Los Angeles County
Metropolitan Transportation Authority

West Santa Ana Branch Transit Corridor

Final EIS/EIR Chapter 4: Affected Environment and Environmental Consequences

Metro®

WEST SANTA ANA BRANCH TRANSIT CORRIDOR PROJECT

Final EIS/EIR Chapter 4: Affected Environment and Environmental Consequences

March 2024

Final Environmental Impact Statement/ Environmental Impact Report

LEAD AGENCIES: Federal Transit Administration of the U.S. Department of Transportation; Los Angeles County Metropolitan Transportation Authority

STATE CLEARINGHOUSE NO.: 2017061007

TITLE OF PROPOSED ACTION: West Santa Ana Branch Transit Corridor Project

Additional written comments and/or questions concerning this document should be directed to the following:

Meghna Khanna
Project Manager
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza, M/S 99-22-7
Los Angeles, CA 90012
Phone: (213) 922-6262
SGL@metro.net

Charlene Lee Lorenzo
Senior Director
Federal Transit Administration Region 9
Los Angeles Office
888 S. Figueroa Street, Suite 440
Los Angeles, CA 90017
Phone: (213) 202-3952

Rusty Whisman
Senior Transportation Program Specialist
Federal Transit Administration Region 9
888 S. Figueroa Street, Suite 440
Los Angeles, CA 90017
Phone: (213) 202-3956

TABLE OF CONTENTS

Tables

Figures

ACRONYMS AND ABBREVIATIONS

Acronyms	Definitions
µm	micrometer
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACM	asbestos-containing materials
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADL	aerial-deposited lead
APE	Area of Potential Effects
APTA	American Public Transportation Association
AQMP	Air Quality Management Plan
AREMA	American Railway Engineering and Maintenance-of-Way Association
ATSDR	Agency for Toxic Substances and Disease Registry
Basin	South Coast Air Basin
bgs	below ground surface
BMP	best management practice
Btu	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emission Estimator Model
CalGEM	California Department of Conservation Geologic Energy Management Division
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CAPTI	Climate Action Plan for Transportation Infrastructure
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCAA	California Clean Air Act

Acronyms	Definitions
CCR	California Code of Regulations
CCTV	closed circuit television
CDC	Centers for Disease Control and Prevention
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQ	Council of Environment Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities
CGS	California Geological Survey
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPTED	Crime Prevention Through Environmental Design
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRMMP	Cultural Resources Mitigation and Monitoring Program
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DC	direct current
DHSS	Delaware Health and Social Services
DIR	California Department of Industrial Relations
DOGGR	California Division of Oil, Gas, and Geothermal Resources, now known as California Geologic Energy Management Division (CalGEM)
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
ECMP	Energy Conservation and Management Plan

Acronyms	Definitions
EIR	environmental impact report
EIS	environmental impact statement
EJ	environmental justice
EMF	electromagnetic field
EMI	electromagnetic interference
EO	Executive Order
EPBT	Elysian Park Blind Thrust Fault
EPP	Emergency Preparedness Plan
ESA	environmental site assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLM	First/Last Mile
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
g	acceleration due to gravity
g/mi	grams per mile
GBV	groundborne vibration
GHG	greenhouse gas
GIS	geographic information system
GO	General Order
GSA	Groundwater Sustainability Agency
GWP	global warming potential
H_2S	hydrogen sulfide gas
HHS	U.S. Department of Health and Human Services
HUD	Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
Hz	hertz
I-	Interstate
IEEE	Institute of Electrical and Electronics Engineers
IGP	Industrial General Permit

Acronyms	Definitions
in/sec	inches per second
ITS	Intelligent Transportation System
kV	kilovolt
kWh	kilowatt hours
LA	Los Angeles
LA County	Los Angeles County
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sheriff's Department
LADWP	Los Angeles Department of Water and Power
LA-NMS	Los Angeles – North Main Street
LAPD	Los Angeles Police Department
LARWQCB	Los Angeles Regional Water Quality Control Board
LB-H	Long Beach – Hudson
LBN	Long Beach North
LB-NR	Long Beach – Near Road
LBP	lead-based paint
LBPD	Long Beach Police Department
lbs/day	pounds per day
L_{dn}	day-night noise level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent noise level
LID	low impact development
Link US	Link Union Station
L_{max}	maximum sound level
LOSSAN	Los Angeles – San Diego – San Luis Obispo Rail Corridor
LRT	light rail transit
LRTP	long range transportation plan
LRV	light rail vehicle
LST	Localized Significance Thresholds
MDE	maximum design earthquake

Acronyms	Definitions
Metro	Los Angeles County Metropolitan Transportation Authority
mG	milligauss
$MMTCO_2e$	million metric tons of CO_2e
MPE	maximum permissible exposure
mph	miles per hour
MRDC	Metro Rail Design Criteria
MRI	magnetic resonance imaging
MRN	Map Reference Number
MS4	municipal separate storm sewer system
MSAT	Mobile Source Air Toxic
MSF	maintenance and storage facility
msl	mean sea level
$MTCO_2e$	metric tons of CO_2e
MUTCD	Manual of Uniform Traffic Control Devices
mya	million years ago
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of Intent
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	operation and maintenance
O_3	ozone
OCS	overhead catenary system
ODE	operating design earthquake
OHWM	Ordinary High Water Mark

Acronyms	Definitions
OPR	Governor's Office of Planning and Research
OSHA	U.S. Occupational Safety and Health Administration
P	Primary Number
P.L.	Public Law
PAH	polycyclic aromatic hydrocarbons
Pb	lead
PCB	polychlorinated biphenyls
pCi/l	picocuries per liter of air pCi/l
PEROW	Pacific Electric Right-of-Way
PGA	peak ground acceleration
PHA	Preliminary Hazard Analysis
PHBT	Puente Hills Blind Thrust Fault
PM	particulate matter
PM_{10}	respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$	fine particulate matter of diameter less than 2.5 microns
ppm	parts per million
PPV	peak particle velocity
PQS	Professional Qualification Standards
PRC	Public Resources Code
PRMMP	Paleontological Resources Mitigation and Monitoring Program
Project	West Santa Ana Branch Transit Corridor Project
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
RHA	Rivers and Harbors Act
RMS	root mean square
ROW	right-of-way
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill

Acronyms	Definitions
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDC	Seismic Design Criteria
SEL	sound exposure level
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLF	Sacred Lands File
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SR	State Route
SRA	Source Receptor Areas
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TAZ	Transportation Analysis Zone
TC&C	train control and communications
TCE	temporary construction easement
TCP	Traditional Cultural Property
TCR	Tribal Cultural Resource
TCWP	Transportation Conformity Working Group
TMDL	total maximum daily load
TOD	transit-oriented development
TPSS	traction power substation
TSB	LACSD Transit Services Bureau
TVA	Threat and Vulnerability Assessment
U.S.C.	United States Code

Acronyms	Definitions
UPRR	Union Pacific Railroad
US-101	U.S. Highway 101
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tanks
VCE	vertical circulation element
VdB	decibel notation
VMT	vehicle miles traveled
WDR	waste discharge requirement
WRD	Water Replenishment District of Southern California
WSAB	West Santa Ana Branch

4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter discusses the existing conditions, environmental effects, project and mitigation measures, and impacts after mitigation for operation and construction of the Locally Preferred Alternative (LPA) for the West Santa Ana Branch (WSAB) Transit Corridor (Project)[1]. Effects during construction are discussed in Section 4.19, Construction Impacts, for each element of the environment. The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require the evaluation of potential effects of proposed government actions on the environment. This Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) is a joint NEPA/CEQA environmental document; therefore, each section in this chapter includes both a NEPA finding and a CEQA determination. The CEQA determination included for each element of the environment identifies the CEQA significance thresholds that are applicable to that topic and provides an evaluation of project effects relative to the thresholds. To reduce unnecessary repetition, the CEQA analysis builds upon on the information detailed in the NEPA analysis for each topic. The analysis in the Draft EIS/EIR was initiated prior to the 2020 update to the NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508) and prior to the Federal Transit Administration (FTA) updating its implementing regulations in 23 CFR 771; therefore, per the provisions of 40 CFR 1506.13, the NEPA regulations that were in place prior to September 14, 2000, have been applied throughout this Final EIS/EIR.

In January 2022, the Metro Board identified Alternative 3 as the LPA and the Bellflower maintenance and storage facility (MSF) site option. Alternative 3 was identified as the Staff Preferred Alternative in the Draft EIS/EIR for purposes of NEPA and CEQA. The analysis included in the impact analysis reports and summarized in this chapter have been updated from the Draft EIS/EIR to focus on the effects of the LPA and the Bellflower MSF. The analysis of Alternatives 1, 2, and 4; Design Options 1 and 2, and the Paramount MSF site option in the Draft EIS/EIR are incorporated here by reference. In addition, one new design option was identified during stakeholder coordination after circulation of the Draft EIS/EIR; that design option (Close 186th Street) is evaluated in this Final EIS/EIR. The analysis was also updated to reflect design refinements made to the LPA in response to comments received on the Draft EIS/EIR and stakeholder coordination completed subsequent to circulation of the Draft EIS/EIR. These changes are summarized in Section 2.4.3.2 in Chapter 2, Alternatives Considered/Project Description, and in Appendix E, Project Refinements since Circulation of the Draft EIS/EIR. The analysis was also updated to include discussion of U.S. Army Corps of Engineers (USACE) facilities in response to a comment received from USACE on the Draft EIS/EIR. The impact analysis reports and sections in this chapter were updated as applicable based on comments on the Draft EIS/EIR. The revised impact analyses have not identified any new significant impacts or any substantial increase in the severity of any significant impact identified in the Draft EIS/EIR. Refer to the individual sections within this chapter for a discussion of the specific changes made for the topic since publication of the Draft EIS/EIR.

Each section of this chapter evaluates the LPA, design option (Close 186th Street), and MSF, and, for comparison purposes, the No Build Alternative. The No Build Alternative reflects the

[1] Within this chapter, LPA and Project are generally used interchangeably.

reasonably foreseeable transportation network in 2042 and includes the existing transportation network and planned transportation improvements that have been committed to and identified in the Southern California Association of Governments (SCAG) *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) (SCAG 2016a), the Los Angeles County Metropolitan Transportation Authority's (Metro) *2009 Long Range Transportation Plan* (LRTP) (Metro 2009a), and Measure M, as well as local transportation-related projects, with the exception of the WSAB Project. The No Build Alternative, LPA, MSF, and design option are described in more detail in Chapter 2, Alternatives Considered/Project Description, of this Final EIS/EIR.

FTA published the Notice of Intent (NOI) in the *Federal Register* on July 26, 2017, pursuant to NEPA requirements. Prior to the NOI publication, Metro issued a Notice of Preparation on May 25, 2017, pursuant to CEQA requirements. The required environmental baseline socioeconomic growth projections were established in July 2017, and preparation of the Draft EIS/EIR commenced. The SCAG 2016-2040 RTP/SCS was the adopted current regional growth forecast at the time the Draft EIS/EIR baseline was established. Specifically, the baseline year 2017 and future year 2042 population, housing, and employment are derived from the Transportation Analysis Zone (TAZ)-level estimates from the SCAG 2016-2040 RTP/SCS. The Metro planning and travel demand modeling process has assumed incremental growth in the WSAB Study Area (defined as 2 miles from all four Build Alternatives considered in the Draft EIS/EIR) and surrounding region consistent with this forecast.

Connect SoCal (2020-2045 RTP/SCS) was adopted by SCAG on September 3, 2020, after the Draft EIS/EIR modeling and relevant analyses were completed. After circulation of the Draft EIS/EIR, the *West Santa Ana Branch Transit Corridor Project Final RTP/SCS Study* (Metro 2023c) was prepared and it presented a comparison of differences between the SCAG 2016-2040 RTP/SCS and the Connect SoCal regional forecast (e.g., population, housing, and employment). This comparison was used to determine whether differences in the growth forecasts would alter the planning and travel demand modeling assumptions included in the Draft EIS/EIR. A review was also performed on applicable Connect SoCal policies to determine whether there were major differences to those evaluated in the Draft EIS/EIR.

Based on the conclusions presented in the *West Santa Ana Branch Transit Corridor Project Final RTP/SCS Study*, updated analysis using Connect SoCal's growth forecast as baseline data was not conducted because the results and findings would not be substantially different than what was presented in the Draft EIS/EIR. Therefore, the horizon year for the Final EIS/EIR remains unchanged from the Draft EIS/EIR. Specifically, the comparison of the 2016-2040 RTP/SCS and Connect SoCal forecast data by TAZ for Los Angeles County and the Study Area concluded that the difference in the base year 2017 and forecasted growth for future year 2042 for population, housing, and employment for Los Angeles County and the Study Area is 2 percent or less and that the assumptions presented in the Draft EIS/EIR remain applicable and will not alter Metro's planning assumptions. In addition, Connect SoCal's guiding polices are substantially consistent with those of the 2016-2040 RTP/SCS, and the underlying principles are still relevant for the Project as a proposed regional transit system.

However, Connect SoCal is included in Section 4.1, Land Use and Section 4.5, Air Quality of this Final EIS/EIR to address consistency with regional plans and regional conformity. As discussed in Section 4.1.3.2 under the subheading "Consistency with Regional Land Use Plans, Policies, and Regulations," the LPA will be consistent with the Connect SoCal, which builds upon the 2016-2040 RTP/SCS and aims to increase the availability and use of public transit and to

encourage housing and jobs near transit. In Section 4.5.3.2 under the subheading "Transportation Conformity," the LPA is listed in the Connect SoCal Transportation System Financially Constrained Project List as a LA County transit project under the RTP ID 1TR1011 ("West Santa Ana Branch Transit Corridor LRT"). Connect SoCal Amendment #3 received federal approval of the transportation conformity determination from the Federal Highway Administration (FHWA) and FTA on June 9, 2023. In addition, the LPA is listed in the 2023 Federal Transportation Improvement Program (FTIP) under the FTIP ID LA0G1094. The 2023 FTIP Consistency Amendment #23-03 was approved by the FHWA and FTA on June 9, 2023, in conjunction with the Connect SoCal Amendment 3 approval. To address the LPA's regional conformity in the Final EIS/EIR, Connect SoCal was used because of the updated listing in the RTP and FTIP. This updates the Draft EIS/EIR analysis with the latest SCAG RTP/SCS and does not change the impact conclusion regarding regional conformity in the Draft EIS/EIR. Other environmental analyses presented in Chapter 3, Transportation, and Chapter 4, Affected Environment and Environmental Consequences, of this Final EIS/EIR do not include Connect SoCal as an update to the 2016-2040 RTP/SCS because the underlying principles of the two RTP/SCS are still relevant for the Project. Impact conclusions for the other environmental topics remain the same as discussed in the Draft EIS/EIR.

The Affected Area for each element of the environment is a subset of the Study Area, as described in Section 2.3 of Chapter 2, Alternatives Considered/Project, of this Final EIS/EIR. The Affected Area varies for each element of the environment to include the geographical extents that may be affected by operation and construction of the LPA, MSF, and design option for that individual element. The Affected Area is defined in the evaluation of each element as an element-specific area surrounding the alignment, stations, parking facilities, traction power substations (TPSSs), and MSF. Table 4.0.1 describes the geographic extent of the impact analysis for each environmental resource.

Table 4.0.1. Geographic Extent of Evaluation

Topic	Geographic Extent
Study Area	2-mile buffer from the 4 Build Alternative alignments evaluated in the Draft EIS/EIR
Transportation	Traffic Operations: key intersections identified that could be affected by the LPA Transit: 2-mile buffer from the LPA alignment Active transportation: Within 100 feet of the LPA Parking: 0.25 mile around each station and along streets immediately adjacent to the alignment and other project features, and off-street parking lots where permanent easements or acquisitions are required for the LPA Freight: Within 100 feet of the LPA
Land Use and Development	Within 50 feet of the LPA; to provide an overall context, land uses within 0.25 mile of the alignment and MSF and within 0.5 mile of the station are also presented
Community and Neighborhoods	Within 0.25 mile of the LPA alignment, parking facilities, and MSF site, and 0.5 mile around the proposed station areas

Topic	Geographic Extent
Displacements and Acquisitions	Displacement area: privately held residential, commercial, and industrial properties directly affected by the LPA Replacement area: cities affected by the LPA and other nearby cities that may provide replacement site options
Visual Quality and Aesthetics	Localized viewsheds for the LPA, including adjacent street ROWs that parallel, intersect, or face the LPA
Air Quality	South Coast Air Basin
Greenhouse Gas Emissions	South Coast Air Basin
Noise and Vibration	Immediate vicinity, defined as within 350 feet of the LPA for operations and 500 feet for construction
Ecosystems and Biological Resources	Within 100 feet of the LPA
Geotechnical/Subsurface/Seismic	Within 250 feet of the LPA
Hazards and Hazardous Materials	Within 200 feet of the LPA; 0.25 mile for schools and landfills
Water Resources	Within 500 feet of the construction footprint
Energy	SCAG region and service areas for electricity and natural gas suppliers
Electromagnetic Fields	1,000 feet from the project alignment for land uses that could have highly EMI-sensitive medical or scientific equipment
Historic Resources	The architectural APE for the Project was delineated prior to release of the Draft EIS/EIR, which was also prior to the identification of the LPA. The architectural APE includes areas that may be subject to potential direct and indirect effects, including visual, noise, vibration, and/or ground settlement, that may result from construction or implementation of an alternative. Where an alternative would be underground or aerial, the architectural APE generally includes a one-parcel buffer extending out from the direct APE. Where the alternative would be at-grade, the architectural APE generally encompasses the same area as the direct APE described below. Refer to Section 4.14 for additional information on the architectural APE

Topic	Geographic Extent
Archaeological Resources	The direct APE for the Project was delineated prior to release of the Draft EIS/EIR, which was also prior to the identification of the LPA. The direct APE encompasses the alignment ROWs, as well as all associated elements where construction will occur, including stations, laydown yards, maintenance facility, and parking lots. Where an alternative would be at-grade, the direct APE generally includes the width of the existing railroad ROW. Where the alternative would be aerial, the direct APE encompasses the width of the proposed ROW. The direct APE also encompasses the construction footprint for roadway modifications and small-scale, low-lying modifications (e.g., sidewalk realignment) on parcels adjacent to road ROW. In areas with potential direct ground disturbance, the vertical extent of the direct APE extends approximately 150 feet below the existing ground surface and approximately 90 feet above the existing ground surface. Refer to Section 4.14 for additional information on the direct APE
Paleontological Resources	The ground surface and subsurface within the LPA alignment, stations, MSF site, TPSS sites, and parking facilities where ground disturbance associated with the Project may occur
Tribal Cultural Resources	Within the direct APE established for the Project, as described above for "Archaeological Resources"
Parklands and Community Facilities	Within 0.25 mile of the LPA
Economic and Fiscal Impacts	Within 0.25 mile of the LPA alignment, parking facilities, and MSF site, and 0.5 mile around the station areas
Safety and Security	Within 100 feet of the LPA and within the 2-mile buffer from the LPA alignment for emergency services
Environmental Justice	Within 0.25 mile of the LPA alignment, parking facilities, and MSF site, and 0.5 mile of the station areas

Source: Prepared on behalf of Metro in 2023
Note: APE = Area of Potential Effects; EIS/EIR = environmental impact statement/environmental impact report; EMI = electromagnetic interference; LPA = Locally Preferred Alternative; MSF = maintenance and storage facility; ROW = right-of-way; SCAG = Southern California Association of Governments; TPSS = traction power substation

Project and/or mitigation measures have been identified to address impacts. Project measures are incorporated as part of the Project and consist of design features, best management practices (BMPs), or other measures required by law and/or permit approvals that avoid or minimize potential effects. These measures are requirements of the Project. Where relevant, the measures were included in the impact analyses. Mitigation measures are additional actions, not otherwise part of the Project, that are designed to avoid, minimize, or compensate for adverse or significant impacts. These measures are required where significant or adverse impacts have been identified based on the impact analyses.

