect *Indirect* No Adverse Effect	• Removal of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard would cause operational inefficiencies when BNSF operates longer trains. *Operations* Adverse Effect • Permanent loss of approximately 5,500 feet of freight storage track capacity at the north end of the BNSF West Bank Yard and BNSF would cause operational inefficiencies when BNSF operates longer trains. *Indirect* Adverse Effect A loss of 5,500 feet of storage track capacity at the BNSF West Bank Yard from construction and operations would indirectly affect operations at other freight rail yards by reducing the maximum storage track length available for singular train movements between the BNSF West Bank Yard and the BNSF Hobart/Commerce Intermodal Yards.	Improvements in the City of Vernon (46th Street and 49th Street) *Operations* TR--3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street and 49th Street)	*Operations* No Adverse Effect *Indirect* No Adverse Effect	run-through tracks, it would not result in the loss of any additional freight storage track capacity at the north end of the BNSF West Bank Yard (5,500 feet) when compared to the Build Alternative. The impact would be the same and would result in no adverse effects after mitigation. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Section 3.4, Visual Quality and Aesthetics							
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* Beneficial Effect • Visual Assessment Unit #6: Viewer groups are anticipated have a positive response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS Adverse Effect • Visual Assessment Unit #1: Construction of a sound wall on top of the retaining wall at William Mead Homes and along Care First Village would result in a moderately-high level of resource change and a high level of viewer response. This would result in a high visual impact. • Visual Assessment Unit #3: Viewer response would be	*Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* Beneficial Effect (Visual Assessment Unit #6) No Adverse Effect (Visual Assessment Units #1 - #5) *Indirect* No Adverse Effect	*Construction* No Adverse Effect *Operations* Beneficial Effect • Visual Assessment Unit #6: Viewer groups are anticipated have a positive response to the resource change as they would be users of the facility and exposed to an environment with more space and modern amenities, thereby enhancing the visual quality and aesthetics at LAUS. Concourse-related improvements would also provide opportunities for murals to display the local importance and history of the area/LAUS Adverse Effect • Visual Assessment Unit #1: Construction of a sound wall and retaining wall at William Mead Homes and a sound wall along Care First Village would result in a moderately-high level of resource change and a high level of viewer response. This would result in a high visual impact. • Visual Assessment Unit #3: Viewer response would be	*Operations* AES-1 Aesthetic Treatments	*Construction* No Adverse Effect *Operations* Beneficial Effect (Visual Assessment Unit #6) No Adverse Effect (Visual Assessment Units #1 - #5) *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same, previously evaluated project footprint as the Build Alternative, but would result in an overall reduction in the magnitude of effects related to visual character or quality when compared to the Build Alternative due to: North of LAUS • The removal of the Vignes Street Bridge replacement (Visual Assessment Unit #2) would result in no change to the existing conditions regarding visual character and quality. Viewer response for commuters would be low instead of moderate, a low level of resource change would remain, and viewer response would be low instead of moderate as compared to the Build Alternative. Overall visual impact from Visual Assessment Unit #2 would be low instead of moderately low and the no adverse effect determination would remain as compared to the Build Alternative. • The construction of a sound wall along Care First Village, which would still result in a moderately-high level of resource change and viewer response, but the magnitude of effects would be reduced due to the elimination of the retaining wall at this location. • While bridge improvements would only be required at one bridge versus two, residents of Mozaic Apartments (Visual Assessment Unit #3) would still experience a moderately high level of viewer response from exposure to a larger bridge over Cesar Chavez Avenue. LAUS and Rail Yard • With the elimination of Rail Yard Canopy Design Option 2 (Grand Canopy over Rail Yard), the grand canopy would be removed from Key Views #4a and #4b under the Build Alternative Design Option, resulting in views that are the same to the existing condition at these key views. The no adverse effect determination at Visual Assessment Unit #4 would remain. • A reduction in the magnitude of impacts would occur for Visual Assessment Unit #6 from raising 4 rail yard platforms a maximum of 9-12 feet instead of 15, resulting in a shorter construction period.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	moderately-high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. A moderate level of resource change combined with a moderately-high level of viewer response would result in a moderately-high visual impact. *Indirect Effects* No Adverse Effect			moderately-high for residents at the Mozaic Apartments because exposure to a larger bridge over Cesar Chavez Avenue, the elevated rail yard, and new retaining walls would diminish current views for some units and degrade the existing visual character. A moderate level of resource change combined with a moderately-high level of viewer response would result in a moderately-high visual impact. *Indirect Effects* No Adverse Effect			• View A would be eliminated from Visual Assessment Unit #6 with the elimination of West Plaza and the Grand Canopy Design Option. • Views B through F in Visual Assessment Unit #6 would display a reduction of visual enhancements from the reduction of the concourse-related improvements, resulting in slightly less beneficial effects. However, the overall effect determination of beneficial would remain. South of LAUS • Reduction in magnitude of construction related effects to visual quality from reduced width of run-through structure. Key Views #5a through #5e would show a substantial reduction in width of the portion of viaduct over US-101 (205-feet-wide with the Build Alternative versus 75-feet-wide with the Build Alternative Design Option). Visual impacts determinations would remain the same under the Build Alternative Design Option. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.4-B: Light or Glare	*Construction* Adverse Effect • Direct effects on nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting during the nighttime hours. *Operations* Adverse Effect • If not properly designed and installed, light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt normal activities	*Construction* AES-2 Minimize Nighttime Work and Screen Direct Lighting *Operations* AES-3 Screen Direct Lighting and Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Direct effects on nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting during the nighttime hours. *Operations* Adverse Effect • If not properly designed and installed, light emissions and potential glare from proposed infrastructure may cause undesired exposure or disrupt	*Construction* AES-2 Minimize Nighttime Work and Screen Direct Lighting *Operations* AES-3 Screen Direct Lighting and Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to light and glare when compared to the Build Alternative due to: North of LAUS • A reduction in the magnitude and intensity of effects of light and glare during nighttime construction for residents of Care First Village. LAUS and Rail Yard • While bridge improvements would only be required at one bridge versus two, residents of Mozaic Apartments would still experience a moderately high level of viewer response from exposure to construction related light and glare impacts from the partial replacement of the Cesar Chavez Avenue Bridge.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare. *Indirect* No Adverse Effect			normal activities for some of the units in the Mozaic Apartments. The new platform canopies also have the potential to result in additional daytime glare. *Indirect* No Adverse Effect			• During operation, the magnitude of effects from light and glare would be reduced due to the elimination of the West Plaza canopy and the Grand Canopy design option. • A reduction in the magnitude of impacts from nighttime glare would occur from raising 4 rail yard platforms a maximum of 9-12 feet instead of 15. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.5, Air Quality and Global Climate Change							
Topic 3.5-A: General Conformity de minimis levels for the South Coast Air Basin	*Construction* Adverse Effect • Fugitive dust emissions generated on-site. • The total annual construction emissions associated with the Build Alternative and Malabar Yard railroad improvements would exceed the *de minimis* level for NOx. *Operations* Adverse Effect • NOx emissions would exceed the *de minimis* level in years 2026 and 2031. *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and	*Construction* AQ-1 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-1 (same as Mitigation Measure AQ-1 but applicable to Malabar Yard railroad improvements in City of Vernon). AQ-2 (for the Build Alternative) and Malabar Yard Mitigation Measure AQ-2 (same as Mitigation Measure AQ-2 but applicable to Malabar Yard railroad improvements in City of Vernon). *Operations* AQ-3 Adaptive Air Quality Mitigation Plan	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	*Construction* Adverse Effect • Fugitive dust emissions generated on-site. • The total annual construction emissions associated with the Build Alternative Design Option and Malabar Yard railroad improvements would exceed the *de minimis* level for NOx. *Operations* Adverse Effect • NOx emissions would exceed the *de minimis* level in years 2026 and 2031. *Indirect* Beneficial Effect • Once constructed, the Build Alternative Design Option could encourage	*Construction* AQ-1 (for the Build Alternative Design Option) and Malabar Yard Mitigation Measure AQ-1 (same as Mitigation Measure AQ-1 but applicable to Malabar Yard railroad improvements in City of Vernon). AQ-2 (for the Build Alternative Design Option) and Malabar Yard Mitigation Measure AQ-2 (same as Mitigation Measure AQ-2 but applicable to Malabar Yard railroad improvements in City of Vernon). *Operations* AQ-3 Adaptive Air Quality Mitigation Plan	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Similar -** The Build Alternative Design Option would be located in essentially the same location and within the same, previously evaluated project footprint as the Build Alternative. The long-term regional benefits under the Build Alternative Design Option would continue to result in a net reduction in air pollutant emissions as people shift from driving to transit. The Build Alternative Design Option would result in approximately 15 percent less construction equipment usage from the elimination of two run-through tracks, Vignes Street Bridge improvements, and from construction of only 4 rail yard platforms, not 6. Less excavation would also be required as the expanded passageway would be reduced from a 140-foot width to 100-foot width (see Table 9-6). These reductions in construction activity would reduce the magnitude of air pollutant emissions associated with construction. The Build Alternative Design Option would not result in changes to railroad operations at LAUS compared to the Build Alternative. As such, operational characteristics such as train frequency, routing, and equipment type would remain the same, and no change in daily trip generation at LAUS is anticipated. Because operational activities would not differ, the associated emissions, including potential NO_x emissions and any exceedances of applicable air quality thresholds, would be the same as those evaluated for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads.			a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads.			of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • Once constructed, the Build Alternative could encourage a modal shift toward transit use and away from single-occupancy vehicle use as mobility in the region improves. This shift may indirectly reduce transportation emissions as rail is a more efficient mode of travel and there would be less vehicle congestion and delay on the roads. These beneficial effects would be consistent with the 2020 RTP/SCS objective to reduce transportation-based GHG emissions.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Similar** - The Build Alternative Design Option would be located in essentially in the same location and the within the same, previously evaluated project footprint as the Build Alternative. The reduced construction activity would result in approximately 15 percent less construction-related GHG emissions. The Build Alternative Design Option would not include modifications that would change the daily trip generation at LAUS from what was considered for the Build Alternative. The operational GHG emissions associated with the Build Alternative Design Option would be similar to those evaluated under the Build Alternative. The long-term regional benefits under the Build Alternative Design Option would continue to result in a net reduction in GHG emissions as people shift from driving to using transit. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Section 3.6, Noise and Vibration							
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* Adverse Effect • Construction noise effects at William Mead Homes and Care First Village associated with construction of the sound wall. • Construction-related noise effects would occur at Category 2 land uses (i.e., residential) because applicable FTA thresholds would be exceeded during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. • The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit: o William Mead Homes - 41 dwelling units and one recreational use; o Care First Village - approximately 36 dwelling units and a playground/park; o Mozaic Apartments - 82 dwelling units; and, o Metro Gateway Childhood Development Center.	*Construction* NV-1 Construct Sound Walls 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 Walls	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction noise effects at William Mead Homes associated with construction of the sound wall. • Construction-related noise effects would occur at Category 2 land uses (i.e., residential) because applicable FTA thresholds would be exceeded during the daytime (80 dBA Leq) and nighttime (70 dBA Leq) within 250 feet and 300 feet, respectively. • The following Category 2 and 3 land uses would be subject to construction noise that exceeds the City's 75 dBA limit: o William Mead Homes - 17 dwelling units and one recreational use; o Care First Village - approximately 25 dwelling units and a playground/park; o Mozaic Apartments - 23 dwelling units; and, o Metro Gateway Childhood Development Center.	*Construction* NV-1 Construct Sound Walls 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 Walls	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in similar effects related to ambient noise when compared to the Build Alternative, but the magnitude would be reduced. North of LAUS • Because the Vignes Street Bridge would not be replaced under the Build Alternative Design Option, approximately 23 dwelling units at Care First Village would be affected, compared to 36 dwelling units under the Build Alternative. This represents a reduction in the magnitude of units that would experience adverse noise effects from construction noise that would exceed the City's 75 dBA limit. • During operation, a similar magnitude of effects from noise would occur at William Mead Homes and Care First Village because daily train trips would not change. LAUS and Rail Yard • While bridge improvements would only be required at Cesar Chavez Avenue, residents of Mozaic Apartments would still experience similar adverse noise effects from construction noise that would exceed the City's 75 dBA limit. However, the magnitude of affected units at Mozaic Apartments would be reduced because fewer platforms would be raised in the partially elevated rail yard and the reduced extent of concourse improvements. This would result in 23 units that woud be impacted under the Build Alternative Design Option versus 82 units under the Build Alternative. • Due to platform allocation of the Build Alternative Design Option, HSR trains would operate from Platform 3 and 4 instead of Platform 2 and 3. This shift would result in louder diesel-powered regional/intercity rail trains to operate in closer proximity the Mozaic Apartments, resulting in slightly higher exterior sound levels. As discussed in this EIS, impacts would not be adverse because interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower due to City building code requirements. Additionally, over 80 percent of the train movements would occur during daytime hours, during the peak-period, rather than during