Based on the impacts of the social response to the COVID-19 pandemic and the resulting decline in travel demand, at this time, it is not possible to predict future changes to the Project's Purpose and Need, schedule, and operational impacts that may result from a COVID-19 response of an unpredictable nature and length. Should significant changes in the planning assumptions, project schedule, project scope, or surrounding project environment result

because of a prolonged COVID-19 response, FTA and Metro will consider additional environmental evaluation and public input consistent with NEPA and CEQA.

4.1 Land Use

This section summarizes the potential adverse effects and impacts on existing land uses and developments for the No Build Alternative and LPA. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Land Use Impact Analysis Report* (Metro 2024a).

This section has been revised since the Draft EIS/EIR to reflect identification of the LPA, inclusive of refinements; comments received on the Draft EIS/EIR; coordination with applicable jurisdictions; and to reflect new, or updates to, plans and policies that were adopted since circulation of the Draft EIS/EIR. Specifically, this section has been updated to include additional land uses in the Affected Area as requested by stakeholder cities (e.g., industrial uses near the I-105/C Line Station and a parking facility near the Bellflower Station) and the evaluation of compatibility with additional plans and policies. The land use compatibility analysis has also been updated to reflect refinements associated with the LPA, including grade crossing closures; turning restrictions, including for vehicular freight (e.g., freight trucks); and street closures/modifications. The analysis has also been updated to reflect that the Arthur Avenue bridge will no longer require demolition and reconstruction and that the pedestrian bridge connecting the campuses of Paramount High School will be replaced with a new pedestrian bridge rather than an undercrossing as proposed in the Draft EIS/EIR.

The Land Use impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

4.1.1 Regulatory Setting and Methodology

4.1.1.1 Regulatory Setting

No federal plans, policies, or regulations are applicable regarding land use.

State and Regional

Applicable state and regional plans, policies, and regulations regarding land use include the Sustainable Communities and Climate Protection Act of 2008 (Senate Bill [SB] 375), California Planning and Zoning Law, SCAG *2016-2040* RTP/SCS (SCAG 2016a), SCAG, 2020-2045 RTP/SCS (SCAG 2020), *Metro Moving Beyond Sustainability* (Metro 2020k), *Metro Countywide Sustainability Planning Policy & Implementation Plan* (Metro 2012c), *Active Transportation Strategic Plan* (Metro 2016), 2009 LRTP (Metro 2009a) and 2020 LRTP (Metro 2020i), *Sustainable Rail Plan* (Metro 2013b), *Complete Streets Policy* (Metro 2014a), *First/Last Mile Strategic Plan* (Metro 2014b), *Transit-Oriented Communities Policy* (Metro 2018a), and *Transit-Oriented Communities Policy Implementation Plan* (Metro 2020i). The LPA is identified in the SCAG 2016-2040 RTP/SCS and the SCAG 2020-2045 RTP/SCS as a financially constrained transit project from the Los Angeles/Orange County boundary extending toward downtown Los Angeles. The LPA is listed in the Connect SoCal Transportation System Financially Constrained Project List as an LA County transit project under the RTP ID 1TR1011 ("West Santa Ana Branch Transit Corridor LRT"). The RTP entry for the LPA was updated to identify an opening year for the LPA of 2028 to 2035 and a decrease in the project cost associated with the length of the LPA alignment relative to other alternatives assessed in

the Draft EIS/EIR. The Project is also listed as a study in the *2017* FTIP (SCAG 2016b). Additionally, the LPA is listed in the 2023 FTIP (FTIP ID No. LA0G1094), although it is currently only programmed as a Project Study.

Local

Applicable local plans, policies, and regulations include general plans, community plans, specific plans, master plans and bicycle master plans for the 12 local jurisdictions that the LPA will be located in or adjacent to. These plans include: *City of Los Angeles General Plan* (which includes the *General Plan Framework)* (City of Los Angeles 2001a), *Mobility Plan 2035* (City of Los Angeles 2016), *Southeast Los Angeles Community Plan* (City of Los Angeles 2017a), *Los Angeles County General Plan* (Los Angeles County 2015), *Florence-Firestone Community Plan* (Los Angeles County 2019), *City of Huntington Park General Plan* (City of Huntington Park 1991), *City of Los Angeles Land Use/Transportation Policy* (City of Los Angeles 1993), *City of Bell 2030 General Plan* (City of Bell 2018a), *City of Cudahy 2040 General Plan* (City of Cudahy 2018a), *City of South Gate General Plan 2035* (City of South Gate 2009), *Gateway District Specific Plan* (City of South Gate 2017a), *Firestone and Atlantic Station Area Plan* (SCAG 2013b), *Hollydale Village Specific Plan* (City of South Gate 2017b), *Downey Vision 2025* (City of Downey 2005), *Rancho Los Amigos Specific Plan* (City of Downey 1989), *City of Paramount General Plan* (City of Paramount 2007), *City of Bellflower General Plan: 1995-2010* (City of Bellflower 1994), *Downtown Bellflower Transit-Oriented Development Specific Plan* (City of Bellflower 2019), *City of Cerritos General Plan* (City of Cerritos 2004), and *City of Artesia General Plan 2030* (City of Artesia 2010).

The adopted bicycle master plans in the affected jurisdictions are as follows: *City of Los Angeles 2010 Bicycle Master Plan* (City of Los Angeles 2011), *County of Los Angeles 2012 Bicycle Master Plan* (Los Angeles County 2012b), *City of Huntington Park Bicycle Transportation Master Plan* (City of Huntington Park 2014), *City of Vernon Bicycle Master Plan* (City of Vernon 2017), *South Gate Bicycle Transportation Plan* (City of South Gate 2012), *City of Bell Bicycle Master Plan* (City of Bell 2016), *City of Downey Bicycle Master Plan* (City of Downey 2015), and *Bellflower-Paramount Active Transportation Plan* (City of Bellflower and City of Paramount 2019).

Future Planning and Projects in the Vicinity of the Locally Preferred Alternative

Several ongoing and future transit- and transportation-related projects and programs will be located in the vicinity of the LPA that may complement the overall Metro transit network. The following is a list of currently known major projects relevant to the LPA: Metro's Transit-Oriented Development (TOD) Planning Grant Program, Metro Active Rail to Rail/River Transportation Corridor Project, Metro I-710 Corridor Bike Path Project, Metro Rio Hondo Confluence Station Feasibility Study, Los Angeles County Rancho Los Amigos Redevelopment Project, City of Bellflower Downtown Station Area Specific Plan, and the South Gate Gateway District Specific Plan.

The Metro Active Rail to Rail/River Transportation Corridor Project is approximately 10.6 miles and is comprised of two segments. Segment A (referred to as "Rail to Rail") connects the Metro K (Crenshaw/LAX) Line Fairview Heights Station to the Metro A Line Slauson Station and follows Metro-owned right-of-way (ROW) through the City of Los Angeles. Rail to Rail groundbreaking occurred in 2022 and is scheduled to open to the public in 2024. Segment B (referred to as "Rail to River") extends the project an additional 4.3 miles eastward from the Metro A Line to the Los Angeles River along Randolph Street. According to the *Rail to River Segment B Supplemental Alternative Analysis* (Metro 2022b) prepared to re-evaluate

alternatives for the project, two conditions were identified for Segment B: an interim condition comprised of Class II bike lanes between Holmes Avenue and State Street that would be implemented prior to the construction of the WSAB Project and a final condition that would be implemented when construction of the WSAB Project begins. The final condition for the Randolph corridor between Holmes Avenue and State Street is proposed to include a Class III bicycle boulevard (shared lanes). Additional information is provided in the *Rail to River Segment B Supplemental Alternative Analysis* (Metro 2022b).

The Metro I-710 Corridor Bike Path Project includes three proposed bike paths to serve bicyclists, pedestrians, and transit users of Metro's A (Blue) and C (Green) Lines: Western Levee Bike Path, Compton Boulevard Bike Path, and the Terminal Island to Rio Hondo Bike Path. The Terminal Island to the Rio Hondo Bike Trail at Garfield Avenue in the City of South Gate segment would be located in proximity to the LPA.

The Metro *Rio Hondo Confluence Station Feasibility Study* (Metro 2022c) was completed in August 2022 at the request of the Metro Board (Board Report File No. 2018-0773). The study evaluated the feasibility of a potential Rio Hondo Confluence Station along the LPA and analyzed the potential benefits and challenges of two station options to the Metro system and the surrounding community near the Rio Hondo channel and the Los Angeles River confluence area. The design of the LPA accommodates this potential infill station.

LA County Rancho Los Amigos Redevelopment Project is a 70-acre development project that would consist of a 15-acre regional sports complex, a Sherriff's Department crime lab, and headquarters for LA County Probation and Internal Services departments. The Gardendale Station will be located directly west of this project. On October 1, 2021, the City of Downey certified the specific plan that reaffirms LA County's proposed demolition of the property.

The City of Bellflower Downtown Station Area Specific Plan was adopted in October 2019 (City of Bellflower 2019). The Specific Plan area is approximately 400 acres and is bounded by Alondra Boulevard on the north, Woodruff Avenue on the east, Flower Street on the south, and Clark Avenue on the west. Metro's TOD Planning Grant Program would allow for the adoption of regulatory changes that support transit-oriented development by creating a new Specific Plan for the Bellflower Station and related environmental documentation.

The South Gate Gateway District Specific Plan (City of South Gate 2019) area is approximately 59 acres and is bounded by Atlantic Avenue to the west, Patata Street to the north, and Firestone Boulevard to the south. The purpose of the plan is to guide the future redevelopment of a mixed-use, pedestrian- and transit-oriented community centered on the future LPA station in the Gateway District.

4.1.1.2 Methodology

For purposes of the land use analysis, the Affected Area for land use is defined as the area within approximately 50 feet of the LPA, including the alignment, stations, parking facilities, TPSSs, and MSF. This distance was selected because land use compatibility is assessed at the uses immediately adjacent to the project components where direct effects could occur. To provide an overall context regarding land uses surrounding the Affected Area for land use, land uses within 0.25 mile of the alignment and MSF site and 0.5 mile of the station areas are presented in the figures.

To satisfy NEPA requirements, land use effects are evaluated by examining the compatibility with existing land uses in the Affected Area for land use and consistency with pertinent objectives and policies of adopted plans and programs of the local and regional jurisdictions in which the LPA is located. The LPA is evaluated against the existing and planned developments adjacent to and surrounding the LPA to evaluate the compatibility of the facilities with neighboring land uses. An adverse effect on land use will involve physically dividing an established community (also see Section 4.2, Communities and Neighborhoods); conflicting with any applicable land use plan, policy, or regulation; or conflicting with any applicable habitat conservation plan or natural community conservation plan. The LPA is not located in a habitat conservation plan.

To satisfy CEQA requirements, land use impacts are analyzed in accordance with the *CEQA Guidelines,* identified in Section 4.1.5 of this Land Use section.

4.1.2 Affected Environment/Existing Conditions

The LPA will be located in or adjacent to the urban and suburban areas of the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the unincorporated Florence-Firestone community of LA County (Figure 4.1-1 through Figure 4.1-5). The immediate surrounding urban land uses are characterized by public facilities, commercial (offices and retail), industrial, and residential (single- and multifamily) uses. Land uses in the Affected Area for land use described in this section are generalized and are not described on a parcel-by-parcel basis.

4.1.2.1 Locally Preferred Alternative

Figure 4.1-1 through Figure 4.1-4 provide an overall context of land uses within 0.25 mile of the alignment and 0.5 mile of the stations that surround the Affected Area for land use.

Table 4.1.1 provides the land use distribution of the Affected Area for land use (50 feet adjacent to the LPA) and the surrounding land uses (within 0.25 mile of the alignment and 0.5 mile of the station areas). Industrial use is the most prominent land use adjacent to the LPA.

Table 4.1.1. Existing Land Use Distribution for the Locally Preferred Alternative

Land Use	Percent of Land Use (%) [1]	
	Affected Area [2]	Surrounding Area [3]
Agriculture	2.1	0.2
Commercial	6.3	8.3
Industrial	32.2	15.3
Institutional/Public Facilities	17.5	6.0
Open Space/Recreational Facilities	10.0	3.1
Residential	24.3	64.4
River	3.2	0.8
Vacant	4.4	1.8

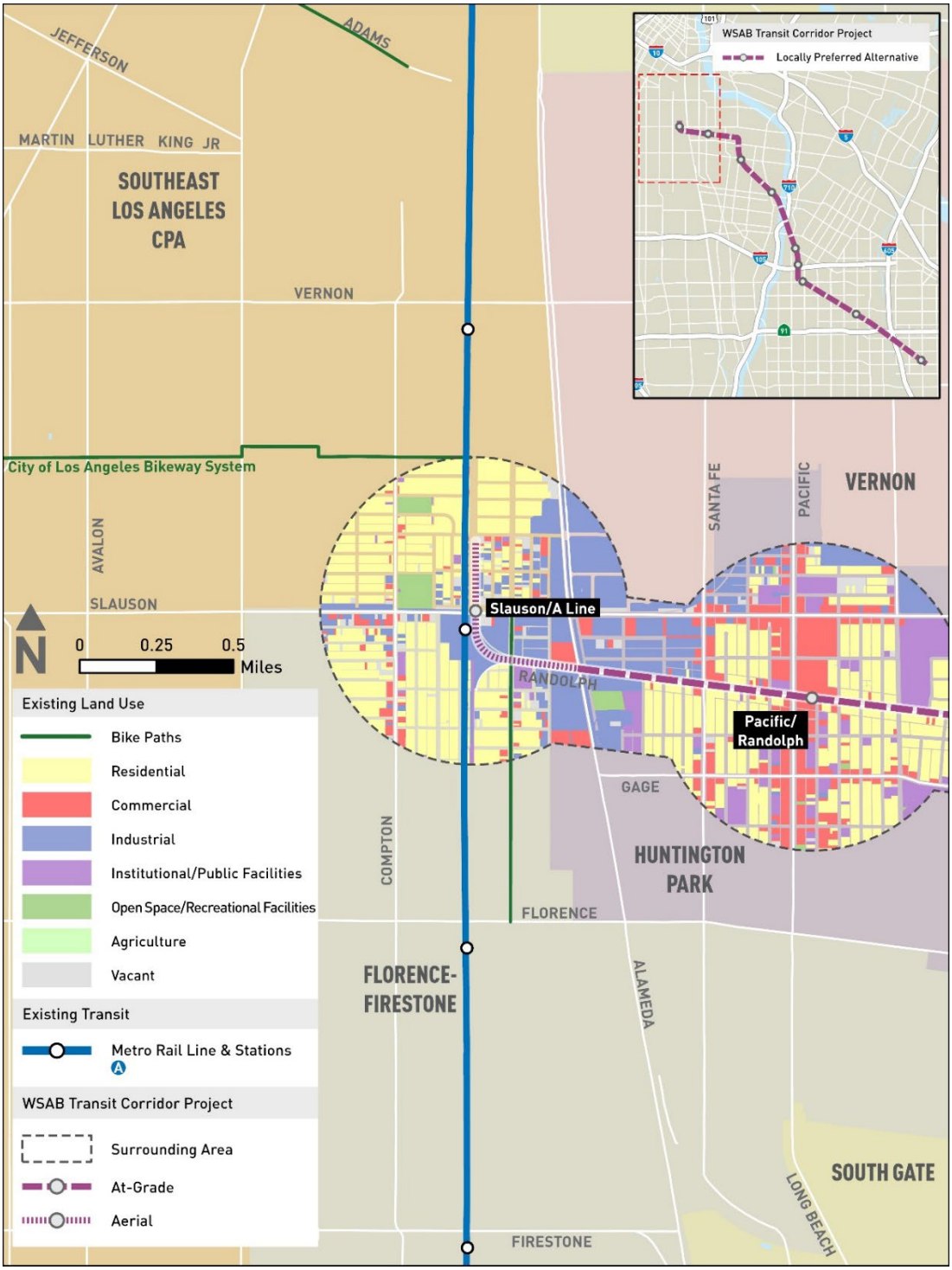
Source: Metro 2024a

Notes: [1] The land use distribution characterizes the land uses within the Affected Area and in the Surrounding Area for the LPA. Percentages of land use may not equal 100 percent due to rounding.

[2] "Affected Area" is defined as the adjacent area within approximately 50 feet of the LPA.

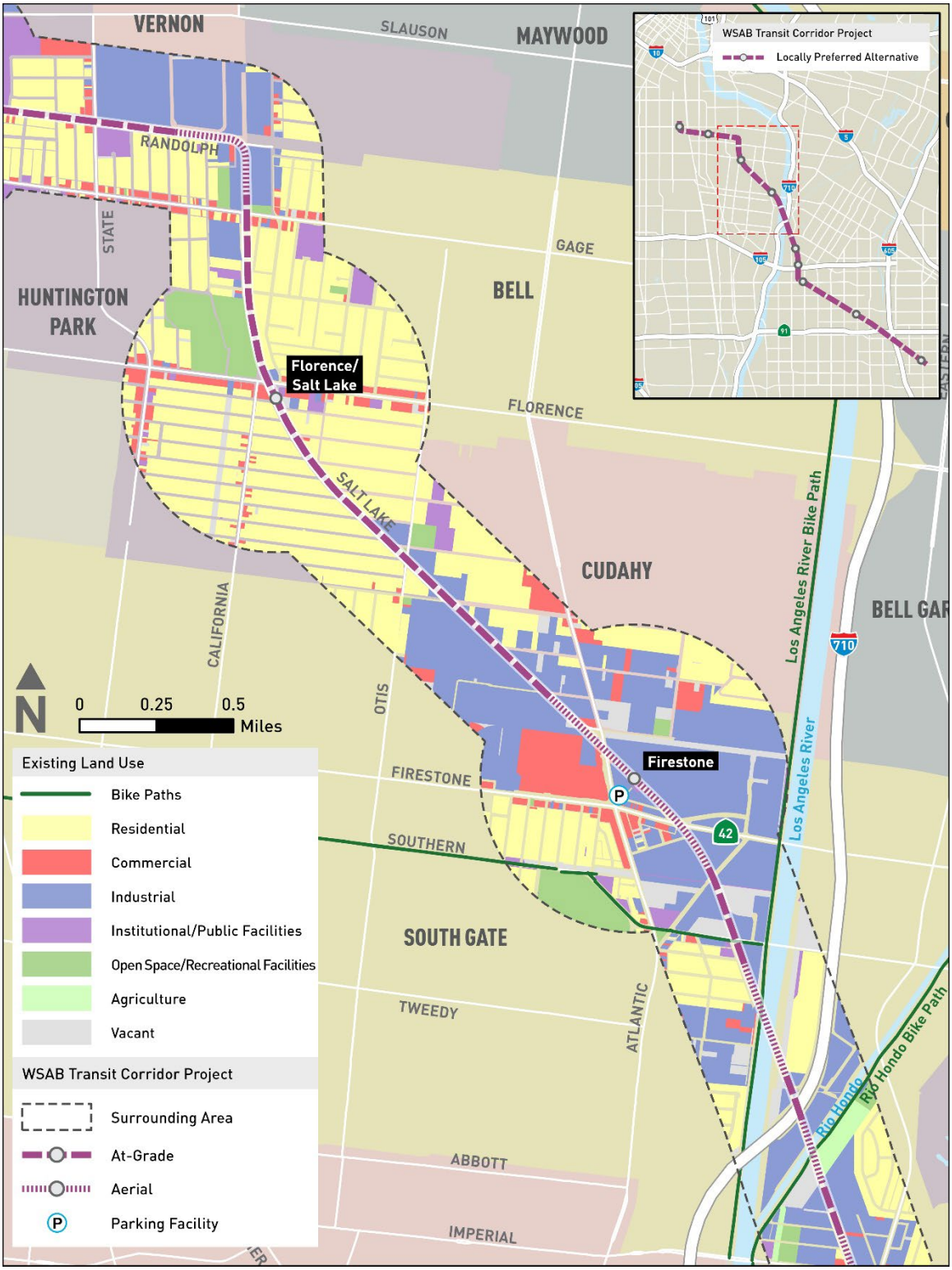
[3] "Surrounding Area" is defined as the area within 0.25 mile of the alignment and 0.5 mile of the station areas.