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Operations Adverse Effect • In the 2031 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. • In the 2040 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units ((24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. *Indirect* No Adverse Effect			*Operations* Adverse Effect • In the 2031 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. • In the 2040 condition, the Build Alternative would result in severe impacts on 34 multifamily dwelling units (24 William Mead Homes dwelling units and 10 dwelling units at the Care First Facility) and one park/athletic field near William Mead Homes. *Indirect* No Adverse Effect			nighttime hours when rail activity could result in greater sleep disturbance. South of LAUS • Reduction in the magnitude of the effects from noise during the construction period from 8 versus 10 run-through tracks and reduced width of run-through structure. • Similar noise impacts would occur during operation because although the Build Alternative Design Option would include 8 run-through tracks, the daily train trips would not change when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* Adverse Effect • Construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller. A severe impact may occur at William Mead Homes, Care First Village, and the Mozaic Apartments	*Construction* NV-2 Employ Noise- and Vibration-Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction would occur within 300 feet of sensitive land uses for an impact pile driver and within 140 feet for the vibratory roller. A severe impact may occur at William Mead Homes and the Mozaic Apartments from an annoyance perspective.	*Construction* NV-2 Employ Noise- and Vibration-Reducing Measures during Construction NV-3 Prepare a Community Notification Plan for Project Construction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in a reduced magnitude of construction-related groundborne vibration and noise effects when compared to the Build Alternative. This would be due to: North of LAUS • Reduced magnitude of noise and vibration impacts because the Vignes Street Bridge would not be replaced and the throat tracks would not be elevated adjacent to Care First Village.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	from an annoyance perspective. *Operations* No Adverse Effect *Indirect* No Adverse Effect			*Operations* No Adverse Effect *Indirect* No Adverse Effect			LAUS and Rail Yard • Reduced magnitude of impacts to residents of the Mozaic Apartments during construction from the reduced extent of concourse related improvements, the construction of only 4 rail yard platforms, not 6, and the reduced width of the pedestrian passageway. Similar to the Build Alternative, no adverse effects related to groundborne vibration and groundborne noise levels would result during operation of the Build Alternative Design Option The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.7, Biological and Wetland Resources							
Topic 3.7-A: Federally and State listed or candidate plant or animal species	*Construction* Adverse Effect • Construction may involve removal of naturally occurring or ornamental trees, track work, and bridge modifications at Vignes Street and Cesar Chavez Avenue which could disturb western mastiff bat and western yellow bat that may use these areas to roost. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* BIO-1 Bats	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction may involve removal of naturally occurring or ornamental trees, track work, and bridge modifications at Cesar Chavez Avenue which could disturb western mastiff bat and western yellow bat that may use these areas to roost. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* BIO-1 Bats	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, and would result in reduced magnitude of impacts to Federally and State listed or candidate plant or animal species when compared to the Build Alternative due to: North of LAUS • The existing Vignes Street Bridge would remain instead of being replaced, and the magnitude of potential impacts on the western mastiff bat and western yellow bat roosting areas would be reduced. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7-B: Nesting birds protected by the MBTA	*Construction* Adverse Effect	*Construction and Indirect* BIO–2 MBTA Species	*Construction* No Adverse Effect	*Construction* Adverse Effect	*Construction and Indirect* BIO–2 MBTA Species	*Construction* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in indirect effects to nesting birds from the reduced magnitude of construction noise, vibration, dust, night

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• Direct effects on an active nest, including removal of mature trees and bridge improvements could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.		*Operations* No Adverse Effect *Indirect* No Adverse Effect	• Direct effects on an active nest, including removal of mature trees and bridge improvements could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects on an active nest may include increased risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.		*Operations* No Adverse Effect *Indirect* No Adverse Effect	lighting, and human encroachment when compared to the Build Alternative. Additionally, construction of track and bridge improvements would only occur at Cesar Chavez Avenue. The existing Vignes Street Bridge would remain instead of being replaced, resulting in a reduced magnitude of direct effects to nesting birds protected by the MBTA that are present in the BSA during construction. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7 C: Wildlife movement	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on wildlife movement would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.7-D: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Build Alternative could result in	*Construction* BIO-3 Protected Trees Indirect BIO-3 Protected Trees	*Construction* No Adverse Effect	*Construction* Adverse Effect • Construction of the Build Alternative could	*Construction* BIO-3 Protected Trees Indirect BIO-3 Protected Trees	*Construction* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option may require the removal or disturbance of one or more

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. *Operations* No Adverse Effect *Indirect* Adverse Effect • 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.		*Operations* No Adverse Effect *Indirect* No Adverse Effect	result in the removal or disturbance of native tree species protected under Ordinance No. 186873 and LA Metro's Tree Policy. *Operations* No Adverse Effect *Indirect* Adverse Effect • 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.		*Operations* No Adverse Effect *Indirect* No Adverse Effect	native tree species. The locations and sizes of all protected trees will be identified prior to construction to determine which trees may be removed or replaced in accordance with Ordinance No. 186873 and will not be removed without approval by the City of Los Angeles. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.8, Floodplains, Hydrology, and Water Quality							
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • An increase of impervious surfaces could cause downstream erosion and increases in suspended particles	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • An increase of impervious surfaces could cause downstream erosion and increases in suspended particles	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The effects to drainage patterns, soil erosion, and siltation would be reduced in magnitude and intensity when compared to the Build Alternative due to: North of LAUS • Decrease in magnitude of effects from erosion due to retaining the existing Vignes Street Bridge instead of replacing it. LAUS and Rail Yard • Decrease in construction related drainage pattern alterations and sediment accumulation from the reduced extent of concourse related improvements and reduced pedestrian passageway width. • Decrease in construction related drainage pattern alterations and sediment accumulation from the reduced elevated rail yard height with fewer rail yard platforms raised.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	and sediment that would directly increase the turbidity of receiving waters. *Indirect* No Adverse Effect			and sediment that would directly increase the turbidity of receiving waters. *Indirect* No Adverse Effect			South of LAUS • Decrease in construction related drainage pattern alterations and sediment accumulation from reduced run-through tracks and width of run-through structure. Once operational, there would be a decrease in the magnitude and intensity of effects to the turbidity of receiving waters when compared to the Build Alternative due to the reduced project extent and associated decrease in impervious surfaces associated with one less bridge being reconstructed, no West Plaza canopy, individual canopies and a narrower run-through track structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • Sediments, 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 into the Los Angeles River. *Operations* Adverse Effect • Increased impervious area would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not managed properly.	*Construction* HWQ-1. HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP) *Operations* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Sediments, 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 into the Los Angeles River. *Operations* Adverse Effect • Increased impervious area would increase the volume of flow and could exceed the capacity of some on-site drainage systems if not managed properly.	*Construction* HWQ-1. HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP) *Operations* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, during construction, the Build Alternative Design Option would require excavation and site disturbance, which could expose soil, some of which would be contaminated soils, to temporary erosion from surface runoff exposure, contaminating water quality. However, the amount of grading, excavation, and disturbed surface area would be reduced because the refinements include a decrease in the disturbed surface area. This would result in an overall reduced magnitude and intensity of impacts to water quality during construction. Similar to the Build Alternative, construction activities would need to comply with the Los Angeles RWQCB Order No. R4-2021-0105, NPDES No. CAS004004. Compliance would minimize the potential for any discharges that could otherwise exceed existing wastewater treatment requirements. Once operational, an overall decrease in stormwater runoff is anticipated to result from a decrease in impervious surface area, which would decrease the volume of flow and capacity of on-site drainage systems when compared to the Build Alternative.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Indirect No Adverse Effect			*Indirect* No Adverse Effect			The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.8-C: Flooding	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, and would not introduce any new infrastructure in a flood hazard area or that would increase people's exposure to flooding. Overall effects related to flooding would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these	*Construction* HWQ-1 Prepare and Implement a SWPPP HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these	*Construction* HWQ-1 Prepare and Implement a SWPPP HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would require excavation and site disturbance during construction, which could expose soil to temporary erosion from surface runoff exposure, contaminating water quality. However, the amount of grading, excavation, and disturbed surface area would be reduced because the Build Alternative Design Option reflects a decrease in the scope and scale of the project. This would result in an overall reduced magnitude and intensity of effects related to water quality. Similar to the Build Alternative, construction of the Build Alternative Design Option would need to comply with the Los Angeles RWQCB Order No. R4-2021-0105, NPDES No. CAS004004. Compliance with these permits would minimize the potential for any discharges that could otherwise exceed existing wastewater treatment requirements.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) *Indirect* HWQ-1 Prepare and Implement a SWPPP HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites HWQ-7 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses		contaminants could reduce water quality of the Los Angeles River at Reach 2. *Operations* Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • The resulting increase in volume and rate of stormwater runoff could cause or contribute to erosion and off-site pollutant transport if not properly managed. • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) *Indirect* HWQ-1 Prepare and Implement a SWPPP HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles) HWQ-5 Comply with Local Dewatering Requirements HWQ-6 Comply with Local Dewatering Requirements for Contaminated Sites HWQ-7 Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses		The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Section 3.9, Geology, Soils, and Seismicity							
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, effects to seismic ground shaking or seismic-related ground failure, would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.9-B: Soil erosion	*Construction* Adverse Effect • Loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. *Operations* No Adverse Effect *Indirect* Adverse Effect • If exposed soils are not protected from wind or	*Construction* HWQ-1 Prepare and Implement a SWPPP *Indirect* AQ-1 Fugitive Dust Control HWQ-1 Prepare and Implement a SWPPP HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Loss of protective cover would increase the potential for surface water runoff and would expose unprotected soils to water erosion during construction. Temporary, impermeable work surfaces created during construction would also result in increased surface water runoff, exposing any unprotected soils to water erosion. *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction* HWQ-1 Prepare and Implement a SWPPP *Indirect* AQ-1 Fugitive Dust Control HWQ-1 Prepare and Implement a SWPPP HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative during construction, the Build Alternative Design Option would require excavation and site disturbance, which could expose unprotected soils to erosion. However, the amount of grading and excavation and disturbed surface area would be reduced because the Build Alternative Design Option reflects a reduced project scope and scale. This would result in an overall reduced magnitude and intensity of effects from soil erosion. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality.			• If exposed soils are not protected from wind or water erosion, such as when vegetation is cleared for work areas and material stockpiles, both the exposed work areas and any stockpiles could erode and cause indirect effects on air and water quality.			