Figure 4.1-1. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of Stations (from Southeast Los Angeles to City of Huntington Park)



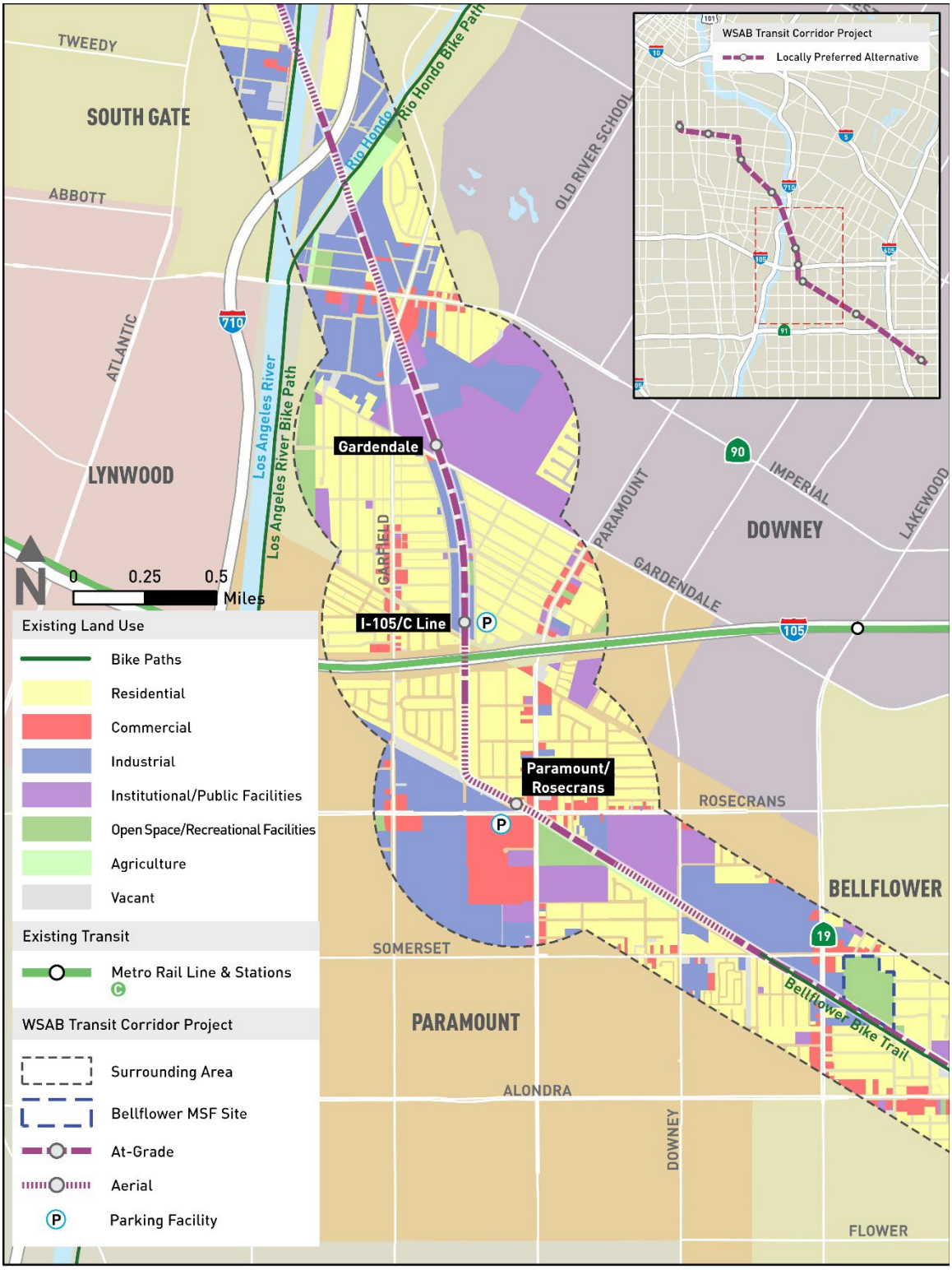
Source: LA County Assessor 2016; Metro 2024a

Figure 4.1-2. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of Stations (from City of Huntington Park to City of South Gate)



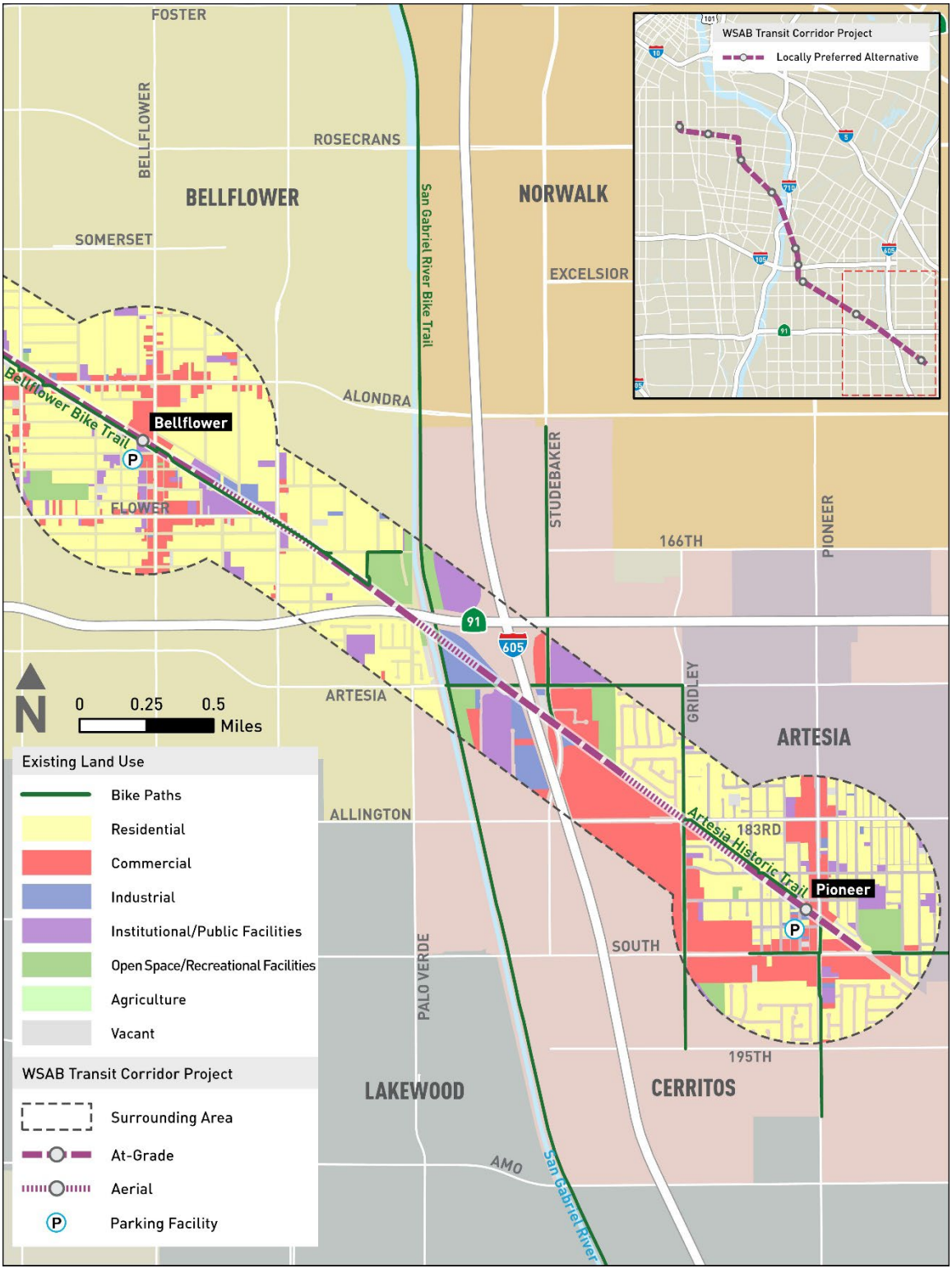
Source: LA County Assessor 2016; Metro 2024a

Figure 4.1-3. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of Stations (from City of South Gate to City of Bellflower)



Source: LA County Assessor 2016; Metro 2024a

Figure 4.1-4. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of Stations (from City of Bellflower to City of Artesia)



Source: LA County Assessor 2016; Metro 2024a
Note: The full name of the Artesia Historic Trail is the Artesia Historic District Recreational Trails

Table 4.1.2 identifies the adjacent and surrounding land uses for each station. Surrounding land uses generally include commercial, industrial, institutional/public facilities (i.e., places of worship, preschools/daycares, schools, museums, libraries, medical facilities), open space/recreational facilities (i.e., parks and recreational facilities), residential, rivers, and vacant uses.

Table 4.1.2. Existing Land Uses in the Affected Area and Surrounding Area of the Station Areas

Station Area	Affected Area[1]	Surrounding Area[2]
Slauson/A Line	Industrial	Residential, Industrial, Commercial, Open Space, Institutional/Public Facilities
Pacific/Randolph	Residential, Commercial	Residential, Industrial, Commercial, Institutional/Public Facilities
Florence/Salt Lake	Residential, Industrial	Residential, Commercial, Industrial, Open Space, Institutional/Public Facilities
Firestone	Industrial	
Gardendale	Institutional/Public Facilities	
I-105/C Line	Roadway, Industrial	Residential, Commercial, Industrial, Open Space, Institutional/Public Facilities
Paramount/Rosecrans	Residential, Commercial, Industrial	
Bellflower	Commercial, Parking Facility	
Pioneer	Commercial	Residential, Commercial, Open Space, Institutional/Public Facilities, Industrial

Source: Metro 2024a
Notes: [1] "Affected Area" is defined as the adjacent area within approximately 50 feet of the LPA.
[2] "Surrounding Area" is defined as the area within 0.25 mile of the alignment and 0.5 mile of the station areas.

4.1.2.2 Maintenance and Storage Facility

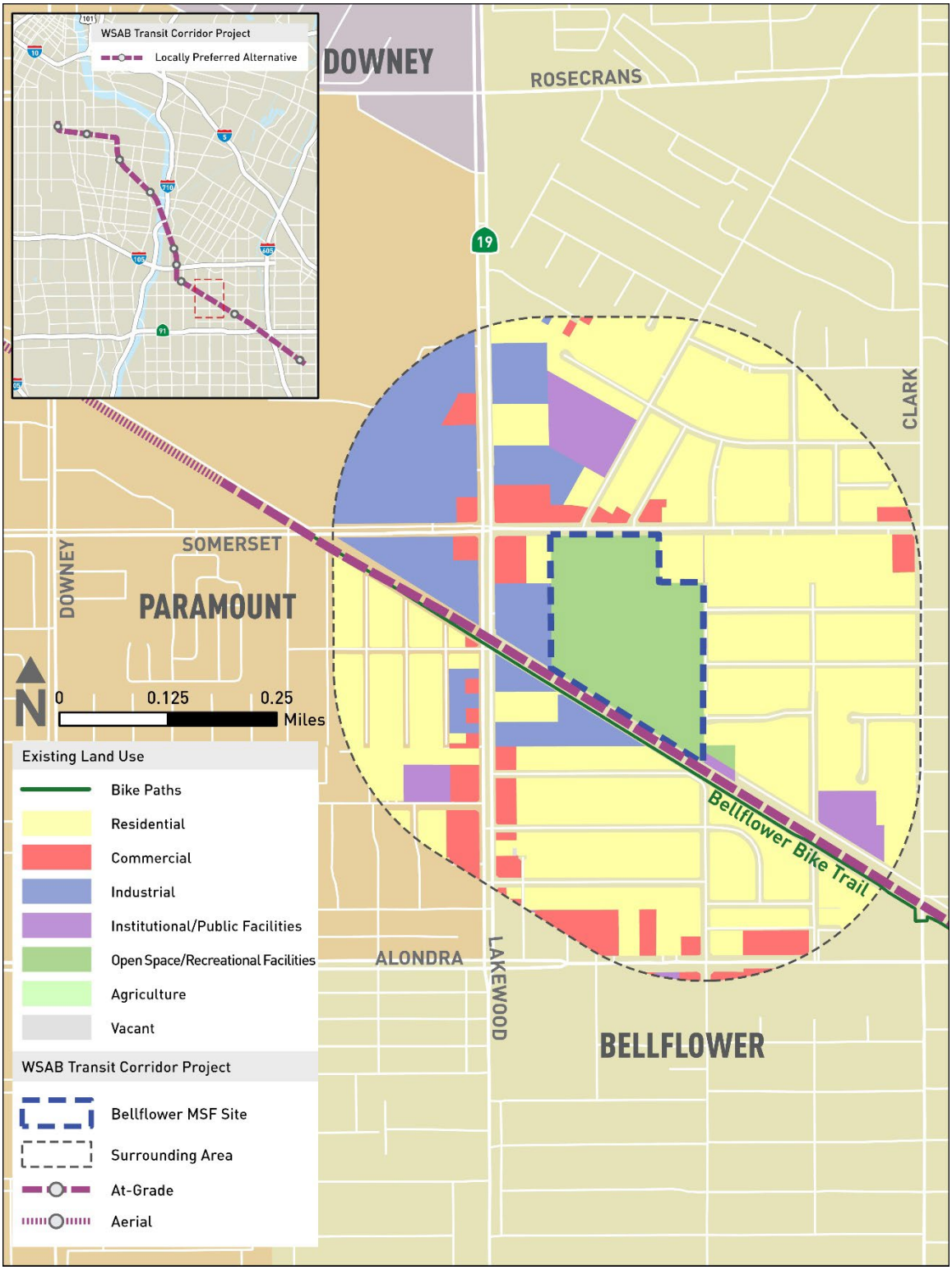
Figure 4.1-5 shows the existing land uses within 0.25 mile of the MSF, and Table 4.1.3 identifies land uses adjacent to the MSF. Surrounding land uses generally include residential, commercial, industrial, institutional/public facilities (i.e., places of worship, schools), and open space/recreational facilities (i.e., parks and recreational facilities).

Table 4.1.3. Land Use Distribution in the Affected Area and Surrounding Area of the MSF

Land Use	Percent of Land Use (%)[1]	
	Affected Area[2]	Surrounding Area[3]
Residential	44.3	67.9
Commercial	8.4	9.0
Industrial	42.2	18.2
Institutional/Public Facilities	2.2	4.8
Open Space/Recreational Facility[4]	2.8	0.2

Source: Metro 2024a
Notes: MSF = maintenance and storage facility
[1] Percent of land use may not equal 100 percent due to rounding.
[2] "Affected Area" is defined as the adjacent area within approximately 50 feet of the LPA.
[3] "Surrounding Area" is defined as the area within 0.25 mile of the alignment and 0.5 mile of the station areas.
[4] Percent does not include land use within MSF site boundary.

Figure 4.1-5. Existing Land Use within 0.25 Mile of the Maintenance and Storage Facility



Source: Metro 2024a

4.1.3 Environmental Consequences/Environmental Impacts

4.1.3.1 No Build Alternative

Under the No Build Alternative, the LPA would not be developed; properties would not be acquired for the LPA; and no structures along the alignment would be demolished. The existing freight tracks within the rail ROW would remain undisturbed, and no aerial structures would be built along the public or rail ROWs.

Land Use Compatibility

Other projects developed under the No Build Alternative would undergo project-specific environmental reviews, as appropriate, that would identify potential land use impacts and mitigation, as necessary. The projects would generally occur within existing transportation corridors on individual sites that are associated with transportation. The No Build Alternative is expected to be consistent with current development trends and would not be incompatible with adjacent and surrounding land uses. Under NEPA, the No Build Alternative would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Under the No Build Alternative, the LPA would not be constructed, thereby making the No Build Alternative inconsistent with SCAG's regional policies for improving mobility, as outlined in the SCAG 2016-2040 RTP/SCS. Specifically, the No Build Alternative would:

- Limit the opportunity to intensify land uses at potential station areas for the LPA, limit development of compact communities around a public transit system, and limit alternatives to automobile travel
- Not support opportunities to integrate transportation investments with future land use patterns, promote sustainability, provide more transportation choices, or reduce overall air quality emissions and traffic congestion
- Be inconsistent with policies for improving mobility, encouraging land use patterns that support transit use, and promoting sustainability
- Be inconsistent with the SCAG 2016-2040 RTP/SCS overarching strategy of growing more compact communities in existing urban areas with efficient public transit and safe mobility opportunities

Under the No Build Alternative, land use development around the LPA station areas would not occur because no new stations would be built. The No Build Alternative would be inconsistent with SCAG 2016-2040 RTP/SCS Policy 6 to support investments and strategies to reduce non-recurrent congestion and demand for single-occupancy vehicle use, and Policy 7 to encourage transportation investments that would result in cleaner air, a better environment, a more efficient transportation system, and sustainable outcomes over the long term. Under NEPA, the No Build Alternative would result in adverse effects related to consistency with regional land use plans for improving mobility.

Consistency with Local Land Use Plans, Policies, and Regulations

Under the No Build Alternative, future development and implementation of bicycle paths within the rail ROW would continue to occur in the affected jurisdictions. Ongoing and future transit- and transportation-related projects and programs will be located in the vicinity of the LPA that may complement the overall Metro transit network. Future bike paths identified along the alignment in the *City of Los Angeles 2010 Bicycle Master Plan* (City

of Los Angeles 2011), *City of Cudahy 2040 General Plan* (City of Cudahy 2018a), *City of Huntington Park Bicycle Transportation Master Plan* (City of Huntington Park 2014), *South Gate Bicycle Transportation Plan* (City of South Gate 2012), *City of Bell Bicycle Master Plan* (City of Bell 2016), and *Bellflower-Paramount Active Transportation Plan* (City of Bellflower and City of Paramount 2019) could be built and implemented within the rail ROW or public ROW that parallels the rail ROW. However, as identified in Table 4.1.4, the No Build Alternative would be inconsistent with the several local land use plans goals, objectives, and policies. The No Build Alterative would result in a continuation of current development patterns. Because the LPA would not be built, future planning of TODs surrounding the LPA station areas cannot occur. As a result, the No Build Alternative would not support local land use plans and policies for compact and denser development, including the development of TODs. Therefore, the No Build Alternative would be inconsistent with applicable local land use plans and policies. Under NEPA, the No Build Alternative would result in adverse effects related to consistency with local land use plans and policies.