Topic 3.9-C: Subsidence, lateral spreading, and corrosive or unstable soils	*Construction* Adverse Effect • Due to presence of compressible layers within the upper 30 feet of soil where infrastructure improvements are proposed in Segment 2 of the Project study area, settlement, both long-term and immediate, is anticipated. • Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of corrosive soils to be exposed during construction. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines	GEO-1 Prepare Final Geotechnical Report.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Due to presence of compressible layers within the upper 30 feet of soil where infrastructure improvements are proposed in Segment 2 of the Project study area, settlement, both long-term and immediate, is anticipated. • Due to the moderate to severe corrosion potential of the soils in the Project study area, there is an increased risk of corrosive soils to be exposed during construction. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines	GEO-1 Prepare Final Geotechnical Report.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the effects from subsidence, lateral spreading, and corrosive or unstable soils would be reduced when compared to the Build Alternative due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, resulting in less ground disturbance and less risk of corrosive soils to be exposed. LAUS and Rail Yard • Reduced concourse related improvements, including the reduced pedestrian passageway width and removal of the West Plaza, would result in less ground disturbance and less risk of corrosive soils to be exposed. South of LAUS • Slight increase in magnitude of effects of damage to bridge foundations because additional bents with deep foundations would be required to support the aerial viaduct from LAUS to the west bank of the Los Angeles River. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.			when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.			
Topic 3.9-D: Expansive soils	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Soils within the project footprint are considered to have a low expansion potential. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the likelihood of encountering expansive soils would remain low and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.10, Hazardous Waste and Materials							
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction.	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* *No Adverse Effect*	*Construction* Adverse Effect • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction.	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (HMMP)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would decrease the overall scope and scale of the project, use of hazardous materials during construction would still be required. The risk of accidental release of hazardous materials from routine transport, use, or disposal if not properly managed would be reduced when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	• The use of hazardous materials and substances would be required during construction, if a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* *No Adverse Effect*			• The use of hazardous materials and substances would be required during construction, if a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect			significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. Quantification of the reduction in hazardous materials transport, use, or disposal would depend on estimates of those quantities that are generally not available until the 100 percent design level.
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • A total of 13 sites (8 RECs, 2 Historic RECs, and 3 Controlled RECs) were identified within and adjacent to the Project footprint. 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 during construction. • The Project footprint is located in proximity to two oil fields located approximately 0.5-mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil seeps and the accumulation of oil and	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • A total of 13 sites (8 RECs, 2 Historic RECs, and 3 Controlled RECs) were identified within and adjacent to the Project footprint. 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 during construction. • The Project footprint is located in proximity to two oil fields located approximately 0.5-mile northwest of Project study area. Based on this proximity, low risk, naturally-occurring oil	*Construction* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of the transport, use, or disposal of hazardous materials under the Build Alternative Design Option would be slightly reduced when compared to the Build Alternative due to: North of LAUS • The reduced extent of the throat track reconstruction beginning south of the Vignes Street Bridge would result in a reduced volume of excavation or disturbance of potentially contaminated soils. LAUS and Rail Yard • Reduced volume of excavation or disturbance of potentially contaminated soils for the concourse improvements and reduced width of pedestrian passageway • Reduced demolition activity from two fewer platforms being elevated. Quantification of the above reductions would depend on estimates of those quantities that are generally not available until the 100 percent design level.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	methane gas also have the potential to occur within the Project footprint. • An accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	HAZ-7 Materials/Abandoned Oil Wells are Encountered Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation		seeps and the accumulation of oil and methane gas also have the potential to occur within the Project footprint. • An accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment.	HAZ-7 Materials/Abandoned Oil Wells are Encountered Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation		The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The risk of hazardous materials being released into the environment was not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-1 through HAZ-8 are still considered sufficient to reduce the risk to No Adverse Effect.
Topic 3.10-C: Hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* Adverse Effect • Transport and disposal of soil or other media contaminated with hazardous materials may result in an indirect effect to nearby schools during an accidental release.	*Indirect* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* Adverse Effect • Transport and disposal of soil or other media contaminated with hazardous materials may result in an indirect effect to nearby schools during an accidental release.	*Indirect* HAZ-1 Prepare a Construction Hazardous Materials Management Plan (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 (HASP) HAZ-5 LUC Sites and Coordination with the DTSC HAZ-6 Halt Construction Work if Potentially Hazardous	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of effects from hazardous emissions or handling of hazardous waste or materials within 0.25 mile of an existing or proposed school would be reduced under the Build Alternative Design Option when compared to the Build Alternative due to the reduced extent of the throat track construction, partially elevated rail yard, fewer platforms demolished, and one less bridge being replaced. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The risk of hazardous emissions, waste, or materials being transported within 0.25 mile of a school was not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-1 through HAZ-8 are still considered sufficient to reduce the risk to No Adverse Effect.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
		Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation			Materials/Abandoned Oil Wells are Encountered HAZ-7 Compliance with the City of Los Angeles Building Code Methane Regulations HAZ-8 Pre-Demolition Investigation		
Topic 3.10-D: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. • Seven sites near the Project footprint have land use restrictions associated with them. 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, which could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect	*Construction* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with moderate or high-risk ratings could pose a health hazard to construction employees, the public, and the environment. • Seven sites near the Project footprint have land use restrictions associated with them. 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, which could pose a health hazard to construction employees, the public, and the environment.	*Construction* HAZ-2 Prepare Project-wide Phase II ESA (based on completed Phase I ESA) HAZ-4 Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP) HAZ-5 LUC Sites and Coordination with the DTSC	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Overall, the magnitude and intensity of the transport, use, or disposal of hazardous materials for the Build Alternative Design Option would be the reduced when compared to the Build Alternative due to: North of LAUS • The reduced extent of the throat track reconstruction beginning south of the Vignes Street Bridge would result in a reduced volume of excavation or disturbance of potentially contaminated soils. LAUS and Rail Yard • Reduced volume of excavation or disturbance of potentially contaminated soils for the concourse improvements and reduced width of pedestrian passageway. Quantification of the above reductions would depend on estimates of those quantities that are generally not available until the 100 percent design level. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required. The relative risks that hazardous materials sites pose to the Project were not quantifiable when the technical studies were prepared. However, mitigation measures HAZ-2, HAZ-4, and HAZ-5 are still considered sufficient to reduce the risk to No Adverse Effect.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Indirect No Adverse Effect			*Operations* No Adverse Effect *Indirect* No Adverse Effect			
Section 3.11, Public Utilities and Energy							
Topic 3.11-A: Water supply and infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on water supply and infrastructure would remain the same and no adverse effects would occur. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect • Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. *Operations* Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. *Operations* Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and	*Construction* HWQ-1 Prepare and Implement a SWPPP *Operations* HWQ-2 Final Water Quality BMP Selection (Caltrans ROW) HWQ-3 Final Water Quality BMP Selection (Railroad ROW) HWQ-4 Final Water Quality BMP Selection (City of Los Angeles)	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The effects related to drainage capacity and infrastructure would be reduced in magnitude and intensity when compared to the Build Alternative due to: North of LAUS • Decrease in the magnitude of construction changes in drainage patterns from the reduced extent of throat track reconstruction and retaining the existing Vignes Street Bridge instead of replacing it. LAUS and Rail Yard • Decrease in construction related drainage changes and impervious surfaces from reduced extent of concourse related improvements, including the elimination of the West Plaza, reduced canopy coverage, and reduced width of the pedestrian passageway. • Decrease in construction related drainage changes and impervious surfaces from raising only 4 rail yard