Table 4.1.4. No Build Alternative Inconsistency with Local Land Use Plans and Policies

Policy Topic	Plans and Policies
Alternative modes of transportation	• *City of Los Angeles Southeast Los Angeles Community Plan* Objective 11-2 and Goal 13 • *Los Angeles County General Plan* Policy M4.1 • *City of Huntington Park General Plan* Goal 4.0 • *City of Cudahy 2040 General Plan Transportation Element* Policy CE-3.1 • *City of South Gate General Plan 2035 Community Design Element* Objective CD 3.1- Policy P.1, *Mobility Plan Element* Goal ME2, and *Healthy Community Element* Objective HC2.3-Policy P.1 • *Downey Vision 2025 Circulation Element* Goal 2.2, Policy 2.2.4, and Program 2.4.1.5 • *City of Paramount General Plan* Policies 6 and 9 • *City of Bellflower General Plan* Goal 4 • *Downtown Bellflower Transit-Oriented Development Specific Plan* Mobility Objective 2 and Policies 2.1 and 2.2 • *City of Cerritos General Plan Circulation Element* Goal CIR-8 • *City of Artesia General Plan Circulation and Mobility Sub-Element* Policy Action CIR4.2.4 and Community Goal CIR5; *Air Quality and Climate Change Sub-Element* Policy Action AQ2.1.1; and *Sustainability Element Community* Goal SUS5
Increased mobility, transit access, and transit services	• *City of Los Angeles Mobility Plan 2035* Policies 3.5 and 3.7 • *City of Los Angeles Southeast Los Angeles Community Plan* Goal 11 • *Los Angeles County General Plan* Policy M4.4 • *City of Vernon General Plan* Policy CI-1.6 • *City of Cudahy 2040 General Plan Transportation Element* Goal CE-2 • *City of South Gate General Plan 2035 Community Design Element* Objective CD1.2-Policy P.1, Objective ME2.2-Policies P.1 and P.2 • *City of South Gate Gateway District Specific Plan* Goal 2 • *City of South Gate Hollydale Village Specific Plan* Policy 6.2

Policy Topic	Plans and Policies
	• *City of Paramount General Plan* Policy 11 • *City of Bellflower General Plan* Goal 3 and Policy 3.1 • *Downtown Bellflower Transit-Oriented Development Specific Plan* Mobility Objective 1 and Policies 1.1, 1.2, 2.3, 2.4, 2.5 • *City of Cerritos General Plan Circulation Element* Policies CIR-6.6 and CIR-8.2 • *City of Artesia General Plan Circulation and Mobility Sub-Element* Policy CIR5.1 and Community Policy CIR6.2, *Air Quality and Climate Change Sub-Element* Policy Action AQ2.1.6, *Sustainability Element* Community Policy Action SUS5.1.7
Emissions reductions	• *City of Vernon General Plan* Policy R-2.2 • *City of Cudahy 2040 General Plan Air Quality Element* Goal AQE-2 • *City of South Gate General Plan 2035 Healthy Community Element* Objective HC7.2-Policies P.1 and P.8 • *City of Bellflower General Plan* Policy 4.1
Policies for compact and denser development, including TODs	• *City of Los Angeles General Plan* Objectives 3.13 and 3.15, Policy 3.15.3 • *Los Angeles County General Plan* Policies LU4.4 and M5.1, Goal M5 • *Florence-Firestone Community Plan* Goals R-2 and TD-3, Policies R-2.3 and TD-2.4 • *City of Los Angeles Land Use/Transportation Policy* • *City of Cudahy 2040 General Plan Air Quality Element* Policy AQE2.1 • *City of South Gate General Plan 2035 Community Design Element* Objective CD3.1- Policies P.2, P.4 and P.5 • *City of South Gate General Plan 2035 Healthy Community Element Objective* HC2.3-Policy P.4 • *Downtown Bellflower Transit-Oriented Development Specific Plan* Land Use Plan Objective 3, Policy 3.4 • *City of Artesia General Plan Air Quality and Climate Change Sub-Element* Policy Action AQ2.2.3

Source: Metro 2024a
Note: TODs = transit-oriented developments

4.1.3.2 Locally Preferred Alternative

Land Use Compatibility

Alignment: The LPA will be in a jacked box tunnel structure beneath the I-710, and either at-grade or on an aerial structure within the rail ROW in all other areas of the alignment. The Affected Area for land use is highly urbanized and developed. Land uses surrounding the alignment are urban and suburban in character with surrounding communities developed around the rail ROW. The alignment will not result in land use incompatibilities. Overall, the alignment will not conflict with or impede the use of the surrounding land uses, change the function of the public street and rail ROWs as transportation corridors, impede or change the function of the freight tracks and existing, active freight sidings that are used by nearby industrial uses, create new land use incompatibilities in the Affected Area for land use, or physically divide an established community. In addition, the alignment will be part of a regional transit system that will serve the residents, visitors, and employees of the surrounding community and cities.

Parking: Existing on-street and off-street parking will need to be removed in several areas along the rail ROWs. The locations are shown in Section 3.4.4.2 of Chapter 3, Transportation, of this Final EIS/EIR. The removal of on- street parking spaces may result in an increased demand for the remaining on-street parking that could affect parking in the surrounding streets. However, there is sufficient capacity on adjacent streets to accommodate the excess parking demand, and any circulation on local roads to find parking will be minimal. As discussed in Section 3.5.2.4 of Chapter 3, Transportation, of this Final EIS/EIR, Mitigation Measures TRA-19 (Parking Monitoring and Community Outreach) and TRA-20 (Parking Mitigation Program [Permanent]) will be implemented to reduce the effects from the loss of on-street parking spaces. The removal of off-street parking spaces will not cause the off-street parking supply to decrease below the respective city parking code requirements. The loss of parking is not anticipated to impair the function of the affected private properties, and access to the surrounding uses will remain. Changes to parking will be compatible with the surrounding land uses and consistent with local land use policies and applicable zoning code requirements. Additionally, the removal of parking within the rail ROW will not result in an incompatible land use as the rail ROW will continue to be used as a rail corridor. Furthermore, the LPA will improve overall transit connectivity by providing alternate means of access to communities surrounding the alignment.

Parking facilities at the Firestone, I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations will provide ingress and egress and pedestrian walkways connecting the parking facilities to the stations. The parking facilities will be generally located on sites with industrial, manufacturing, or commercial uses, with the exception of the Pioneer Station parking facility, which is currently developed with multifamily residential, industrial, and commercial uses. Nonetheless, the parking facilities will be generally compatible with the surrounding land uses. Therefore, no adverse effects regarding land use compatibility will occur.

Stations: At-grade stations (i.e., Pacific/Randolph, Florence/Salt Lake, Gardendale, I-105/C Line, Bellflower, and Pioneer) will include station entrances designed and integrated with the surrounding uses. Aerial stations (i.e., Slauson/A Line, Firestone, and Paramount/Rosecrans) will be situated on an aerial structure over the public and/or rail ROWs. The stations will not change or impair the function of the surrounding land uses, and access to the surrounding uses will be maintained. Similarly, with future development efforts at the adjacent Rancho Los Amigos site, the Gardendale Station could also lead to additional street-level pedestrian-oriented development that will add vibrancy to the area.

The stations are anticipated to become important junctions for residents, employees, and visitors from neighboring communities and the region promoting existing and planned future development with street-level pedestrian uses, as well as improved pedestrian access to surrounding uses. The station entrances are not expected to introduce physical barriers or change or impair the function of the surrounding uses; and access to the surrounding community will remain available. The stations will be designed and integrated with the surrounding uses and will be compatible with the surrounding land uses.

Freight Track Relocation: Implementation of the LPA will require the relocation of existing freight tracks south of Slauson Avenue and north of Somerset Boulevard. Relocation is required where the aerial structure curves from the La Habra Branch ROW to the San Pedro Subdivision ROW to accommodate the aerial structures. The LPA will also require the relocation of portions of the Union Pacific Railroad (UPRR)-operated freight tracks to accommodate for dual light rail transit (LRT) tracks. Although freight tracks will be relocated,

existing active track sidings and spurs, as well as active freight service, will be maintained within the rail ROWs and will not change the function of the rail ROW. The LPA will not impede or change the function of the freight tracks and freight sidings that are used by industrial uses adjacent to the rail ROWs. The aerial structures in and adjacent to the rail ROWs will be consistent with the use of the Wilmington Branch ROW, La Habra Branch ROW, San Pedro Subdivision ROW, and the Pacific Electric Right-of-Way (PEROW) as rail corridors. Therefore, no adverse effects regarding land use compatibility will occur.

Turning Restrictions/Street Closures: Vehicle-turning restrictions will be introduced on Randolph Street at Santa Fe Avenue, Pacific Boulevard, Miles Avenue, and State Street in the City of Huntington Park; along Gardendale Street in South Gate; at the intersection of Alondra Boulevard and Pacific Avenue and at the intersection of Clark Avenue and Flora Vista Street in the City of Bellflower; and on Pioneer Boulevard at the Little India Food Court driveway in the City of Artesia. The LPA will additionally result in turning restrictions for trucks at the following intersections along Randolph Street in the City of Huntington Park: Pacific Boulevard, Seville Avenue, and Miles Avenue. Truck turn restrictions will also be required at the following intersections along Salt Lake Avenue in the Cities of Huntington Park, Cudahy, and South Gate: at Otis Avenue, Santa Ana Street, and Ardine Street.

Street closures and/or modifications will be introduced at:

- Five existing at-grade crossings (i.e., Wilmington Avenue, Regent Street, Malabar Street, Rita Avenue, and Arbutus Avenue) will be closed in the City of Huntington Park.
- 188th Street between Corby Avenue and Pioneer Boulevard and 187th Street between Corby Avenue West and Corby Avenue East in the City of Artesia will be closed to accommodate a parking structure and to minimize at-grade crossings in the City of Artesia.
- Dakota Avenue in the City of South Gate will be modified to a one-way street.
- Flora Vista Street at Alondra Boulevard in the City of Bellflower will be modified to one-way street.

Vehicular, bicyclist, and pedestrian access to the surrounding uses will be maintained by re-routing traffic to adjacent streets, and permanent access disruptions to existing land uses will not occur. The turning restrictions and street closures will not conflict with the surrounding land uses, will not change or impair the function of the surrounding land uses, and will not physically divide an established community because the surrounding land uses will remain accessible.

Barriers: Physical barriers (e.g., fencing, retaining walls, soundwalls) will be located along sections of the alignment, along the rail ROWs, parallel to existing street ROWs, or along existing bike trails to create a buffer between the alignment and nearby uses. In locations where the alignment will be located along the rear of adjacent properties, existing barriers, such as fencing and walls, currently separate adjacent land uses from the alignment. Portions of the alignment will be built on retained fill with retaining walls or supported by columns that could create a barrier and separate land uses on both sides of the rail ROW.

Barriers introduced along the alignment will follow the Metro Rail Design Criteria (MRDC) guidance or equivalent criteria.[2] Access to surrounding uses will continue to be available at grade crossings, nearby intersections, and along alternative routes (i.e., between both sides of Randolph Street). Vehicular access to all properties will also be maintained and permanent disruptions to access will not occur, thereby maintaining connectivity through the community. Barriers and vehicle-turning restrictions will not change or impair the function of the surrounding land uses, conflict with the surrounding land uses, or physically divide an established community.

Freight Bridges: The existing freight bridge over the Los Angeles River and Rio Hondo River channels will remain and a new bridge for the LRT tracks will be built adjacent to the existing freight bridges at the two river channels. At the San Gabriel River channel, the existing bridge will be reconstructed for the LRT tracks. At the I-105 freeway, the existing freight bridge will be demolished and reconstructed and a new bridge for the LRT tracks will be built adjacent to the existing freight bridge. The new bridges for the LRT tracks and the reconstructed freight bridge will be located generally within the rail ROWs and will be consistent with the rail ROWs as transportation corridors. Although the reconstructed bridge at the San Gabriel River will remove the existing freight tracks and replace them with LRT tracks, this portion of the rail ROW does not have active freight service. The bridges will not change the function of the rail ROWs, will not conflict with the surrounding land uses, and will not physically divide an existing community.

Pedestrian Bridges: A new bridge for the LRT tracks will be constructed over I-105. The new LRT bridge will also provide pedestrian access between the I-105/C Line Station north of Century Boulevard, residences north and south of the I-105 freeway, and the new Metro C (Green) Line Station in the median of I-105. A pedestrian pathway immediately south of I-105 between the San Pedro Subdivision ROW and Arthur Avenue will also be provided.

Vertical circulation elements will be added to the Façade Avenue bridge to allow emergency access from the new I-105/C Line Station in the median of I-105 to Façade Avenue. The neighborhood north of the I-105 freeway will continue to use Façade Avenue to access the neighborhood south of the freeway.

The existing pedestrian bridge between the Paramount High School campuses in the City of Paramount will be demolished and reconstructed to maintain access between the campuses. Changes to the pedestrian bridges will not change or impair their function, conflict with the surrounding land uses, or physically divide an established community.

Property Acquisition: Partial and full property acquisitions of public facilities and residential, industrial, and commercial properties will be required to accommodate project components. The acquired properties will be immediately adjacent to the rail ROW and will not conflict with other uses in the surrounding area, physically divide an established community, and change or impair the function of surrounding industrial uses. Additional information on acquisitions is provided in Section 4.3, Acquisitions and Displacements.

[2] Flexibility for the development of other performance criteria, perhaps in support of a Public-Private Partnership procurement, is provided. The ultimate criteria used will achieve the same performance standards as those established in the Metro guidance.

To accommodate the freight tracks, the Paramount Bike Trail, and the LPA alignment, partial acquisition of the existing Los Angeles Department of Water and Power (LADWP) right-of-way in the City of Paramount north of Somerset Boulevard will be required. The LADWP right-of-way parallels the PEROW and contains transmission towers and the Paramount Bike Trail. The LADWP right-of-way southeast of Paramount Park is currently being used as a nursery, in addition to the transmission towers. The partial acquisition of the LADWP right-of-way will not interfere with the use of the transmission towers and transmission lines. Operation of the nursery on the remaining portions of the properties will be at the discretion of LADWP. As a result, the acquisition of these properties will not conflict with the current land uses on the site as current operations will be maintained. Additionally, partial acquisition of the LADWP properties will allow the Paramount Bike Trail to remain within the PEROW after relocation. Metro's role in the ownership of the acquired parcels will be limited to that of a property owner, and the parcels will be subject to the land use controls of the local jurisdictions. Local jurisdiction zoning codes, design guidelines, and entitlement processes are designed to maintain compatibility of land uses. As Metro will comply with local policies and regulations on the acquired properties, the property acquisitions will not conflict with other uses in the surrounding area, physically divide an established community, change or impair the function of surrounding uses, or create new land use incompatibilities.

TPSS Sites: TPSS sites will be located within or directly adjacent to the rail ROW or on sites currently developed with surface parking lots, commercial uses, industrial uses, nursery uses, or vacant lots, and will not be located on residential sites. In some locations, alternate sites are identified for the TPSSs. Where TPSS sites will be located outside rail ROW, partial or full acquisitions of the identified properties will be required for the finalized TPSS locations. The TPSS sites will be enclosed by a barrier and fully located on acquired properties or in the rail ROW. As such, the TPSS sites will not adversely affect circulation patterns; preclude access to, or affect continued use of, the remainder of the site (where partial acquisitions are identified); or affect access to adjacent properties. Metro will comply with local policies and regulations as applicable for TPSS sites outside of the rail ROW. Therefore, no adverse effects regarding land use compatibility will occur.

Bicycle Trails: The LPA will be adjacent to the Paramount Bike Trail, Bellflower Bike Trail, and Artesia Historic District Recreation Trails. These trails are located parallel along and/or partially within the PEROW. The Paramount Bike Trail segment between Somerset Boulevard and Lakewood Boulevard is located within the PEROW. The tracks for the LPA will be located within the southwest side of the PEROW along this segment requiring the realignment of this segment of the existing bike trail to the north side of the PEROW. The relocation of this segment of the Paramount Bike Trail will require users of the bike trail to cross the railroad tracks at Lakewood Boulevard to access the bike trail across the street. This segment of the existing bike trail is located at the end of the Paramount Bike Trail.

Additionally, the LPA will require realignment of the Bellflower Bike Trail segment east of Bellflower Boulevard on the north side of the PEROW and relocation of a bus stop to accommodate the Bellflower Station platform and tracks. Although segments of the bike trails will be realigned, the bike trail will remain within the PEROW and the function of the bike trail will be maintained. The bike trail and bus stop will continue to be available for use by the community. Nonetheless, implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) will be effective to demonstrate that modifications to the bicycle facilities will maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. The LPA will not require the realignment of the Artesia Historic District Recreation Trails. Changes to

the existing trails will not conflict with other uses in the surrounding area, physically divide an established community, change or impair the function of the existing bike trail or surrounding uses, or create new land use incompatibilities. Therefore, no adverse effects regarding land use compatibility will occur.

Summary: The LPA will not conflict with surrounding uses, change the function of the rail ROWs as rail corridors, impede or change the function of the freight tracks and freight sidings that are used by nearby industrial uses, or physically divide an established community. In addition, the LPA will serve the residents, visitors, and employees of the surrounding community and cities. Under NEPA, the LPA will not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

The LPA will provide jurisdictions with opportunities to develop compact communities around the public transit system; be an alternative to automobile travel; provide residents, visitors, and employees within the vicinity of the LPA another mode of transportation to access regional destinations and employment areas; and will reduce overall air quality emissions and traffic congestion. The LPA will be consistent with Metro's TOC Policy and will increase transportation ridership and choice; enhance communities surrounding transit; engage organizations, jurisdictions, and the public; and distribute transit benefits to all. The LPA will be consistent with SCAG 2016-2040 RTP/SCS Policy 1 as the LPA will provide reliable, fixed-guideway transit service that will increase mobility and connectivity for historically underserved, transit-dependent, and environmental justice communities. The LPA will support Policy 6 to encourage investments and strategies to reduce non-recurrent congestion and demand for single-occupancy vehicle use, and Policy 7 to encourage transportation investments that will result in cleaner air, a better environment, a more efficient transportation system, and sustainable outcomes over the long term. The LPA will also be consistent with the Connect SoCal (SCAG 2020-2045 RTP/SCS), which builds upon the 2016-2040 RTP/SCS and aims to increase the availability and use of public transit and to encourage housing and jobs near transit. In addition, Connect SoCal's guiding polices are substantially consistent with those of the 2016-2040 RTP/SCS, and the underlying principles are still relevant for the Project as a proposed regional transit system. The LPA will also be consistent with the Metro Active Rail to Rail/River Transportation Corridor Project, which includes two concepts for the Randolph corridor—an interim condition prior to construction of the LPA and a final condition once the LPA is implemented. Under NEPA, the LPA will not result in adverse effects related to consistency with regional land use plans for improving mobility.

Consistency with Local Land Use Plans, Policies, and Regulations

The LPA will be consistent with applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified in the general plans, community plans, specific plans, master plans, and bicycle master plans of the affected local jurisdictions. Several major transportation and alternative transportation plans and projects, including bicycle plans, regional transportation plans, and city-funded and Metro-funded TOD plans, are currently being studied in several jurisdictions.

The LPA will connect with local transit lines and bicycle facilities; integrate safety measures for transit users and bicyclists; and improve and provide greater transit opportunities to residents, visitors, and employees. By connecting with local transit lines and bicycle facilities, the LPA will increase the number and type of bicyclists, expand bicyclists' range and mobility

option, facilitate bicycle riding, and create a bicycle-friendly community. Additionally, the station areas will be designed to be pedestrian and bicycle friendly.

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail will not result in adverse physical effects or prevent access to existing bike facilities. Mitigation Measure LU-1 (Consistency with Bike Plans), described in Section 4.1.4, will be implemented to maintain connectivity. The LPA could preempt future development and implementation of the planned Class 1 bicycle path along Salt Lake Avenue and the Class I bicycle path north of Rayo Avenue and south of the Los Angeles River, identified in the City of Huntington Park Bicycle Transportation Master Plan, City of Cudahy 2040 General Plan, South Gate Bicycle Transportation Plan, and the City of Bell Bicycle Master Plan. While planned, the bike facilities are unfunded and not scheduled for implementation in local capital improvement budgets/programs. However, the LPA will result in an inconsistency with the current local plans and an adverse effect will occur.

Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Metro will continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. As part of this effort, Metro, as appropriate, will support preparation of amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Therefore, after mitigation, adverse effects related to consistency with local land use plans will remain.

4.1.3.3 Design Option—Close 186th Street

Land Use Compatibility

The design option to close 186th Street but introduce an at-grade crossing at 187th Street at the PEROW would not change or impair the function of the streets, PEROW, and surrounding uses. Similar to the LPA without the design option, the LPA with the design option would not divide an established community. The design option would not result in permanent access disruptions to existing land uses as access to the surrounding uses would continue to be available through routing of traffic to adjacent streets. Therefore, no adverse effects associated with land use compatibility would occur for the LPA with the design option.

Consistency with Regional Land Use Plans, Policies, and Regulations

The LPA with the design option would be consistent with applicable SCAG 2016-2040 RTP/SCS and Connect SoCal policies. The LPA with the design option would provide an alternative to automobile travel; provide residents, visitors, and employees within the vicinity of the Project access to regional destinations and employment areas; and would reduce overall air quality emissions and traffic congestion. Therefore, no adverse effects would occur.

Consistency with Local Land Use Plans, Policies, and Regulations

The LPA with the design option would provide an alternative to automobile travel that reduces dependency on single-occupant vehicles. The design option would be consistent with the City of Artesia General Plan 2030. However, similar to the LPA without the design option, as described above, the LPA with the design option could preempt future development and implementation of other planned bike paths in cities along the LPA

alignment. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Metro would continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Therefore, after mitigation, adverse effects related to consistency with local land use plans would remain.

4.1.3.4 Maintenance and Storage Facility

Land Use Compatibility

The MSF site is city-owned, designated as Open Space by the City of Bellflower, and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX). The City of Bellflower has confirmed that the site currently operates as a commercial business, that the property is not designated as a significant park or recreation area, and is not designated as having an important role in meeting the park and recreation objectives of the city. Metro continues to undergo extensive coordination with the city, including after circulation of the Draft EIS/EIR. In a meeting in April 2022, the city confirmed that the parcels that will be acquired for the MSF are not a significant park or recreation area. Based on this coordination, it is anticipated that the city will amend the General Plan so that the MSF facility use will be consistent with an appropriate city land use designation. Therefore, the MSF will not result in adverse effects related to consistency with local land use plans, policies, and regulations.

The MSF site is bounded by Somerset Boulevard to the north and multifamily residential uses north of Somerset Boulevard, single-family residential uses to the east, a dog park at the southeastern corner, the San Pedro Subdivision ROW and Bellflower Bike Trail to the south, and a mobile home community and industrial uses to the west.

Operation and design of the MSF, including the lead tracks, will follow MRDC guidance or equivalent criteria. Driveway access to the MSF site will be signalized. All functions of the MSF will be located within the facility and will not involve any roadway/intersection closures or turning restrictions that would restrict access to residential neighborhoods. The existing walls and fencing along the perimeter of the MSF site are likely to remain. If these barriers are removed, other types of security barriers will be installed along the perimeter of the site following MRDC guidance or equivalent criteria and will not physically divide the surrounding community.

Metro will comply with local policies and regulations regarding off-site improvements. The MSF, including the lead tracks, will not conflict with the surrounding land uses; change or impair the function of the surrounding land uses; create any new land use incompatibilities in the surrounding area; or physically divide an established community.

The Bellflower Bike Trail segment from Lakewood Boulevard south to Clark Avenue is located within the PEROW and south of the MSF site. This segment of the PEROW may not have sufficient room to accommodate the MSF lead tracks and LRT tracks, as well as operate the Bellflower Bike Trail safely. This may require a realignment in this segment of the Bellflower Bike Trail to maintain connectivity with the Paramount Bike Trail west of Lakewood Boulevard and the other segments of the Bellflower Bike Trail. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) will be effective to demonstrate that modifications to the bicycle facilities will maintain continuity with other segments of the

Paramount Bike Trail and Bellflower Bike Trail. Thus, as all functions of the MSF will be located within the facility and the lead tracks will be located within the PEROW, the MSF will not conflict with and will not change or impair the function of the surrounding land uses. Similarly, the MSF will not create any new land use incompatibilities in the surrounding area or physically divide an established community. Under NEPA, the MSF will not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

The MSF will be an integral part of the infrastructure for the LPA and will support the maintenance, operations, and storage activities for the LRT system. Therefore, the MSF will support SCAG mobility goals by supporting the provision of a reliable, alternative mode of transportation to the region. As such, the MSF will support SCAG regional growth policies. Under NEPA, the MSF will not result in adverse effects related to consistency with regional land use plans.

Consistency with Local Land Use Plans, Policies, and Regulations

The MSF is part of the infrastructure for the LPA and will support the LRT system and be consistent with applicable goals and policies of the City of Bellflower General Plan (City of Bellflower 1994). The site is city-owned, designated as Open Space, and is currently leased by the city to a private party for use as a recreational commercial business. The City of Bellflower has confirmed that the site currently operates as a commercial business, is not designated as a significant park or recreation area, and is not designated as having an important role in meeting the park and recreation objectives of the city. Metro is coordinating with the city to develop an MSF on this site. Based on this coordination, it is anticipated that the city will amend the General Plan so that the MSF facility use will be consistent with an appropriate city land use designation. Under NEPA, the MSF will not result in adverse effects related to consistency with local land use plans, policies, and regulations.

The MSF will be located adjacent to the Paramount Bike Trail and Bellflower Bike Trail and partially within the PEROW. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), connectivity with the bike trails will be maintained, changes to the Paramount Bike Trail and Bellflower Bike Trail will not physically divide the community, will not affect the character of the existing bike trails, and will not result in inconsistencies with the *Bellflower-Paramount Active Transportation Plan*. Therefore, no adverse effect will occur.

4.1.3.5 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three USACE facilities: the Los Angeles River just west of I-710, the Rio Hondo channel just east of I-710, and the San Gabriel River channel just west of I-605. All three river channels are concrete-lined and are operated and maintained by LA County. Land uses and communities surrounding the LPA alignment have been developed around the rail ROWs and the USACE facilities. The bridge structures over the USACE facilities will be part of a transit system to serve the residents, visitors, and employees of the surrounding community and cities. The LPA will be generally compatible with the USACE facilities as infrastructure uses and will be consistent with regional and local land use plans, policies, and regulations. Therefore, no adverse effects will occur during operation of the LPA at the USACE facilities related to land use compatibility or consistency with regional or local land use plans, policies, and regulations.

4.1.4 Project Measures and Mitigation Measures

4.1.4.1 Project Measures

There are no project measures required by law or permit related to land use.

4.1.4.2 Mitigation Measures

The following mitigation measure will be implemented for the LPA to minimize adverse effects related to inconsistency with the *City of Huntington Park Bicycle Transportation Master Plan* (City of Huntington Park 2014), City of Bell *Bicycle Master Plan* (City of Bell 2016), *Cudahy 2040 General Plan* (City of Cudahy 2018), and *City of South Gate Bicycle Transportation Plan* (City of South Gate 2012).

LU-1: **Consistency with Bike Plans.** During the planning process and prior to construction, Metro will prepare amended language for each affected bicycle plan demonstrating that existing, planned, and modified bicycle facilities will be connected during project operation. This language will be subject to the approval of the Cities of Huntington Park, South Gate, Bell, Paramount, and Bellflower, as applicable. Metro will modify the following bike trail segments into a Class II bikeway:

- Within the San Pedro Subdivision Right-of-Way between Ardmore Avenue to Century Boulevard (City of South Gate)
- Along Salt Lake Avenue from Gage Avenue to Florence Avenue (City of Bell)

Metro will relocate the following bike trail segments:

- Paramount Bike Trail segments from Paramount Boulevard to Somerset Boulevard within the Metro-owned Pacific Electric Right-of-Way (PEROW) (City of Paramount)
- Bellflower Bike and Trail segment from Lakewood Boulevard to the maximum extent of Clark Avenue within the Metro-owned PEROW (City of Paramount and City of Bellflower)

Mitigation Measure TRA-19 (Parking Monitoring and Community Outreach) (see Section 3.5.2 of Chapter 3, Transportation).

Mitigation Measure TRA-20 (Parking Mitigation Program [Permanent]) (see Section 3.5.2 of Chapter 3, Transportation).

4.1.5 California Environmental Quality Act Determination

4.1.5.1 Threshold LU-1: Would the Project physically divide an established community?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and the existing land uses would remain unchanged; no properties would be acquired for the LPA; no structures along the LPA alignment would be demolished; and no new structures would be constructed that could divide an established community. The existing freight tracks within the rail ROWs would remain undisturbed, and no aerial structures would be built along the public or rail ROWs. Bike paths proposed within or along the rail ROW could be built and implemented within the rail ROW or along the public ROW that parallels the rail ROW. These bike paths would enhance the existing active transportation corridors for the cities and would not physically

divide a community. Therefore, the No Project Alternative would not physically divide an established community; no impacts would occur; and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA could divide an established community if physical barriers are introduced that will affect access between existing communities and neighborhoods in the Affected Area for land use. Additional information regarding this topic is described in Section 4.2.3.2, Communities and Neighborhoods. Generally, existing development has been built around the rail ROW, which physically separates the neighborhoods and communities within the Affected Area for land use. The LPA will introduce safety barriers along the alignment and stations to hinder illegal crossing of the rail tracks. In addition, pursuant to Mitigation Measures NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls) (described in 4.7.4.2 [Noise and Vibration]), the LPA will include soundwalls along portions of the alignment to reduce noise associated with light rail vehicles and the relocated freight tracks at nearby sensitive receptors. These safety barriers and soundwalls are not expected to physically divide an established community because safe access and crossings throughout the community will be maintained at intersections and via crosswalks.

The LPA will introduce street closures and/or modifications, vehicle-turning restrictions, and truck turn restrictions at the locations detailed in Section 4.1.3.2. Vehicular, bicyclist, and pedestrian access to the surrounding uses will be maintained by re-routing traffic to adjacent streets, and permanent access disruptions to existing land uses will not occur. The turning restrictions and street closures will not conflict with the surrounding land uses, will not change or impair the function of the surrounding land uses, and will not physically divide an established community because the surrounding land uses will remain accessible.

The pedestrian bridge between the Paramount High School campuses will be demolished and reconstructed to maintain similar or improved pedestrian access. Parking facilities will operate entirely on-site and will not physically divide the surrounding community.

The LPA is not expected to introduce physical barriers or generate permanent access disruptions to existing land uses on either side of the alignment, and access to the surrounding community will remain available. Therefore, the LPA will not divide an established community, impacts will be less than significant, and mitigation will not be required.

Design Option—Close 186th Street

The design option to close 186th Street but introduce an at-grade crossing at 187th Street would not result in permanent access disruptions to existing land uses as access to the surrounding uses would continue to be available through routing of traffic to adjacent streets. Consistent with the LPA without the design option, the LPA with the design option would not divide an established community, and impacts would be less than significant.

Maintenance and Storage Facility

The MSF, including the lead tracks, will be designed following MRDC guidance or equivalent criteria. Fencing and/or walls will be placed around the perimeter of the MSF site, and MSF activities will operate entirely on-site. The MSF, including the lead tracks, will not involve roadway/intersection closures or turning restrictions that will restrict access to residential neighborhoods or community assets. The lead tracks for the MSF will be constructed within

the PEROW and will not divide the Bellflower Bike Trail. The MSF will not introduce any safety barriers that will physically divide an established community, and components associated with the MSF will not result in permanent access disruptions to the surrounding land uses. Therefore, the MSF will not physically divide an established community; impacts will be less than significant; and mitigation will not be required.

4.1.5.2 Threshold LU-2: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Project Alternative

The No Project Alternative would result in a continuation of current land use development patterns and trends that are not expected to change. Land uses in the Affected Area for land use would remain similar to existing conditions. The No Project Alternative would be inconsistent with SCAG 2016-2040 RTP/SCS Policy 6 to support investments and strategies to reduce non-recurrent congestion and demand for single-occupancy vehicle use, and Policy 7 to encourage transportation investments that would result in cleaner air, a better environment, a more efficient transportation system, and sustainable outcomes in the long run.

Additionally, the No Project Alternative would be inconsistent with applicable local land use plans goals, objectives, and policies with regard to alternative modes of transportation; increased mobility, transit access, and transit services; emissions reductions; and compact and denser development. The No Project Alternative would not support local land use plans and policies for compact and denser development, including the development of TODs; would limit the opportunity to intensify land uses at potential project station areas and throughout the corridor, limit jurisdictions from developing compact communities around a public transit system, and limit alternatives to automobile travel.

Several of the applicable regional and local land use plans, goals, objectives, and policies with which the No Project Alternative would be inconsistent are intended to avoid or mitigate environmental effects. However, planned bike paths within or along the rail ROW identified in the *City of Los Angeles 2010 Bicycle Master Plan*, *City of Cudahy 2040 General Plan*, *City of Huntington Park Bicycle Transportation Master Plan*, *South Gate Bicycle Transportation Plan*, *City of Bell Bicycle Master Plan*, and *Bellflower-Paramount Active Transportation Plan* could be built and implemented. As the No Project Alternative would be inconsistent with applicable regional and local land use plans, goals, objectives, and policies that are intended to avoid or mitigate environmental effects, significant and unavoidable impacts would occur.

Locally Preferred Alternative

The LPA will be generally consistent with the applicable land use plans, goals, objectives, and policies of regional agencies and local jurisdictions. The LPA will provide an alternative mode of transportation to the automobile; provide regional transit services to the Affected Area for land use; improve and provide greater transit opportunities to residents, visitors, and employees in the Affected Area for land use; construct transit stations that are pedestrian and bicycle friendly; and integrate safety measures for transit users and bicyclists.

However, the LPA could preempt future development and implementation of planned bike paths identified for the Cites of Cudahy, Huntington Park, South Gate, and Bell, as there will be inadequate space to accommodate the planned bicycle paths, project tracks, and relocated freight tracks. The LPA will also require the realignment of existing segments of the

Paramount Bike Trail and Bellflower Bike Trail. The preempted planned bike paths and potential impacts are detailed in Section 4.1.3.2. Converting the planned Class I bicycle paths into Class II or Class III bicycle paths is feasible and will maintain the connectivity identified in the bicycle master plans. However, the reclassification of the bike paths is considered an inconsistency with the current bike plans and a significant impact will occur.

Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Metro will continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. As part of this effort, Metro, as appropriate, will prepare and support adoption of amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination and with the implementation of mitigation, the LPA may still preempt future development and the implementation of the planned bike paths. Therefore, even with implementation of mitigation, the LPA will result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation: Significant and unavoidable impact.

Design Options—Close 186th Street

The LPA with the design option would provide an alternative to automobile travel that reduces dependency on single-occupant vehicles; provide residents, visitors, and employees within the vicinity of the Project access to regional destinations and employment areas; and would reduce overall air quality emissions and traffic congestion. The design option would be consistent with the SCAG 2016-2040 RTP/SCS and the *City of Artesia General Plan 2030*. However, similar to the LPA without the design option, as described above, the LPA with the design option could preempt future development and implementation of other planned bike paths in cities along the LPA alignment. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Metro would continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination and with implementation of mitigation, the LPA with the design option may still preempt future development and the implementation of the planned bike paths. Therefore, even with implementation of mitigation, the LPA with the design option would result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation: Significant and unavoidable impact.

Maintenance and Storage Facility

The MSF will be consistent with the SCAG 2016-2040 RTP/SCS and the overall goals and policies of the *City of Bellflower General Plan: 1995-2010* (City of Bellflower 1994). The MSF will be part of the infrastructure for the LPA and will support the maintenance, operations, and storage activities for the LRT. The MSF will improve the regional transportation system

and support SCAG mobility goals by providing a reliable, alternative mode of transportation to the region. The MSF will also support the expansion, availability, and use of public transportation in the cities and neighboring cities through which the alignment will traverse.

The site is city-owned, designated as Open Space, and is currently leased by the city to a private party for use as a recreational commercial business. The City of Bellflower has confirmed that the site currently operates as a commercial business, is not designated as a significant park or recreation area, and is not designated as having an important role in meeting the park and recreation objectives of the city. Metro is coordinating with the City of Bellflower to develop an MSF on this site. Based on this coordination, it is anticipated that the city will amend the General Plan so that the MSF facility use will be consistent with an appropriate city land use designation.

Section 4.1.3.4 discusses the realignment of the segment of the Bellflower Bike Trail located within the PEROW. The MSF will be located adjacent to the Paramount Bike Trail and Bellflower Bike Trail and partially within the PEROW. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), connectivity with the bike trails will be maintained and changes to the Paramount Bike Trail and Bellflower Bike Trail will not physically divide the community, will not affect the character of the existing bike trails, and will not result in inconsistencies with the *Bellflower-Paramount Active Transportation Plan*. Therefore, with implementation of mitigation, impacts for the MSF as it relates to the land use of the site will be less than significant.

Mitigation Measures: Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation: Less than significant impact.

4.2 Communities and Neighborhoods

This section summarizes the potential adverse effects and impacts from the No Build Alternative, LPA, design option, and MSF site as they relate to communities and neighborhoods. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Communities and Neighborhoods Impact Analysis Report* (Metro 2024n). Discussion of CEQA thresholds related to physically dividing an established community is provided in Section 4.1, Land Use, of this Final EIS/EIR.

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. This section reflects the Final EIS/EIR impact analysis updates for transportation (access and mobility analysis); land use; acquisitions and displacements; visual quality and aesthetics; and noise (community character and cohesion and community stability). Refer to Chapter 3 (Transportation) and Sections 4.1 (Land Use), 4.3 (Visual and Aesthetics), and 4.7 (Noise and Vibration), for additional information on updates specific to those topics.

Specifically, the access and mobility analysis has been updated to include refinements to at-grade crossings, street closures/modifications, and turning restrictions. The Draft EIS/EIR categorized grade crossing closures along Randolph Street as turning restrictions. Grade crossing closures along Randolph Street have been modified to be reflected as street closures for this Final EIS/EIR. The analysis of community character and cohesion has been revised to include updates related to adverse noise effects within residential areas, including refined design of soundwalls at at-grade crossings and taller soundwall heights at locations along the LPA. The updated

community character and cohesion analysis also incorporates the addition of Project Measure VA PM-8 (Residential Screening for Aerial Structures), described in Section 4.4.4.1. The analysis has also been updated to reflect that the pedestrian bridge connecting the campuses of Paramount High School will be replaced with a new pedestrian bridge rather than an undercrossing as proposed in the Draft EIS/EIR, and to include the Rancho Los Amigos Sports Center in the City of Downey and the Artesia Historic District Recreation Trails in the City of Artesia as community assets.

The design option to close 186th Street would not result in adverse effects related to access and mobility, community character and cohesion, and community stability. The community and neighborhoods analysis for the MSF remains unchanged from what was analyzed in the Draft EIS/EIR.

The LPA will not result in adverse effects related to community and neighborhoods. Communities and Neighborhoods impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

4.2.1 Regulatory Setting and Methodology

4.2.1.1 Regulatory Setting

No federal and state plans, policies, or regulations are applicable regarding communities and neighborhoods.

Regional

Regional plans and policies related to community and neighborhoods include the SCAG 2016-2040 RTP/SCS, which identifies priorities for transportation planning within the SCAG region, sets goals and policies, and identifies performance measures for transportation improvements for future projects with other planning goals for the area. The SCAG 2016-2040 RTP/SCS goals focus on communities and neighborhoods and include the following: (1) align the plan investments and policies with improving regional economic development and competitiveness, and (2) encourage land use and growth patterns that facilitate transit and active transportation.

Local

The local regulations and plans reviewed for policies related to community and neighborhoods are the same as listed for land use (see Section 4.1.1).