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. *Indirect* No Adverse Effect			increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. *Indirect* No Adverse Effect			platforms elevated a maximum of 9 to 12 feet instead of 15 feet. South of LAUS • Decrease in construction related drainage changes and impervious surfaces from reduced width of run-through structure. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-C: Wastewater treatment capacity and infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of the project when compared to the Build Alternative, the effect on wastewater treatment capacity and infrastructure would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-D: Solid waste collection and landfill capacity	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Reduced –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would reduce the overall scope and scale of the project components when compared to the Build Alternative, resulting in a reduction in the magnitude of waste generated during construction. Effects on solid waste collection and landfill capacity throughout operations would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
Topic 3.11-E: Telecommunications infrastructure	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar –** The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Although the Build Alternative Design Option would reduce the overall scope and scale of project components when compared to the Build Alternative, effects on telecommunications infrastructure would remain the same. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.11-F: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Build Alternative would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect • The Build Alternative Design Option would accommodate current and anticipated future increases in rail/transit for the region, resulting in an indirect beneficial effect on energy resources.	No Mitigation Measures are required.	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Similar –** The Build Alternative Design Option would be located in the same location as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would result in beneficial effects related to energy demand, infrastructure, and compliance with initiatives for energy or energy efficiency as it would increase rail/transit for the region, resulting in an indirect beneficial effect on energy resources. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.12, Cultural and Paleontological Resources							
Topic 3.12-A: Cultural Resources	*Construction* Adverse Effect • Adverse effects may occur on one archeological historic property (CA-LAN-1575/H) and	*Construction* CUL-1 Archaeological Treatment Plan (ATP) CUL-2 Built Environment Treatment Plan (BETP)	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect*	*Construction* Adverse Effect • Adverse effects may occur on one archeological historic property (CA-LAN-1575/H) and	*Construction* CUL-1 Archaeological Treatment Plan (ATP) CUL 2 Built Environment Treatment Plan (BETP)	*Construction* Adverse Effect *Operations* No Adverse Effect *Indirect*	**Reduced** - The Build Alternative Design Option would be located in the same location as the Build Alternative and would result in similar effects to the built environment and known and unknown archaeological historic properties, but the magnitude and intensity would be reduced due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it would reduce the magnitude of effects to

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	three built environment historic properties (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.		Adverse Effect	two built environment historic properties (Los Angeles Union Passenger Terminal and North Main Street Bridge). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects to archaeological historic properties during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.		Adverse Effect	historic properties and require less ground disturbance, resulting in reduced effects to archaeological historic properties. LAUS and Rail Yard • Reduced width of expanded pedestrian passageway from 140 feet to 100 feet and elimination of the West Plaza would result in less ground disturbance and reduced potential for effects to archaeological historic properties. • Reduced elevated rail yard height with fewer platforms raised and only partial reconstruction of the Cesar Chavez Bridge would result in reduced physical effects to character-defining features of Los Angeles Union Passenger Terminal. • Reduced canopy coverage and change in type, limited to individual canopies over rail yard platforms would result in reduced visual effects to Los Angeles Union Passenger Terminal. South of LAUS • Construction of a single aerial viaduct from LAUS to the BNSF West Bank Yard instead of a combination of bridges and embankments would result in increased ground disturbance from bridge piles and increased potential for effects to archaeological historic properties. Overall, the Build Alternative Design Option would result in a decrease in the magnitude of effects related to cultural resources. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Ground-disturbing construction activities with deeper excavations for proposed bridge	*Construction and Indirect* PAL-1 Paleontological Mitigation Plan (PMP) PAL-2 Paleontological WEAP Training	*Construction* Adverse Effect *Operations* No Adverse Effect	*Construction* Adverse Effect • Ground-disturbing construction activities with deeper excavations for proposed bridge	*Construction and Indirect* PAL-1 Paleontological Mitigation Plan (PMP) PAL-2 Paleontological WEAP Training	*Construction* Adverse Effect *Operations* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location as the Build Alternative and would result in similar effects to paleontological resources, but the magnitude and intensity would be reduced due to: North of LAUS

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	structures may have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	PAL-3 Curation	*Indirect* No Adverse Effect	structures may have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium and underlying Puente Formation. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	PAL-3 Curation	*Indirect* No Adverse Effect	• Retaining the existing Vignes Street Bridge instead of replacing it, resulting in reduced potential for ground disturbance in paleontologically sensitive deposits. LAUS and Rail Yard • Reduced width of expanded pedestrian passageway from 140 feet to 100 feet and elimination of the West Plaza, resulting in less potential for ground disturbance in paleontologically sensitive deposits. South of LAUS • Construction of a single viaduct structure instead of a combinations of aerial viaducts and embankments would result in increased potential for ground disturbance in paleontologically sensitive deposits from deep excavation for bridge piles. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.13, Economic and Fiscal Impacts							
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • During construction and operation, the Build Alternative would generate employment, labor income, and tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect	*Construction, Operations, and Indirect* Beneficial Effect • During construction and operation, the Build Alternative Design Option would generate employment, labor income, and tax revenues.	No Mitigation Measures are required.	*Construction* Beneficial Effect *Operations* Beneficial Effect *Indirect* Beneficial Effect	**Similar** – The Build Alternative Design Option would be located in the same, previously evaluated project footprint, and would result in similar impacts when compared to the Build Alternative. During construction, the Build Alternative Design Option would generate 27,440 job years, which would also translate to $4.28 billion in output and $0.61 billion in federal, state, and local tax revenues (in dollars of 2019), compared to the Build Alternative, which would generate 33,536 job years, $5.2 billion in output, and $0.7 billion in total federal, state, and local tax revenues. The Build Alternative Design Option would also require the full or partial acquisition of several parcels that are expected to result in the loss of 13 to 20 jobs (depending on how many relocate within Los Angeles County) and reduced annual property tax revenues of up to $335,221 (in dollars of 2019). The Build Alternative would result in the loss of up to 20 to 60 jobs and reduced annual property tax revenues of up to