4.2.1.2 Methodology

For purposes of the community and neighborhood analysis, the Affected Area for communities is defined as those areas located 0.25 mile on each side of the alignment, parking facilities, and MSF, and 0.5 mile around the stations as these areas have been identified to be the area of potential impact. Population, household, employment, and other demographic data (e.g., ethnicity, age, and languages spoken at home) is from the U.S. Census Bureau and the 2015 American Community Survey (ACS) 5-Year Estimates (U.S. Census Bureau 2016).

Potential effects on communities and neighborhoods considers potential physical, social, or psychological barriers within an established community or neighborhood. Three primary components that affect communities and neighborhoods are addressed in this analysis: access and mobility, community character and cohesion, and community stability.

Access and mobility are generally affected by the following elements: provision of parking, at-grade crossings, turning restrictions, street closures, and vehicle delay at intersections. The provision of sidewalks, underpasses and overpasses, safety barriers, and walls could also affect access and mobility of a community.

Community character and cohesion are generally affected by the following elements: access to community facilities; displacement of residences, community assets, and commercial businesses; changes in noise levels; changes in visual character; changes to the types of land uses in an affected area; and demographic changes.

Community stability can be determined by how long residents have lived at their current addresses. Communities or neighborhoods that generally experience frequent turnover are expected to be less cohesive than those that experience long-term residency. A large proportion of individuals remaining in the same house for a long period of time can indicate a strong cohesive community.

Adverse effects to access and mobility would occur if parking facilities, at-grade crossings, turning restrictions, street closures, vehicle delays, safety barriers, and soundwalls would impede access and mobility in the affected communities. The provision of pedestrian facilities, such as sidewalks, were also considered when determining the effect of the LPA on access and mobility. Adverse effects on community stability would occur if the LPA would cause residents to move out of the affected communities.

To comply with NEPA, an adverse effect on community character and cohesion would occur if the Project results in the following:

- Displace residences or community assets that would result in the isolation of a residential neighborhood or community assets from its community
- Alter the physical layout of a community
- Change surrounding visual character and noise levels in a manner that would alter the character of the affected community
- Change land uses that would be inconsistent with the goals, policies, and objectives of the affected communities' plans
- Alter the demographics of the affected communities

This analysis relies on the analysis of other environmental topics, including Transportation (Chapter 3), Land Use (Section 4.1), Acquisitions and Displacements (Section 4.3), Visual and Aesthetics (Section 4.4), Noise (Section 4.7), and Parklands and Community Facilities (Section 4.16).

To satisfy CEQA requirements, impacts on communities and neighborhoods were analyzed in the context of population and housing in accordance with *CEQA Guidelines*. The Appendix G thresholds are identified in Section 4.2.5. *CEQA Guidelines* thresholds related to community and neighborhoods are also analyzed in Section 4.1.5 of the Land Use section and 4.3.5 of the Acquisitions and Displacements section.

4.2.2 Affected Environment/Existing Conditions

A community is defined in part by behavior patterns that individuals or groups of individuals hold in common (e.g., daily social interactions, use of local facilities, participation in local organizations, and involvement in activities that satisfy the population's economic and social needs) and shared perceptions or attitudes. Communities are generally grouped by geographical areas. A community asset is generally a facility that can be used to improve the quality of or

characterize a community and can include community facilities and other types of facilities that characterize or support a community (i.e., medical centers, museums, and historic resources). Community stability can be determined by how long the residents have lived at their current addresses. The strength or cohesion of a community or neighborhood to successfully adapt to change is a function of the homogeneity of the population and its diversity, similarities in income, and shared cultural or ethnic backgrounds (Local Government Association 2004).

4.2.2.1 Affected Area Communities and Neighborhoods

The Affected Area for communities includes the following established communities[3] in which the alignment will traverse through or be adjacent to, as illustrated in Figure 4.2-1. Figure 4.1-1 through Figure 4.1-5 in Section 4.1.2.1 also show the distribution of land uses for each community, which includes the City of Los Angeles (including the Southeast Los Angeles Community Plan Area), the unincorporated Florence-Firestone community of LA County, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos.

[3] For purposes of this analysis, the Southeast Los Angeles Community Plan Areas (CPA) in the City of Los Angeles and the unincorporated Florence-Firestone community of LA County are considered established communities within the Affected Area. CPAs are specific to the City of Los Angeles and establish neighborhood-specific goals and implementation strategies to achieve the broad objectives laid out in the city's General Plan. All other jurisdictions within the Affected Area (Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos) are considered an established community unless there are specific subareas of concern.

Figure 4.2-1. Communities along the LPA Alignment

Source: Metro 2024n

4.2.2.2 Demographic and Socioeconomic Characteristics of the Affected Area

Population, Housing, and Employment

Table 4.2.1 and Table 4.2.2 present the projected increase from existing 2017 conditions to the 2042 horizon year in population, housing, and employment for the LPA and station areas, respectively. The growth for Los Angeles County is also included in both tables for comparison purposes. Communities within the Affected Area for communities vary in terms of population density, and areas with a higher population density generally demonstrate a need for expanded transit service.

Table 4.2.1. Projected Growth in Population, Housing, and Employment for the Locally Preferred Alternative (2017-2042)

Build Alternative	Population	Housing	Employment
Los Angeles County	12.0%	12.0%	17.0%
Locally Preferred Alternative	59.2%	62.0%	22.4%

Source: Metro 2024n

Table 4.2.2. Projected Growth in Population, Housing, and Employment by Station Area (2017-2042)

Station Area	Population	Housing	Employment
Slauson/A Line Station	52.1%	56.7%	54.5%
Pacific/Randolph Station	19.1%	21.4%	16.8%
Florence/Salt Lake Station	19.9%	22.4%	22.4%
Firestone Station	72.2%	74.8%	10.7%
Gardendale Station	78.9%	93.3%	10.9%
I-105/C Line Station	25.4%	37.1%	33.9%
Paramount/Rosecrans Station	21.6%	33.7%	41.1%
Bellflower Station	40.6%	38.6%	17.5%
Pioneer Station	109.2%	106.0%	22.1%

Source: Metro 2024n

Residential Stability

An indicator of the stability of a community or neighborhood can be determined by how long the residents have lived at their current addresses. Communities or neighborhoods that generally experience frequent turnover of residents would be expected to be less cohesive than those whose population resides in the same location long term. Low neighborhood stability may be a result of several factors, such as neighborhood dynamics, housing conditions, and metropolitan and housing market trends (Urban Institute 2018). The best available data to determine residential stability is the U.S. Census Bureau 2015 ACS data for "Residents in Same House After 1 Year." Based on this data, overall neighborhood stability in the Affected Area for communities is high and exceeds the LA County average of the percentage residents in the same residence after one year (87.2 percent), with the exception of Artesia (86.1 percent).

Age, Race and Ethnicity, and Languages Spoken at Home

Age is an important neighborhood characteristic as age patterns affect labor force participation, mobility, shopping patterns, and home purchases. As such, areas with large elderly or young populations tend to require different types of services than those areas with a high population of working-age people. Communities with the largest population under the age of 18 include Southeast Los Angeles (33.8 percent), Cudahy (32.6 percent), and Florence-Firestone (32.5 percent). Communities with the highest percentage of residents 65 years and older include Cerritos (20.2 percent) and Vernon (19.5 percent). Cudahy represents a younger population with a median age of 27.0 years, and Vernon represents an older population with a median age of 51.3 years.[4]

The Affected Area for communities includes several different ethnic and racial groups, which also define a community. All communities in the Affected Area for communities have a minority population over 50 percent. Communities with the largest number of Hispanic/Latino residents include Huntington Park (97.0 percent), Florence-Firestone (95.8 percent), and Bell (95.3 percent). Cerritos (49.7 percent) and Artesia (45.2 percent) have the largest number of Asian residents. Bellflower (12.8 percent) has the highest percentage of Black/African American residents.

The language chosen to be spoken at home can characterize a community through racial and ethnic identity. The largest percentage of residents speaking Spanish at home are in Huntington Park (93.6 percent), Cudahy (92.5 percent), and South Gate (89.0 percent). The largest percentage of residents speaking an Asian/Pacific Island language are in Cerritos (41.8 percent).

4.2.3 Environmental Consequences/Environmental Impacts

4.2.3.1 No Build Alternative

The transportation projects under the No Build Alterative would help improve mobility and access for residents within existing communities in the Affected Area for communities. Additionally, the projects under the No Build Alternative are not expected to alter the character and identity of the Affected Area for communities, but the projects would be subject to separate environmental review as required by federal and state law. The regional and local projects associated with the No Build Alternative would not introduce new barriers that would divide communities and are not anticipated to displace or disrupt existing residences within the Affected Area for communities since these projects would occur within existing transportation corridors. Under the No Build Alternative, the LPA would not be developed. Under NEPA, the No Build Alternative would not adversely affect community access, mobility, community character, and cohesion but would adversely affect the stability of the communities within the Affected Area for communities.

[4] Land uses in the Vernon community within the Affected Area of communities consist primarily of industrial uses; no residential uses are located along the alignment. Vernon is an exclusively industrial community with a few scattered commercial businesses. A small residential neighborhood is located near the Vernon Avenue/Santa Fe Avenue intersection, toward the center of the community and surrounding city hall.

4.2.3.2 Locally Preferred Alternative

Access and Mobility

Table 4.2.3 summarizes the LPA components that have the potential to affect community access and mobility within the Affected Area for communities, including the provision of parking, at-grade crossings, turning restrictions, street closures, and vehicle delay at intersections. The potential for the sidewalks, pedestrian underpasses, safety barriers, and soundwalls to affect access and mobility are discussed below. Additional details regarding access and mobility are provided in Chapter 3, Transportation, of this Final EIS/EIR.

Parking: The LPA will provide an alternative mode of transportation with improved access and mobility in which pedestrian activities surrounding the stations could increase. Parking facilities are proposed in South Gate, Paramount, Bellflower, and Artesia. Although no parking facilities are proposed in Cerritos, the parking facility at Pioneer Station will be adjacent to this community. These parking facilities will provide better access to the transit line for residents that live farther from the stations. The parking facility at the I-105/C Line Station in South Gate will further improve access to the regional transportation system as residents in the surrounding area will have access to both the LPA and the Metro C (Green) Line because the LPA includes a new infill Metro C (Green) Line Station platform within the median of the I-105 freeway. While some of the parking facilities are located adjacent to residential neighborhoods, none of the facilities will impede access and mobility of motorists, pedestrians, and bicyclists to residential neighborhoods and community assets. Rather, regional and local access to and from these communities will increase.

Vehicle Delays at Intersections, Street Closures, and Turning Restrictions: The LPA will result in adverse effects at 12 intersections after mitigation. Vehicle-turning restrictions and street closures along Randolph Street were refined as a result of comments received on the Draft EIS/EIR and coordination with the City of Huntington Park. To minimize at-grade crossings and enhance safety along Randolph Street, the LPA will require street closures on Randolph Street at Wilmington Avenue, Regent Street, Rita Street, Malabar Street, and Arbutus Avenue in Huntington Park. This will prevent motorists from being able to cross Randolph Street at those locations. Vehicle-turning restrictions will also be introduced on Randolph Street at Santa Fe Avenue, Pacific Boulevard, Miles Avenue, and State Street. Access to the other side of the street will still be maintained through traffic routing via the surrounding local streets. Motorists will be required to proceed to the next cross street with an at-grade crossing (one to two blocks away) and make a U-turn to access the opposite side of the affected street or to cross the affected street. Alternate routes between both sides of the affected streets will be available, and vehicular access to all properties will be maintained. As a result, the turning restrictions will not interfere with vehicular access and mobility to community assets and residential neighborhoods. The LPA will additionally result in turning restrictions for trucks along Randolph Street at Pacific Boulevard, Seville Avenue, and Miles Avenue. Truck turn restrictions will also be required along Salt Lake Avenue in the Cities of Huntington Park, South Gate, and Cudahy at Otis Avenue, Santa Ana Street, and Ardine Street. Truck access to the surrounding uses will be maintained by re-routing traffic to the surrounding streets, and permanent access disruptions to existing land uses will not occur.

Table 4.2.3. Project Effects on Access and Mobility within Affected Area

Community	Station(s)	Parking Facility	Parking Facility Adjacent to Residential	Street Closures[1]	At-Grade Crossings	Intersections with Adverse Effects from the LPA[1]	Vehicle-Turning Restriction[2]	Access and Mobility Disrupted by Project?[3]
Southeast Los Angeles	Slauson/A Line	—	—	0	0	0	0	No
Florence-Firestone	Slauson/A Line	—	—	1[4]	0	0	0	No
Huntington Park	Pacific/Randolph Florence/Salt Lake	—	—	5[4]	12[5]	12[6]	4	No
Bell	—	—	—	0	3[7]	3[6]	0	No
Vernon	—	—	—	0	1[8]	0	0	No
Cudahy	—	—	—	0	3[9]	0	0	No
South Gate	Firestone	600 spaces	No	0	7[10]	0	1[13]	No
	I-105/C Line	340[11] spaces	Yes					
Downey	Gardendale	—	—	0	1[12]	0	1[13]	No
Paramount	I-105/C Line	—[14]	—	0	2[15]	0	0	No
	Paramount/Rosecrans	490 spaces	No					
Bellflower	Bellflower	260 spaces	Yes	0	4[16]	0	3	No
Cerritos	—	—	—	0	4[17]	0	0	No
Artesia	Pioneer	1,100 spaces	Yes	2	2[18]	0	1	No

Source: Metro 2024n

Notes:

[1] The Draft EIS/EIR categorized grade crossing closures along Randolph Street as turning restrictions. Grade crossing closures along Randolph Street are considered as street closures for this Final EIS/EIR. The LPA will require street closures on Randolph Street at Wilmington Avenue, Regent Street, Rita Street, Malabar Street, and Arbutus Avenue in Huntington Park.

[2] Truck turning restrictions are not included in this count. Truck turning restrictions will also be required in Huntington Park along Randolph Street at Pacific Boulevard, Seville Avenue, and Miles Avenue. Turning restrictions for trucks will also be required along Salt Lake Avenue at Otis Avenue (Huntington Park), Santa Ana Street (Huntington Park, South Gate, and Cudahy), and Ardine Street (Cudahy). See Appendix B for additional details.

[3] Metro 2024n

[4] One turning restriction is shared with Huntington Park.

[5] One at-grade crossing is shared with Vernon; three are shared with Bell; one is shared with Cudahy; and one is shared with Cudahy and South Gate. The at-grade crossings are located at the city boundaries of Huntington Park/Vernon, Huntington Park/Bell, Huntington Park/Cudahy, and Huntington Park/Cudahy/South Gate, respectively.

[6] Includes intersections Gage/California, Gage/Salt Lake (West), and Florence/Salt Lake Ave located at the city boundaries of Bell and Huntington Park.
[7] The two at-grade grade crossings are located at the Huntington Park/Bell city boundary.
[8] At-grade crossing is located at the Huntington Park/Vernon city boundary.
[9] One at-grade crossing is shared with Huntington Park and one is shared with Huntington Park and South Gate. The at-grade crossings are located at the city boundaries of Huntington Park/Cudahy and Huntington Park/Cudahy/South Gate. At-grade crossings include Otis Ave, Santa Ana St, and Ardine St.
[10] One at-grade crossing is shared with Huntington Park and Cudahy; one is shared with Cudahy; one is shared with Downey; and one is shared with Paramount. These at-grade crossings are located at the city boundaries of Huntington Park/Cudahy/South Gate, South Gate/Cudahy, South Gate/Downey, and South Gate/Paramount.
[11] Parking supply assumes TPSS site 07E is located within the parking lot. If TPSS 07 is selected instead, parking supply would increase to approximately 360 spaces.
[12] At-grade crossing is shared with South Gate. The at-grade crossing is located at the city boundary of South Gate/Downey.
[13] Turning restriction at Gardendale/Dakota is shared with South Gate.
[14]Parking lot for the I-105/C Line Station is in South Gate.
[15] One at-grade crossing is located at the South Gate/Paramount city boundary, and one is located at the Paramount/Bellflower city boundary.
[16] One at-grade crossing is located at the Bellflower/Paramount city boundary.
[17] Includes one at-grade crossing located on a private driveway of an industrial property. One crossing is located at the Artesia/Cerritos city boundary.
[18] One at-grade crossing is shared with Cerritos because the at-grade crossing is located at the Artesia/ Cerritos city boundary.
LPA = Locally Preferred Alternative

Bicyclists and pedestrians will no longer be able to cross Randolph Street at Malabar Street, Rita Street, and Arbutus Avenue because of closures of the at-grade crossings. Motorists, pedestrians, and bicyclists will be able to access the other side of Randolph Street using the next cross street with crosswalks, which are one to two blocks from the closed at-grade crossing. On Randolph Street at Santa Fe Avenue, Pacific Boulevard, Miles Avenue, and State Street, crosswalks and pedestrian crossing gates will be provided to allow bicyclists and pedestrians to safely cross the rail ROW to access the other side of the street. As a result, the LPA will not interfere with pedestrian and bicycle access and mobility to community assets and residential neighborhoods.

In the City of Bellflower, vehicle-turning restrictions will be introduced at the Clark Avenue/Flora Vista Street/Rendalia Street and Alondra Boulevard/Pacific Avenue intersections. To support access into a community, a southbound dedicated left-turn lane and signal will be added at Clark Avenue/Los Angeles Street. Dakota Avenue in the City of South Gate and Flora Vista Street at Alondra Boulevard in the City of Bellflower will be modified to one-way streets. Vehicular, bicyclist, and pedestrian access to the surrounding uses will be maintained by re-routing traffic to adjacent streets, and permanent access disruptions to existing land uses will not occur.

In the City of Artesia, 187th Street will be closed at the PEROW; 188th Street will be closed between Corby Avenue and Pioneer Boulevard; and vehicles leaving the Little India Food Court driveway will no longer be able to turn left (south) onto Pioneer Boulevard. Alternate routes will be available to motorists at 187th Street, 188th Street, and Pioneer Boulevard, and vehicular access to all properties will be maintained. At 187th Street and Pioneer Boulevard, pedestrian crossing gates will be provided at the PEROW and pedestrians and bicyclists will still be able to cross 187th Street and Pioneer Boulevard, thereby maintaining pedestrian and bicycle access to the surrounding neighborhood. Pedestrian and bicycle access to the Artesia Historic District Recreation Trails will also be maintained at 187th Street. At 188th Street, pedestrians and bicyclists will no longer be able to use the street to access Corby Avenue or Pioneer Boulevard. However, motorists, pedestrians, and bicyclists will be able to access Corby Avenue and Pioneer Boulevard using the next cross street. As a result, the LPA will not interfere with vehicular, pedestrian, and bicycle access and mobility to community assets and residential neighborhoods in the City of Artesia. Permanent access disruptions to existing land uses on both sides of the rail ROW will not occur along the alignment.

To minimize the potential for vehicles queuing onto at-grade crossings, Project Measure TR PM-1 (Pre-signals and Queue-cutter Signals), described in Section 3.5.1 of Chapter 3, Transportation, of this Final EIS/EIR, will be implemented. This measure includes installation of pre-signals and/or queue-cutter signals to enhance the safety and operations of traffic operations with the LPA. With these design features, the vehicles in the queue will be discouraged from stopping on the tracks, eliminating potential conflicts from queues on the LPA. Mitigation Measures TRA-1 through TRA-17, which are specific intersection modifications described in Section 3.5.2.1 of Chapter 3, Transportation, of this Final EIS/EIR, will be implemented; however, adverse impacts will remain for 12 intersections during one or both peak periods, even with implementation of these mitigation measures. Nonetheless, vehicle delays will be minimized with the project measures and mitigation measures, and access to community assets and residential neighborhoods will be maintained.