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							$202,683. When compared to the Build Alternative, Build Alternative Design Option would result in 7 to 40 fewer lost jobs and $66,274 more in tax revenues The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.14, Safety and Security							
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or construction within roadways) could increase emergency response times. *Operations* Beneficial Effect • During operations, the Build Alternative would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Concourse-related improvements would improve emergency access for first	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Increased traffic congestion caused by construction vehicles and access disruptions (such as road closures or construction within roadways) could increase emergency response times. *Operations* Beneficial Effect • During operations, the Build Alternative Design Option would alleviate capacity constraints at LAUS and would enhance pedestrian access to train platforms; enhance passenger safety, flow, and capacity; and increase accessibility for passengers with new facilities that meet current CBC and ADA requirements. Concourse-related improvements would improve emergency	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	**Reduced** - The Build Alternative Design Option would result in a reduction in the magnitude and intensity of construction-related traffic delays and access disruptions that would lead to community safety service delays when compared to the Build Alternative due to: North of LAUS • Retaining the existing Vignes Street Bridge instead of replacing it, reducing the magnitude of traffic delays, roadway closures, and access disruptions from the closure of only Cesar Chavez Avenue. LAUS and Rail Yard • Reduced magnitude of construction-related traffic that could contribute to increased traffic congestion due to raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. South of LAUS • Construction of 8 run-through tracks on a single viaduct track structure versus 10 run-through tracks on multiple viaduct track structures, resulting in reduced magnitude of temporary closures of US-101 during the night. Once operational, the reduced extent of concourse-related improvements described above would not reduce beneficial effects to passenger safety, flow, capacity, and accessibility because the proposed concourse-related improvements would still achieve these objectives. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	responders and improve passenger concourse egress and ingress. *Indirect* No Adverse Effect			access for first responders and improve passenger concourse egress and ingress. *Indirect* No Adverse Effect			significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. • Pedestrian and bicycle access to and from LAUS may 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). • Construction activities would potentially create air quality effects through	*Construction* TR-1 Prepare a Construction TMP AQ-1 Fugitive Dust Control AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Construction activities associated with the Build Alternative may result in potential safety hazard risks that could include, but not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or vehicles, for the general public, LAUS patrons and personnel, and construction workers within and adjacent to the construction zone. • Pedestrian and bicycle access to and from LAUS may also be temporarily affected and bicyclists could be subject to hazardous conditions near work zones during the construction of bridge improvements at Cesar Chavez Avenue and modifications to local streets (including potential street closures and vacations). • Construction activities would potentially create	*Construction* TR-1 Prepare a Construction TMP AQ-1 Fugitive Dust Control AQ-2 Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment	*Construction* No Adverse Effect *Operations* Beneficial Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Proposed changes as part of the Build Alternative Design Option would result in a reduction in the magnitude and intensity of effects to safety conditions when compared to the Build Alternative due to: North of LAUS • Fewer construction activities from the reduced extent of the throat track reconstruction and elimination of the Vignes Street Bridge replacement eliminating potentially hazardous conditions at that location. No hazardous conditions near work zones on Vignes Street would be required. LAUS and Rail Yard • Reduced extent of partially elevated rail yard and concourse related improvements would result in a reduced scale of construction area and a reduced construction schedule, resulting in reduced safety risk from construction. • Reduced construction related safety hazards for multimodal commuters travelling through LAUS due to the reduced extent of concourse-related improvements. South of LAUS • Construction of 8 run-through tracks on a single viaduct track structure versus 10 run-through tracks on multiple viaduct tract structures would require a shorter construction period, reducing the magnitude of safety risks from construction. Once operational, with exception of the Vignes Street Bridge Replacement and the portion of the Cesar Chavez Bridge that would remain, the beneficial effects of the Build Alternative