At-Grade Crossings: Nine new at-grade crossings are proposed from Somerset Boulevard in the City of Paramount to the southern terminus in the City of Artesia, and existing at-grade crossings (active and inactive) along the LPA will be improved. Freight does not operate

south of Somerset Boulevard. New at-grade train crossings will be introduced at nine locations: Somerset Boulevard, Lakewood Boulevard, Clark Avenue, Alondra Boulevard, Bellflower Boulevard, Artesia Boulevard, Studebaker Road, 186th Street, and Pioneer Boulevard. Depending on the location of the existing and new at-grade crossings, vehicle and pedestrian crossing gates, new or restriped pedestrian crosswalks, new traffic signals, and/or raised medians will be installed to increase safety and improve access and mobility at the at-grade crossings. Such safety measures are not considered community barriers but may create physical barriers along the alignment to prevent pedestrians from unsafely crossing at at-grade crossings when a train is approaching. These pedestrian safety measures and physical safety barriers will benefit the overall community where the changes occur, while existing at-grade crossings will continue to allow access throughout the affected communities. In addition, new pedestrian crosswalks will be installed on Salt Lake Avenue, on the south side of the Florence/Salt Lake Station, Century Boulevard, Pacific Avenue, on the west side of the Bellflower Station, and at the intersection of Bayou Avenue for the MSF access driveway. The effects of at-grade crossing closures and turning restrictions are discussed above under the heading "Vehicle Delays at Intersections, Street Closures, and Turning Restrictions."

Sidewalks, Safety Barriers, and Soundwalls: Other project components that may affect access and mobility include a new sidewalk, safety barriers, and soundwalls. A sidewalk on the south side of the I-105 freeway between the San Pedro Subdivision ROW and the Arthur Avenue pedestrian bridge will be added and will connect with the pedestrian pathway on the LRT bridge to allow residents southeast of the San Pedro Subdivision ROW in the Paramount community easier access to the new infill Metro C (Green) Line Station in the I-105 freeway median and the I-105/C Line Station for the LPA. The existing pedestrian bridge between the Paramount High School campuses in the City of Paramount will be demolished and reconstructed. Access to Paramount High School will be maintained.

The LPA will include installation of safety barriers, such as fencing along at-grade portions of the alignment that parallel street right-of-way. Additionally, soundwalls will be installed along at-grade segments of the LRT and/or freight alignment where noise impacts were identified (see Mitigation Measures NOI-1 [Soundwalls] and NOI-5 [Freight Track Relocation Soundwalls] in 4.7.4.2 [Noise and Vibration]). Safety barriers and soundwalls will prevent informal crossings of railroad tracks and will avoid potential conflicts between pedestrians and LRT vehicles. Residents within the Affected Area for communities will continue to use the existing grade crossings to access adjacent neighborhoods and nearby community facilities.

Summary: While street closures, turning restrictions, increased vehicle delays at intersections, and installation of safety barriers or soundwalls will occur under the LPA, the physical layout of the affected communities will remain similar to existing conditions, and the LPA will not impede community access and mobility. The LPA will shift some access and mobility patterns in the Affected Area for communities, resulting in different community access routes when compared to existing conditions. Access to the surrounding residential neighborhoods, businesses, and community assets will remain. Under NEPA, the LPA will not result in adverse effects related to community access and mobility.

Community Character and Cohesion

The LPA has the potential to affect community character and cohesion as it could increase noise levels, affect access to community facilities, permanently displace residences and community assets, alter visual character, change the types of land uses that could be built around stations,

and increase population surrounding the stations. Table 4.2.4 identifies and summarizes the effects of project-related changes in noise levels, changes in access to community facilities, acquisition and displacement, and changes in visual character on community character and cohesion within the Affected Area for communities. The potential for land use and demographic changes to affect community character and cohesion are discussed further below.

Noise: As presented in Table 4.2.4, the LPA will result in moderate or severe noise effects in several residential neighborhoods. Mitigation Measures NOI-1 through NOI-5, which include soundwalls, low impact frogs, wheel squeal noise monitoring, TPSS noise reduction, and soundwalls for freight track relocation (see Section 4.7.4.2 of the Noise and Vibration Section), will be implemented to reduce noise levels to the extent feasible; however, residual moderate or severe noise effects will still occur in some communities (refer to Figure 4.7-5 through Figure 4.7-12 in 4.7.4.2 for the locations of remaining moderate and severe noise impacts). However, based on the community stability of the affected communities and reductions to the noise levels, residual impacts are not anticipated to create a shift in the community that will result in an adverse effect to the cohesion of the community. The anticipated changes in noise levels for the LPA are not expected to adversely affect the character and cohesion of communities within the Affected Area for communities.

Acquisition and Displacement: The LPA will require permanent partial or full property acquisitions to accommodate grade separations, the LPA alignment, TPSSs, stations, and parking facilities. As summarized in Table 4.2.4, the LPA will require partial or full acquisition of several commercial and residential properties, as well as a partial acquisition on a corner of a school property. The acquisition of commercial and residential properties will result in the displacement of several businesses and residents. However, these acquisitions and displacements will not affect the overall function of community assets or adjacent and surrounding uses, and no community assets will be displaced. Residential neighborhoods and community assets will not be isolated, and residential neighborhoods and community assets will be maintained.

Table 4.2.4. Project Effects on Community Character and Cohesion

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
Southeast Los Angeles	**Unmitigated Impact** ▪ 55th St to 57th St **Residual Impacts with Mitigation** ▪ None	▪ No adverse effect; LPA alignment will be elevated.	**Residential Displacements** ▪ 1 single-family unit and 2 multifamily units (APNs 5105-013-014 and 5105-021-019) at the northeast corner of Long Beach Ave and E Slauson Ave to accommodate straddle bent for aerial structure. Displacement of 9 residents. **Business Displacements** ▪ 10 business displacements consisting of industrial, retail, and auto services. Displacement of 71 employees.	▪ No adverse effect; LPA components consistent with visual character of community.
Florence-Firestone	**Unmitigated Impact** ▪ East and west of Holmes Ave ▪ East of Converse Ave **Residual Impacts with Mitigation** ▪ East and west of Holmes Ave	▪ No adverse effect; LPA alignment will be elevated. ▪ The street closure/modification at the Wilmington Ave grade crossing will not adversely affect access to community facilities because vehicular, bicyclist, and pedestrian access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible.	▪ None	▪ No adverse effect; LPA components consistent with visual character of community.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
Huntington Park	**Unmitigated Impacts** ▪ Cottage Street to east of Bissell St ▪ Flower St to Santa Ana St ▪ East and West of Otis Ave **Residual Impacts With Mitigation** ▪ Cottage Street to Pacific Blvd ▪ Rita Ave to State St ▪ East and West of Otis Ave	▪ New safety barrier or soundwalls along rail ROW: Residents could no longer informally cross San Pedro Subdivision ROW at mid-block to access San Antonio Continuation School, San Antonio Elementary School, and Huntington Park High School. ▪ Vehicle-turning restrictions on Randolph St at Santa Fe Ave, Pacific Blvd, Miles Ave, and State St; truck turning restrictions on Randolph St at Pacific Blvd, Seville Ave, and Miles Ave, and on Salt Lake Ave at Otis Ave and Santa Ana St; and street closures/modifications at the Wilmington Ave, Regent St, Malabar St, Rita Ave, and Arbutus Ave grade crossings will not adversely affect access to community facilities because vehicular, bicyclist, and pedestrian access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible. ▪ Grade crossing modifications at Randolph St and Salt Lake Ave (street markings, pedestrian and vehicular crossing gates, and curb cuts) will provide safe access to schools and facilitate access to Salt Lake Park. ▪ Removal of 114 off-site parking spaces located within the San Pedro Subdivision ROW along the northbound side of Salt Lake Avenue	**Residential Displacements** ▪ 8 multifamily residential units (APN 6320-022-008) at the corner of Randolph Ave and Rita Ave for grade crossing modifications. Displacement of 31 residents. **Business Displacements** ▪ 10 business displacements consisting of hotel, retail, office, and food service. Displacement of 33 employees. ▪ At a commercial supplier at the northeast corner of Pacific Blvd/Randolph St, approximately 19 parking spaces will be affected due to implementation of Mitigation Measure TRA-12. ▪ At a strip mall north of the Randolph St and Rita Ave intersection, approximately 32 parking spaces will be affected due to installation of a TPSS. ▪ At the bowling alley at the northeast corner of the rail ROW and Gage Ave, approximately 3 parking spaces will be affected by grade crossing modifications. ▪ At a truck dealer at the northeast corner of Salt Lake Ave and Walnut St, approximately 22 parking spaces will be affected due to installation of a TPSS. ▪ At San Antonio Elementary School, a strip of landscaping will be affected by grade crossing modifications.	▪ No adverse effect; LPA components consistent with visual character of community.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
		between Bell Ave and Florence Ave used by Salt Lake Park visitors. Other on-site and off-site parking remains available. Salt Lake Park on-site parking lot along Salt Lake Ave has approximately 58 parking spots, and the 7 off-site parking spaces along the eastbound side of Salt Lake Avenue between Bell and Florence Avenues will not be affected.		
Bell	**Unmitigated Impacts** ▪ Gage Ave to Florence Ave **Residual Impacts With Mitigation** ▪ South of Bell Ave	▪ Residents can no longer informally cross San Pedro Subdivision ROW at mid-block to access Salt Lake Park due to safety barrier or soundwalls along rail ROW.	▪ None	▪ No adverse effect; LPA components consistent with visual character of community.
Vernon	▪ None	▪ No adverse effect.	**Residential Displacements** ▪ None **Business Displacements** ▪ At industrial property at the northeast corner of State St/Randolph St, approximately 12 parking spaces will be affected due to grade crossing improvements.	▪ No adverse effect; LPA components consistent with visual character of community.
Cudahy	**Unmitigated Impacts** ▪ Live Oak St to Olive St ▪ Elizabeth St to Cecilia St **Residual Impacts With Mitigation**	▪ Truck turning restrictions on Salt Lake Ave at Santa Ana St and Ardine St will not adversely affect access to community facilities because truck access will be maintained by re-routing trucks to adjacent streets. Community facilities will remain accessible.	**Residential Displacements** ▪ None **Business Displacements** ▪ 3 business displacements consisting of auto services and retail. Displacement of 8 employees.	▪ No adverse effect; LPA components consistent with visual character of community.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
	▪ North side of Santa Ana St	▪ Residents southeast of Salt Lake Park can no longer informally cross San Pedro Subdivision ROW at mid-block to access Salt Lake Park. ▪ Existing grade crossing at Salt Lake Ave/Florence Ave improved to facilitate access of Salt Lake Park.		

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
South Gate	**Unmitigated Impacts** ▪ Firestone Blvd ▪ North of McCallum Ave to Los Angeles River ▪ Mobile home community between Los Angeles River and I-710 freeway ▪ Multifamily residential south of Garfield Ave **Residual Impacts With Mitigation** ▪ Firestone Blvd ▪ Mobile homes closest to Los Angeles River in the mobile home community ▪ North and south sides of Main St	▪ Vehicle-turning restrictions along Gardendale St and truck turning restrictions on Salt Lake Ave at Santa Ana St will not adversely affect access to community facilities because vehicular, bicyclist, pedestrian, and/or truck access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible.	**Residential Displacements** ▪ None **Business Displacements** ▪ 19 business displacements consisting of auto services, industrial, retail, and a plant nursery. Displacement of 141 employees. ▪ At the trucking business south of Ardine St, approximately 3 parking spaces will be affected due to grade crossing improvements.	▪ No adverse effect; LPA components consistent with visual character of community.
Downey	▪ None	▪ Vehicle-turning restrictions along Gardendale St will not adversely affect access to community facilities because vehicular, bicyclist, and pedestrian access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible.	▪ None	▪ No adverse effect; LPA components consistent with visual character of community.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
Paramount	**Unmitigated Impacts** ▪ I-105 to Lakewood Blvd **Residual Impacts With Mitigation** ▪ South of Howe St ▪ Bellota Ave to Lakewood Blvd	▪ Realignment of Paramount Bike Trail will not disrupt operation and access of the bike trail or divide or affect the character of the bike trail. ▪ 20 on-site parking spaces located on a 40-foot-wide section of the Metro-owned ROW at Paramount Park along the northern boundary will be removed. Remaining approximately 280 on-site parking spots to be maintained and off-site parking on Paramount Boulevard will not be affected.	**Residential Displacements** ▪ None **Business Displacements** ▪ 2 business displacements consisting of auto service and industrial. Displacement of 57 employees. ▪ Commercial property at northwest corner of Rosecrans Ave/Paramount Blvd to be acquired for the relocation of freight track. ▪ Removal of 20 on-site parking spaces located on a 40-foot-wide section of the Metro-owned ROW at Paramount Park along the northern boundary. Remaining approximately 280 on-site parking spots to be maintained and off-site parking on Paramount Boulevard will not be affected.	▪ Landscaping and decorative wall on south side of World Energy storage tracks to be removed. Views of storage tracks not visually compatible with surrounding residential area. Mitigation Measure VA-1 (Screening at Somerset Boulevard) will ensure that views of the World Energy storage tracks will continue to be blocked by a decorative screening wall and landscaping.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
Bellflower	**Unmitigated Impacts** ▪ Lakewood Blvd to San Gabriel River **Residual Impacts With Mitigation** ▪ Mobile home community east of Lakewood Blvd ▪ North side of Hegel St to Clark Ave ▪ North side of Rendalia St ▪ Alondra Blvd to Harvard St ▪ Bellflower Blvd to east of Adenmoor Ave ▪ Ripon Ave ▪ Palo Verde Ave	▪ Vehicle-turning restrictions at the Clark Ave/Flora Vista St, Alondra Boulevard/Pacific Avenue, and Alondra Boulevard/Flora Vista St intersections will not adversely affect access to community facilities. Vehicular, bicyclist, and pedestrian access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible. ▪ East of Bellflower Blvd, relocation of the Bellflower Bike Trail will allow users to access the bike trail without having to cross the proposed LRT tracks. Operation of and access to the Bellflower Bike Trail will remain. ▪ Residents in the southern portion of the city will no longer be able to use the Metro-owned PEROW informally as an equestrian trail. PEROW is currently identified as a rail corridor and an existing railroad track is located within the PEROW.	**Residential Displacements** ▪ None **Business Displacements** ▪ 2 business displacements consisting of auto service and a sports center (at the MSF site). Displacement of 85 employees (of which 75 employees are related to the sports center). ▪ Auto business on west side of Bellflower Blvd, north of project alignment to be acquired for Bellflower Station parking facility.	▪ "Belle" public art cow statue in PEROW will be removed but will not detract from or conflict with visual character of the PEROW.
Cerritos	**Unmitigated Impacts** ▪ Eric Ave to Gridley Rd/183rd St ▪ Pioneer to South St **Residual Impact With Mitigation** ▪ Eric Ave to Gridley Rd/183rd St	▪ No adverse effects; no direct access to community facilities is available within the PEROW.	**Residential Displacements** ▪ None **Business Displacements** ▪ At the business park on the southeast corner of Studebaker Rd/Business Circle, approximately 2 parking spaces will be affected due to grade crossing improvements.	▪ No adverse effect; LPA components consistent with visual character of community.

Community	Residential Areas with Adverse Noise Effects[1, 2]	Access to Community Facilities	Residences, Community Assets, or Commercial Businesses Permanently Acquired/Displaced[3]	Changes in Visual Character
Artesia	**Unmitigated Impacts** ▪ Gridley Rd/183rd St to South St **Residual Impacts With Mitigation** ▪ North of 184th St to Alburtis Ave	▪ Vehicle-turning restriction on Pioneer Blvd at the Little India Food Court driveway, street closures/ modifications at 188th St between Corby Ave and Pioneer Blvd and 187th St between Corby Ave West and Corby Ave East will not adversely affect access to community facilities. Vehicular, bicyclist, and pedestrian access will be maintained by re-routing traffic to adjacent streets. Community facilities will remain accessible. ▪ No direct access to community facilities area is available within the PEROW.	**Residential Displacements** ▪ 2 residential parcels (APN 7039-012-004 and 7039-012-012). APN 709-012-012 does not currently contain a residential unit and no residences currently reside on the property. 2 residential units on APN 7039-012-004 will be displaced. Displacement of 7 residents. **Business Displacements** ▪ 13 business displacements consisting of retail, office, and auto service. Displacement of 48 employees. ▪ Property acquisition to accommodate proposed parking facility at Pioneer Station includes commercial and residential properties along Corby Ave, 188th St, and Pioneer St south of project alignment.	▪ No adverse effect; LPA components consistent with visual character of community.

Source: Metro 2024n
Notes: [1] Metro 2024j
[2] Unmitigated impacts are impacts that will occur without mitigation. Residual impacts are impacts that will still occur with the implementation of mitigation.
[3] Metro 2024m
LPA = Locally Preferred Alternative; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TPSS = traction power substation

Access to Community Facilities: The LPA will realign the Paramount and Bellflower Bike Trails, as described in Table 4.2.4, to allow for the use of the pedestrian and bicycle paths without having to cross the LRT tracks. The Paramount and Bellflower Bike Trail in Paramount and Bellflower, respectively, will not be permanently removed. The Artesia Historic District Recreation Trails will not be permanently affected during operation of the LPA.

With the installation of security barriers and/or soundwalls along the PEROW (see Mitigation Measure NOI-1 [Soundwalls] in 4.7.4.2 of the Noise and Vibration Section), some residents in the southerly portion of Bellflower will no longer be able to informally access the PEROW as an equestrian trail or cut across the PEROW to access the Bellflower Bike Trail and Flora Vista Park through their backyards (Table 4.2.4). Residents will still be able to access the Bellflower Bike Trail and Flora Vista Park through local streets. Regardless, Section 12.44.020 of the Bellflower Municipal Code states that equestrian use on the Bellflower Bike Trail is prohibited (Ordinance 1189) and the PEROW is an existing rail corridor and has not been designated as an equestrian trail.

As discussed under the subheading "Vehicle Delays at Intersections, Street Closures, and Turning Restrictions," the closure of Randolph Street at Wilmington Avenue, Regent Street, Rita Street, Malabar Street, and Arbutus Avenue in Huntington Park and turning restrictions on Randolph Street at Santa Fe Avenue, Pacific Boulevard, Miles Avenue, and State Street will not interfere with vehicular access and mobility to community assets and residential neighborhoods. Alternate routes between both sides of the affected streets will be available, and vehicular access to all properties will be maintained.

As discussed in Section 4.16.3.2 of the Parklands and Community Facilities Section, off-site parking at Salt Lake Park and on-site parking at Paramount Park will be affected by the LPA, as described in Table 4.2.4, to accommodate the alignment. The LPA will require termination of the lease agreement between Metro and the City of Paramount for the 40-foot-wide section of the Metro-owned ROW to accommodate the LRT alignment. Other on-site and off-site parking around Salt Lake Park and Paramount Park will remain unaffected. Removal of the parking spaces will not result in an adverse effect related to parking, access to, or use of Salt Lake Park and Paramount Park.

Thus, property displacement and acquisition, the realignment of the Bellflower Bike Trail, the discontinued use of the PEROW as an informal equestrian trail, street closures, turning restrictions, and the removal of off-site parking at Salt Lake Park and on-site parking at Paramount Park will not change the character and cohesion of the communities in the Affected Area and the LPA will not result in adverse effects.