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. *Operations* Beneficial Effect • Replacement of the Vignes Street and Cesar Chavez Avenue bridges would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. • Proposed concourse-related improvements would increase passenger capacity, enhance safety and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. • Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements on Vignes Street and Cesar Chavez Avenue would also enhance pedestrian and bicycle safety. *Indirect* No Adverse Effect			air quality effects through the use of construction equipment and would involve earthwork activities that result in fugitive dust emissions. *Operations* Beneficial Effect • Partial replacement of the Cesar Chavez Avenue bridge would meet current seismic design standards and support the additional loading requirements for regional/intercity trains, HSR trains, and steam locomotives. • Proposed concourse-related improvements would increase passenger capacity, enhance safety and ADA accessibility, and allow for more efficient passenger egress movements to and from the various transit modes at LAUS. • Improvements to the existing North Main Street at-grade crossing would enhance the safety of the crossing for both pedestrians and bicyclists. Improvements at Cesar Chavez Avenue would also enhance pedestrian and bicycle safety.			Design Option would be similar when compared to the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
				Indirect No Adverse Effect			
Topic 3.14-C: Security conditions	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated footprint as the Build Alternative. Although the Build Alternative Design Option would decrease the scope and scale of the project, the security risks from human-caused and natural-caused threats would remain the same as those considered for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Section 3.15, Socioeconomics and Communities Affected							
Topic 3.15-A: Community facilities	*Construction* Adverse Effect • Based on the anticipated construction-related traffic delays, access to community facilities would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction* TR-1 Prepare a Construction TMP *Indirect* NV-1 Construct Sound Walls	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • Community facilities would be temporarily affected as a result of reduced lane widths, closures, and detours located throughout the construction zone; thereby requiring alternate access routes to be taken to each facility, respectively. *Operations* No Adverse Effect *Indirect* Adverse Effect Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the	*Construction* TR-1 Prepare a Construction TMP *Indirect* NV-1 Construct Sound Walls	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in magnitude of effects related to access to community facilities when compared to the Build Alternative due to: North of LAUS • The construction of one bridge versus two bridges, reduces construction related traffic delays on Vignes Street and access to community facilities. LAUS and Rail Yard • The raising of only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway reduces construction related traffic delays and access to community facilities. South of LAUS • The reduced width of the run-through structure reduces construction related traffic delays and access to community facilities.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	Indirect adverse effects from noise and vibration would occur at the William Mead Homes athletic field and the Care First Village playground/park.			Care First Village playground/park.			The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-B: Government services	*Construction* Adverse Effect • During construction, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in the vicinity of these affected roadways, especially US-101 and Alameda Street, could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. *Operation* No Adverse Effect *Indirect* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Adverse Effect • During construction of the Build Alternative Design Option, increased traffic congestion and access disruptions could affect emergency response times for police, fire, and emergency service providers. Cesar Chavez Avenue and Alameda Street are designated as disaster routes, and US-101 is designated as a disaster route freeway. Construction activities in the vicinity of these affected roadways, especially US-101 and Alameda Street, could interfere with emergency response and access if alternate routes are not identified and made available for police, fire, and emergency services personnel to utilize in the event of an emergency. *Operation* No Adverse Effect	*Construction* TR-1 Prepare a Construction TMP	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduction in the magnitude and intensity of effects related to traffic congestion and access disruptions which could affect emergency response times when compared to the Build Alternative due to: North of LAUS • The construction of one bridge versus two bridges, resulting in a reduction of the magnitude of effects related to emergency response and access from significant delays at one intersection (Intersection #27, Mission Road and Cesar Chavez Avenue) versus two (Intersection #15: Vignes Street and Main Street and Intersection #27: Mission Road and Cesar Chavez Avenue). Vignes Street would not require closure with removal of the Vignes Street Bridge replacement. LAUS and Rail Yard • Reduction in magnitude and intensity of traffic congestion and access disruptions during construction raising only 4 rail yard platforms elevated a maximum of 9 to 12 feet instead of 15 feet, the elimination of the West Plaza, and the reduced width of the expanded passageway. South of LAUS • The reduced width of the run-through structure reduces construction related traffic delays and the magnitude and intensity of effects on emergency access. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
				Indirect No Adverse Effect			
Topic 3.15-C: Population Growth	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not include residential land uses as part of the project that would result in a substantial increase unplanned population growth. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-D: Business displacements and the economy	*Construction* Beneficial Effect • During construction, the Build Alternative would generate employment, labor income, and tax revenues. *Operations* Adverse Effect • Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. *Indirect* Beneficial Effect • The Build Alternative would increase tax revenue from business,	*Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street)	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* *Beneficial Effect*	*Construction* Beneficial Effect • During construction, the Build Alternative Design Option would generate employment, labor income, and tax revenues. *Operations* Adverse Effect • Due to the regional importance of the BNSF West Bank Yard to regional goods movement, the displacement of a portion of storage tracks at the West Bank Yard is considered an adverse effect. *Indirect* Beneficial Effect • The Build Alternative Design Option would	*Operations* TR-3 Implement Malabar Yard Railroad Improvements in the City of Vernon (46th Street & 49th Street)	*Construction* Beneficial Effect *Operations* No Adverse Effect *Indirect* Beneficial Effect	**Reduced -** The Build Alternative Design Option would be in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in a reduced project scope and scale. The Build Alternative Design Option would no longer require acquisition and demolition of Amay's Bakery as it would under the Build Alternative. The Build Alternative Design Option would still require the removal of freight storage track capacity at the north end of the BNSF West Bank Yard (5,500 feet) similar to the Build Alternative. This would result in reduced impacts related to business displacement. The Build Alternative Design Option would generate less employment, labor income and tax revenues due to less construction expenditures. The reduced scale of concourse-related improvements would not reduce the economic benefit of the Build Alternative Design Option when compared to the Build Alternative. The net fiscal impacts of the Build Alternative Design Option are estimated to be $4.0 million, considering the incremental retail sales, lease revenues, property taxes and the incremental cost of facility operations, which is consistent with the net fiscal impacts of the Build Alternative. acquisition and demolition as part of the Build Alternative Design Option. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
	wages paid to workers, and is expected to generate employment during construction and operations.			increase tax revenue from business, wages paid to workers, and is expected to generate employment during construction and operations.			of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 3.15-E: Community character and cohesion	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	*Construction, Operations, and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Adverse Effect	**Similar** – The Build Alternative Design Option would be located in the same, previously evaluated project footprint as the Build Alternative. Similar to the Build Alternative, the Build Alternative Design Option would not result in permanent street closures affecting residences, and no residential communities would be displaced with the Build Alternative Design Option. The Build Alternative Design Option would provide the same access, connectivity, and non-motorized circulation benefits as the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Chapter 4, Community Analysis							
Topic 4.0A: Result in an adverse effect predominantly borne by a minority community, low-income community, or non-minority community	*Construction* Adverse effects *Operations and Indirect* No Adverse effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* Adverse effects not predominantly borne by a minority community, low-income community, or non-minority community.	*Construction* Adverse effects related to Noise, Cultural and Paleontological Resources would not be predominantly borne by a minority community, low-income community, or non-minority community *Operations and Indirect* Adverse effects not predominantly borne by a minority community,	No Mitigation Measures are required.	*Construction, Operations, and Indirect* Adverse effects not predominantly borne by a minority community, low-income community, or non-minority community.	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Like the Build Alternative, construction and operation activities associated with the Build Alternative Design Option would have impacts on all the communities in the study area, including minority communities, low-income communities, or non-minority communities. However, application of mitigation measures would achieve a reduction in impacts and eliminate the adverse impacts on all communities. Consequently, construction activities associated with the Build Alternative Design Option would not result in an adverse effect that is predominantly born by a minority community, low-income community, or non-minority community. There would be a decrease in magnitude of effects that would be experienced by minority and/or low-income communities

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
				low-income community, or non-minority community.			and non-minority and/or non-low-income communities related to: Noise and Vibration Construction impacts would be reduced for the Build Alternative Design Option, specifically throughout the duration of construction. The maximum number of impacts at each receptor group are: • 17 units impacted at William Mead Homes, compared to 41 for the Build Alternative. • 23 units impacted at Mozaic Apartments, compared to 82 units impacted for the Build Alternative. • 25 units impacted at Care First Village, compared to 36 units impacted for the Build Alternative. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 4.0B: Result in an adverse effect that will be suffered by the minority community and/or a low-income community and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority communities.	*Construction* Adverse effects that will be suffered by the minority community and/or low-income community related to Noise, Cultural and Paleontological Resources would not be appreciably more severe or greater in magnitude than the adverse effects that will suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority communities. *Operations and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities.	*Construction* Adverse effects that will be suffered by the minority community and/or low-income community related to Noise, Cultural and Paleontological Resources would not be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority community and/or non-low-income community; or vice-versa for non-minority community. *Operations and Indirect* No Adverse Effect	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No disproportionate and adverse effects on minority communities, low-income communities, or non-minority communities.	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. Adverse effects that will be suffered by minority communities and/or low-income communities were not determined to be appreciably more severe or greater in magnitude than adverse effects that will be suffered by the non-minority communities and/or non-low-income communities; or vice-versa for non-minority communities. The Build Alternative Design Option would not result in new adverse effects that will be suffered by minority communities and/or low-income communities that would be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority communities and/or low-income communities; or vice-versa for non-minority communities. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
							increased environmental impacts. Therefore, a Supplemental EIS is not required.
Chapter 5, Section 4(f)							
Topic 5.0A: Result in the use of a Section 4(f) Properties - Public Park and Recreation Areas	*Construction, Operations, and Indirect* No Use • The Build Alternative would not result in a use of any public park and recreation areas.	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Use	*Construction, Operations, and Indirect* No Use • The Build Alternative Design Option would not result in a use of any public park and recreation areas.	No Mitigation Measures are required.	*Construction, Operations, and Indirect* No Use	**Similar** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative. The Build Alternative Design Option would not result in a temporary or permanent use of a Section 4(f) public park and recreation area. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.
Topic 5.0B: Result in the use of a Section 4(f) Properties - Historic Property	*Construction* • The Build Alternative would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street Undercrossing, and North Main Street Bridge). *Indirect* The Build Alternative would not result in proximity impacts that would rise to a level of constructive use.	*Construction* CUL-2 Built Environment Treatment Plan (BETP) PR-1 Restoration of Affected Areas. CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.	*Construction* *Construction* • The Build Alternative would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative would result in the permanent use of three historic sites (Los Angeles Union Passenger Terminal, Vignes Street	*Construction* • The Build Alternative Design Option would result in a temporary occupancy at three historic sites (William Mead Homes, Denny's Restaurant, and Los Angeles Union Passenger Terminal). *Operation* • The Build Alternative Design Option would result in the permanent use of two historic sites (Los Angeles Union Passenger Terminal and North Main Street Bridge). *Indirect* The Build Alternative Design Option would not result in	*Construction* CUL-2 Built Environment Treatment Plan (BETP) PR-1 Restoration of Affected Areas. CHSRA and Metro will require the contractor to return areas of Section 4(f) properties temporarily impacted by construction related activities (e.g., construction staging or TCEs), to their original pre-construction condition or better after the completion of construction.	*Construction* • The Build Alternative Design Option would result in a temporary occupancy at two historic sites (William Mead Homes and Denny's Restaurant). *Operation* • The Build Alternative Design Option would result in the permanent use of two historic sites (Los Angeles Union Passenger Terminal and	**Reduced** – The Build Alternative Design Option would be located in the same location and within the same, previously evaluated project footprint as the Build Alternative, but would result in the reduced extent of temporary occupancy of Section 4(f) historic properties and the elimination of one permanent use of a Section 4(f) historic property. This would be due to: North of LAUS • Elimination of the Vignes Street Bridge would avoid permanent use of one Section 4(f) property compared to the Build Alternative. LAUS and Rail Yard • Reduced extent of permanent use of one Section 4(f) property (Los Angeles Union Passenger Terminal) from reduced width of expanded passageway from 140 feet to 100 feet and elimination of the West Plaza. • Reduced elevated rail yard height with fewer platforms raised and partial reconstruction of Cesar Chavez Bridge would result in reduced physical effects to character-defining features, and therefore reduced extent of permanent use of one Section 4(f) property (Los Angeles Union Passenger Terminal). Pursuant to 23 CFR 774.3I, a Least Overall Harm Analysis was performed and after considering the analysis, the Build

Table 9-14. Potential Effects Comparison of Build Alternative to Build Alternative Design Option

Environmental Topic Considered	Build Alternative			Build Alternative Design Option			Comparison of Impacts (Build Alternative versus Build Alternative Design Option)
	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures	Impact Evaluation	Mitigation Measures	NEPA Effect Determination After Implementation of Mitigation Measures	
			Undercrossing, and North Main Street Bridge). *Indirect* The Build Alternative would not result in proximity impacts that would rise to a level of constructive use.	proximity impacts that would rise to a level of constructive use.		North Main Street Bridge). *Indirect* The Build Alternative Design Option would not result in proximity impacts that would rise to a level of constructive use.	Alternative Design Option causes the least overall harm to Section 4(f) Historic Properties, in light of the statute's preservation purpose. The Build Alternative Design Option does not constitute a substantial change to the project scope or introduce new significant environmental information. It falls within the range of alternatives analyzed in the Draft EIS, with no new or increased environmental impacts. Therefore, a Supplemental EIS is not required.

Notes:

1 Although construction of the Build Alternative or Malabar Yard railroad improvements would not exceed the de minimis levels for PM2.5 and PM10; Mitigation Measure AQ-1 would still be implemented as a requirement of the Link US Build Alternative Design Option and Malabar Yard Mitigation Measure AQ-1 would also be implemented pursuant to SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts.

2 As construction of the Malabar Yard railroad improvements would overlap the 6-year timeframe for the Build Alternative, construction emissions for both activities were combined.

ACM=asbestos-containing materials; ADA=Americans with Disabilities Act; ATP=Archaeological Treatment Plan; BETP=Built Environment Treatment Plan; BMP=best management practice; BSA=biological study area; CALGreen=California Green Building Standards; 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; CO2e=carbon monoxide equivalent; CP=control point; dBA=A-weighted decibels; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; FTA=Federal Transit Administration; GHG=greenhouse gas; HABS=Historic American Buildings Survey; HACLA=Housing Authority of the City of Los Angeles; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; HSR=high-speed rail; IGP=Industrial General Permits; LADOT=Los Angeles Department of Transportation; LAUS=Los Angeles Union Station; LBP=lead-based paint; LEED=Leadership in Energy and Environmental Design; LID=low impact development; LOSSAN=Los Angeles-San Diego-San Luis Obispo; LUC=land use covenant; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MOU=memorandum of understanding; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; PCB=polychlorinated biphenyls; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RIO=River Improvement Overlay District; RTP=Regional Transportation Plan; RWQCB=Regional Water Quality Control Board; SCAG=Southern California Association of Governments; SCAQMD=South Coast Air Quality Management District; SCORE=Southern California Optimized Rail Expansion; SCRRA (or Metrolink)=Southern California Regional Rail Authority; SCS=Sustainable Communities Strategy; SHPO=State Historic Preservation Officer; SWMP=stormwater management plan; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; VOC=volatile organic compound; WEAP=worker environmental awareness program

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10.0 List of Preparers

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Mark Cheskey – Hazardous Waste and Materials and Geology, Soils, Seismicity

Annie Minihan, AICP – NEPA Assignment Team, Land Use

Paul Burge, INCE Bd. Cert., Noise and Vibration

Kathleen Kubal – Archaeologist, NEPA Assignment Team

Chandra Miller – Architectural Historian, NEPA Assignment Team

Joe Stewart – Paleontology

Mary Kaplan – Air Quality

Paola Pena – Air Quality

Christopher Warren – Air Quality

Anne Winslow – CEQA

Susan Anderson – Visual Quality and Aesthetics

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B.S. Civil Engineering. 24 years' experience in drainage, water quality, utility and civil design.

Oliver Kuehne, LEEP AP
M.A. Architecture and Town Planning. 27 years' experience in community planning, transportation planning, and urban design.

Zach MacDonell, PE
B.S. Civil Engineering. 13 years' experience in transit design.

Daniel Weddell, PE
M.E Civil Engineering. 27 years' experience in bridge design.

Quality Assurance/Quality Control:

Tim Casey – Noise/Vibration
B.S. Biology. 34 years' experience in environmental acoustics.

Tim Gnibus – NEPA EIS
B.A. Social Ecology – Environmental Health and Planning. 34 years' experience in CEQA and NEPA document management and preparation.

GIS and Graphics:

Anders Burvall
M.S. Geography; B.S. Environmental Science. 17 years' experience in spatial analysis and mapping.

Sharon Jacob
B.S. Environmental Studies. 4 years' experience in geographic information systems and spatial analysis.

Kolton Kammerer
B.S. Graphic Design. 16 years' experience in graphic design and animation/video.

Technical Editing/Document Production:

Tina Adair
B.S. Communications. 35 years' experience in writing, editing, and document preparation.

Steven Dong
B.A. Psychology. 23 years' experience in technical editing in environmental planning.

Steven Mano
B.A. Environmental Science. 45 years' experience in technical editing and environmental sciences.

Lucy Terrell-Lewis, PE
B.S. in Civil Engineering. 16 years' of experience in rail design and delivery management.

Katherine Turner
B.S. Earth Science. 7 years' experience in technical editing.

10.2.2 Subconsultants

HMMH (Noise and Vibration)

Scott Noel, AICP, INCE
B.A. Geography and Environmental Planning. 23 years' experience in noise, vibration, and environmental planning.

Dillon Tannler
B.S. Economics, Environmental Policy Management. 13 years' experience in noise, vibration, and environmental analyses.

MBI (Public Outreach)

Matthew Maldonado
B.S. Business Administration. 24 years' experience in digital marketing and communications, community engagement/outreach – transportation and infrastructure projects.

Erica Boatman
B.A. Communications; M.B.A. 23 years' experience in marketing, promotions, event execution, and community outreach.

ZMassociates (Health Risk Assessment)

Thomas Miller, Ph.D
B.S. Chemistry; Ph.D. 30 years' experience in air dispersion modeling, air toxics, environmental and human health risks, and exposure analysis.

10.3 Organizations and Persons Consulted

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Sheik Moinuddin

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Chris Haskell, PE

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Elizabeth Lun, PE

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Darrell Maxey, PE

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