Visual Character: The LPA will be designed using the MRDC as guidance, and adverse changes to the visual character of the communities are not anticipated in the Affected Area for communities. Station entrances will be integrated with the existing land uses and will be consistent and compatible with the existing transportation corridor. The LPA will remove the existing landscaping and wall on the south side of the World Energy storage tracks in Paramount allowing views of the refinery storage tank cars on the railroad tracks along Somerset Boulevard. Views of the storage tracks will not be visually compatible with the surrounding residential area. The pedestrian bridge between the Paramount High School campuses will be demolished and reconstructed. The new bridge will be longer and taller than the existing bridge and will be compliant with the Americans with Disabilities Act (ADA). The new bridge will include 12-foot-wide ramps on each side of the bridge to achieve

ADA compliance. The new bridge will not change the visual character of the Affected Area as the new bridge will be a similar size and in a similar location as the existing bridge and will not alter the visual character of the area. The LPA will also relocate the public art statue, "Belle," from the PEROW; however, it is not expected to adversely affect visual character and quality of the PEROW as the PEROW is a rail corridor and currently contains remnants of railroad tracks.

Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle"), summarized in Section 4.4.4.2 of the Visual and Aesthetics Section, will be implemented so that views of the storage tracks north of Somerset Boulevard remain obstructed and that "Belle" will be relocated, respectively. In addition, segments of the alignment at the rear of residences, community facilities, and industrial buildings will not be affected by the changes to the visual character within the rail ROW. Where aerial structures will be located to the rear of residential properties and soundwalls on these aerial structures are less than 8 feet in height, vertical screening elements (Project Measure VA PM-8 (Residential Screening for Aerial Structures), described in Section 4.4.4.1 of the Visual and Aesthetics Section) will be placed on top of the soundwalls to block the line-of-sight between the LRT vehicles on the aerial structures and the rear yards of adjacent residential properties. As such, the LPA will not result in visual changes and is not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Land Use: The LPA could indirectly affect growth and development in the Affected Area for communities by providing opportunities for TODs around stations. However, these changes would be consistent with the goals, policies, and objectives of the affected local jurisdictions; and new development around the stations will be solely at the discretion and approval of the affected communities. Such development will not be part of the Project and will undergo separate reviews and approvals. City- and Metro-funded TOD plans are not expected to induce growth beyond SCAG's growth projections for the region and in local community plans. In this context, potential adverse indirect land use effects will be addressed and mitigated by restrictions imposed by local jurisdictions. As the potential land use changes will be consistent with the goals, policies, and objectives of the affected local jurisdictions and new development around the stations will be solely at the discretion and approval of the affected communities, the character and cohesion of the communities within the Affected Area are not expected to be adversely affected.

Demographics: Population in the areas surrounding the stations is projected to grow and will be consistent with SCAG's adopted growth projections, which are based on the General Plan land use designations of local jurisdictions. Furthermore, the Affected Area for communities includes the International Cultural District of Artesia, also known as "Little India," a locally identified cultural community. The LPA will increase connectivity to this district.

Summary: Overall, the LPA will not include components that will directly or indirectly affect community character and cohesion. Property acquisition and displacement of businesses and residents will not affect the overall function of community assets or adjacent and surrounding uses, and no community assets will be displaced. Access to community facilities will be maintained. Additionally, changes in noise levels (with implementation of Mitigation Measures NOI-1 through NOI-5), visual character (with implementation of Mitigation Measures VA-1 and VA-2), land use, and demographics will not adversely affect community character and cohesion. The cohesion of ethnic and racial groups within the Affected Area for communities will not substantially change existing growth and development patterns.

Development in the station areas is anticipated to be consistent with the affected jurisdictions' General Plan land use designations. Under NEPA, the LPA will not result in adverse effects related to community character and cohesion.

Community Stability

Approximately 87 percent of residents living in the Affected Area for communities have resided in the same residence for one year or more, which can indicate a strong cohesive community. Although the LPA will require partial and full acquisition of several residential properties and some residents may be displaced, the LPA is not expected to alter the stability of the communities in the Affected Area for communities. Instead, the LPA will increase the connection among the communities in the Affected Area for communities by providing additional transit services, which will benefit the existing residents of the communities and could help support the stability of the communities in the Affected Area. Under NEPA, the LPA will not result in adverse effects related to community stability.

4.2.3.3 Design Option: Close 186th Street

Access and Mobility

The closure of 186th Street at the PEROW and the provision of an at-grade crossing at 187th Street in the City of Artesia would not impede access and mobility of motorists, pedestrians, and bicyclists to residential neighborhoods and community assets. The prevailing access and mobility patterns in the Affected Area for communities would shift, resulting in different community access routes when compared to those under existing conditions or for the LPA without the design option. Although motorists, pedestrians, and bicyclists would no longer be able to cross the PEROW at 186th Street, alternate routes would be available to access 186th Street on both sides of the PEROW, and access to all properties would be maintained. The Artesia Historic District Recreation Trails would be maintained and would continue to be accessible on the northeast side of the PEROW at 186th Street. Pedestrians and bicyclists on the southwest side of the PEROW can access the bike trail using 187th Street. Permanent access disruptions to existing land uses on both sides of the rail ROW would not occur with implementation of the design option. Access to the surrounding residential neighborhoods, businesses, and community assets would remain. Thus, no adverse effects on access and mobility would occur.

Community Character and Cohesion

No residential properties or community assets would be permanently displaced by the design option. Although the street closure at 186th Street would result in different community access routes when compared to those under existing conditions or for the LPA without the design option, the community's physical layout would be the same, and the area surrounding the design option would remain accessible through alternate routes. The overall functionality of the uses adjacent to and surrounding the alignment and station entrances would not be adversely affected. The visual character, land use, and demographics would be similar to the LPA without the design option. The design option would remove the crossing signal noise from 186th Street and add crossing signal noise to 187th Street. The LPA with the design option would result in 96 moderate impacts and 118 severe impacts, which would be a decrease of 1 moderate impact and an increase of 1 severe impact compared to the LPA without the design option. The LPA with or without the design option would result in a total of 214 impacts. Similar to the LPA without the design option, mitigation measures would be

implemented, but residual noise impacts would remain. The changes associated with the design option are not anticipated to isolate or change community character or cohesion.

Community Stability

The design option would be within the PEROW and public street ROW. No residential properties or community assets would be acquired and no residents would be displaced for the design option. All properties in the surrounding area would remain accessible through alternate routes. Thus, the LPA with the design option is not expected to alter the stability of the communities in the Affected Area. The design option would be part of the LPA, which would increase the connection among communities in the Affected Area by providing additional transit services. Therefore, no adverse effects related to community stability would occur.

4.2.3.4 Maintenance Storage Facility

Access and Mobility

The MSF site is located south of Somerset Boulevard in Bellflower and is currently leased by Bellflower to the owners of the Hollywood Sports Paintball & Airsoft and Bellflower BMX, a privately owned recreational business. The MSF site is surrounded by single- and multifamily residences, mobile home communities, and industrial and commercial businesses. Security barriers will be installed along the perimeter of the MSF site. The MSF entrance/exit driveway will be aligned with Somerset Boulevard at Bayou Avenue, and a traffic signal and signalized crosswalk will be installed at the intersection that will maintain access to nearby residential neighborhood or community assets. Pedestrian and vehicular access to nearby residential neighborhoods and mobile home communities will be maintained. Additionally, operation of the MSF is not expected to adversely affect any of the nearby street intersections. The new lead tracks located within the PEROW on the south side of the MSF site will not impede access to the Bellflower Bike Trail because the bike trail will be located south of the proposed lead and LRT tracks. Under NEPA, the MSF site will not result in adverse effects related to community access and mobility.

Community Character and Cohesion

The MSF site does not include any identifiable community assets. Although the privately owned recreational business will no longer be located on the site, no residential properties or community assets will be isolated, disrupted, or displaced. The MSF site will change the existing recreational/commercial site to an industrial-related use, but the use will be consistent with the mixed industrial, commercial, and residential character of the surrounding area. The physical layout of the community surrounding the MSF will remain similar to existing conditions.

The MSF will not result in adverse noise effects at the surrounding residential uses. Additionally, the MSF will not adversely affect visual character because existing landscaping and barriers along the perimeter of the MSF will either remain or be replaced with other types of landscaping and barriers that will obstruct views of the MSF from the surrounding residential uses.

The MSF will not directly or indirectly affect the cohesion of ethnic and racial groups. It is not expected to directly induce any population or housing growth as it will be a maintenance and industrial-focused use and will be consistent with the industrial uses adjacent to the

west. Any increase in employment associated with the MSF will be consistent with the SCAG growth projections for the City of Bellflower. The potential increase in employment is not expected to induce substantial unplanned population growth since it is anticipated that employment will primarily be filled by residents of the LA County region. Under NEPA, the changes associated with the MSF will not result in adverse effects related to community character and cohesion of the Bellflower community.

Community Stability

Approximately 90 percent of Bellflower residents have resided in the same house after one year. The MSF will not acquire or displace any residential properties, and the development of the MSF is not expected to cause residents living near the MSF to move out of the Bellflower community. Under NEPA, the MSF will not result in adverse effects related to community stability.

4.2.3.5 U.S. Army Corps of Engineers Facilities

Under existing conditions, residents in communities near the USACE facilities do not have access to the river channels within or adjacent to the rail ROWs. Additionally, no street closures, turning restrictions, or increased vehicle delays at intersections will occur in the areas surrounding the USACE facilities. The bridge structures and other LPA components that will be constructed over the USACE facilities will not impede the use of the existing bike trails along the banks of the river channels and will not alter the stability of communities surrounding the river channels. Use of the bike trails along the banks of the river channels will continue. LPA components at the USACE facilities will not adversely affect access and mobility, community character and cohesion, and community stability in the area surrounding the USACE facilities.

4.2.4 Project Measures and Mitigation Measures

4.2.4.1 Project Measures

Refer to Project Measures TR PM-1 (Pre-signals and Queue-cutter Signals) in Section 3.5.1 of Chapter 3, Transportation, and VA PM-8 (Residential Screening for Aerial Structures), described in Section 4.4.4.1 of the Visual and Aesthetics Section of this Final EIS/EIR.

4.2.4.2 Mitigation Measures

Refer to Mitigation Measures TRA-1 through TRA-17, which are specific intersection modifications described in Section 3.5.2.1 of Chapter 3, Transportation, of this Final EIS/EIR for the descriptions of intersection lane reconfigurations that will address intersection impacts identified for the LPA. Impacts will remain at 12 intersections during one or both peak periods after mitigation.

Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle") in Section 4.4.4.2 of the Visual and Aesthetics Section will address visual impacts by preserving screening elements and relocating public art.

Mitigation Measures NOI-1 through NOI-5, which include soundwalls for LRT, low impact frogs, wheel squeal noise monitoring, TPSS noise reduction, and soundwalls for freight track relocation (see Section 4.7.4.2 of the Noise and Vibration Section), will reduce noise levels from the LRT, ancillary facilities, and freight. Ancillary facilities noise impacts will be mitigated.

4.2.5 California Environmental Quality Act Determination

4.2.5.1 Threshold COM-1: Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and the existing communities and neighborhoods would remain unchanged. No properties would be acquired; no structures along the LPA would be demolished; and no new structures would be constructed. Additionally, the future planning for TODs around project stations would not be implemented. No population growth beyond that already anticipated in the SCAG growth projections for the region and in local community plans would occur either directly or indirectly. Therefore, no impacts would occur and mitigation would not be required.

Locally Preferred Alternative

The LPA will not directly result in population growth within surrounding communities. The LPA could indirectly affect growth and development in the Affected Area for communities by providing opportunities for TODs around stations. However, this development will be subject to approval by the city and to all applicable requirements and regulations of the affected city. It also is anticipated to be consistent with SCAG growth projections and will not induce growth beyond that already anticipated in the adopted growth projections for the region and in local community plans. The LPA will be located in an area surrounded by urban uses with a limited number of vacant or underutilized parcels and is not expected to substantially change existing growth and development patterns. Thus, as the LPA is not expected to induce substantial population growth in the Affected Area for communities beyond adopted growth projections, impacts will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

The design option would not directly induce population or housing growth and would not induce substantial unplanned population growth beyond SCAG growth projections for the City of Artesia. Therefore, no impacts would occur.

Maintenance and Storage Facility

The MSF will not directly induce population or housing growth. The potential increase in employment is not expected to induce substantial unplanned population growth and will be consistent with the SCAG growth projections for the City of Bellflower. Therefore, impacts will be less than significant and mitigation will not be required.

4.3 Acquisitions and Displacements

This section summarizes the acquisitions and displacements required for the No Build Alternative and the LPA, including the design option and MSF. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Displacements and Acquisitions Impact Analysis Report* (Metro 2024m).

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. Based on the design refinements, the LPA will affect more parcels and require more full and partial acquisitions compared to Alternative 3 as evaluated in the Draft EIS/EIR. The LPA will affect 204 parcels requiring 48 full acquisitions and 199 partial acquisitions. In comparison, Alternative 3 as analyzed in the Draft EIS/EIR would affect 172 parcels, requiring 25 full acquisitions and 188 partial acquisitions. It should be noted that parcels are identified by parcel boundaries and Assessor's Parcel Numbers. "Affected Parcels" is not a total sum of the permanent full and partial acquisitions. More than one permanent partial acquisition may occur on a single parcel and each permanent partial acquisition is counted. Design refinements, such as shifting the aerial Slauson/A Line station platform south, extending the LRT viaduct north of Imperial Highway to avoid impacts to a spur track, and track design shifts, result in overall fewer business and residential displacements for the LPA compared to Alternative 3. Specifically, the LPA will displace a total of 58 businesses and 13 residential units compared to a total of 65 businesses and 21 residential units under Alternative 3. Additionally, the business displacement and relocation analysis has been updated since the Draft EIS/EIR to June/July 2023 conditions, which identified that some businesses are no longer active.

The Final EIS/EIR also includes a slight adjustment regarding full acquisitions. This change is mainly due to the inclusion of 19 permanent full acquisitions required for parking facilities that were inadvertently excluded from Section 4.3 of the Draft EIS/EIR. Although not counted initially in the permanent acquisition analysis, the acquisition of these 19 parcels was discussed in Section 4.19.3.3 (Construction-related Acquisitions and Displacements) and shown on the design plans included in Appendix B. As explained in Section 4.19.3.3 of the Draft EIS/EIR, these parcels will initially be used as construction staging areas and will ultimately be converted into the parking facilities for the Project's operation. Impacts at these parking facilities are similar to those shown on the right-of-way plans included in Appendix B of the Draft EIS/EIR, with additional adjustments for refinements made in response to public comments and stakeholder coordination. Appendix A of the Final Displacements and Acquisitions Impact Report details impacts by parcel for this Final EIS/EIR. In total, the LPA, inclusive of refinements, will result in an increase of four permanent, full acquisitions compared to Alternative 3 from the Draft EIS/EIR.

Acquisitions at the MSF site located in Bellflower will remain the same as presented in the Draft EIS/EIR. Business impacts have been updated from two relocations to one relocation for the Final EIS/EIR, as the business records at the Bellflower MSF show the uses treated as a single business.

The design option would not result in permanent property acquisitions. Permanent acquisitions and displacements related to the MSF remain unchanged from what was analyzed in the Draft EIS/EIR.

The "gap analysis" conducted to determine if there are available replacement sites to accommodate displacements resulting from implementation of the LPA was updated since the Draft EIS/EIR. The "gap analysis" in the Final EIS/EIR is based on the real estate market conditions as of June/July 2023, whereas the "gap analysis" in the Draft EIS/EIR was based on market conditions as of June/July 2020. Based on 2023 data, a sufficient number of comparable replacement sites may not be available within displacement cities for automotive businesses in the Cities of Los Angeles, South Gate, Cudahy, and Artesia; a food service and a hotel property in the City of Huntington Park; a nursery property in the City of South Gate; and a sports center in the City of Bellflower. Similar to the conclusions of the Draft EIS/EIR, suitable replacement sites for the automotive businesses in the Cities of Los Angeles, South Gate, Cudahy, and Artesia, and a food service and hotel property in the City of Huntington Park will be available within 6 miles of the affected properties. Similar to conclusions from the Draft EIS/EIR, the nursery in the City of South Gate and the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business in the City of Bellflower may have a challenge finding a suitable replacement site for sale or lease at the time of acquisition. No viable options for sale or lease within the city boundaries or within 6 miles of the affected property were identified for the nursery or paintball/airsoft and BMX business.

The impact conclusions remain the same as those in the Draft EIS/EIR, including with respect to Alternative 3. Metro will provide relocation assistance and compensation for identified eligible displaced businesses and residences as required under the Uniform Act and California Relocation Act. The LPA will not result in adverse effects related to acquisitions and displacements.

4.3.1 Regulatory Setting and Methodology

4.3.1.1 Regulatory Setting

Property acquisitions and displacements, including the relocation of residents and businesses, are regulated by federal, state, and local policies.

Federal and State

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 United States Code [U.S.C.] Section 61) (Uniform Act): The Uniform Act mandates that certain relocation services and payments be made available to eligible residents, businesses, and non-profit organizations displaced as a direct result of projects undertaken by a federal agency or with federal financial assistance. The Uniform Act provides uniform and equitable treatment of persons displaced from their homes and businesses and establishes uniform and equitable land acquisition policies. Owners and holders of real estate interests of private property have federal constitutional guarantees that their property will not be acquired, taken, or damaged for public use unless they first receive an offer of just compensation. Metro delivers right-of-way in compliance with the Uniform Act to meet eligibility requirements for federal funds should those funds become available.

California Relocation Act (Government Code Section 7260 et seq.): The California Relocation Act establishes uniform policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. This Act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement.

Relocation Resources: In accordance with the Uniform Act; 49 CFR Part 24; California Government Code 7260 et seq.; and California Code of Regulations (CCR) 600 et seq., in the event business or residential displacement occurs as a result of property acquisitions, relocation resources would be provided by Metro to eligible displacees. This also includes a relocation plan as required by CCR, Title 25, Division 1, Chapter 6.

Local

Local regulations and plans reviewed for policies related to acquisitions and displacements include the *City of Los Angeles Housing Element 2013-2021* (City of Los Angeles 2013), *City of Vernon General Plan Housing Element 2014-2021* (City of Vernon 2015), *Florence-Firestone Community Plan* (Los Angeles County 2019a), *City of Huntington Park General Plan 2030* (City of Huntington Park 2017), *City of South Gate General Plan 2035* (City of South Gate 2009), *City of Bellflower General Plan: 1995-2010* (City of Bellflower 1994), and *City of Artesia General Plan 2030* (City of Artesia 2010).

4.3.1.2 Methodology

Acquisition is the process of acquiring real property and can consist of full property acquisitions or partial property acquisitions. A full acquisition will result in the purchase of an entire property and will occur when the amount of property required could result in an uneconomic remnant to the property owner, including displacement of the primary structure or elimination of access. A partial acquisition will result in the purchase of a portion of the property and will occur if the LPA requires only a limited portion of the property, leaving the remainder of the site economically viable. Under a partial acquisition, the property owner will retain the remaining portion of the property. Metro may purchase a fee or permanent easement interest for those identified areas and will become owner for that portion of the property rights (shown as "Fee Area").

An easement is the right to use all or part of the property of another owner for a specific purpose and can be at the surface level, underground/subsurface (beneath a property), or aboveground (aerial). Easements can be permanent or temporary. Parcels affected with temporary construction easements (TCE) will be returned to preconstruction conditions once construction is completed. For construction staging areas that require full permanent acquisitions, those sites will not be returned to preconstruction conditions. These sites will be used for permanent elements for the LPA, such as station parking facilities and the MSF at the conclusion of construction and to support operation of the LPA. Permanent subsurface easements will be required for the LPA beneath I-710 for the LRT tracks in a new jacked box tunnel. Permanent aerial easements are used for the operation of an elevated transit line. The purchase of an easement is accomplished through a one-time payment and an easement deed is recorded.

For purposes of this analysis, the Affected Area for acquisitions is defined in terms of displacement and replacement areas, as these areas have been identified to be the area of potential impact. A "displacement" occurs when the LPA acquires a parcel, or portion thereof, resulting in a person having to move from the real property or having to move his or her personal property from the real property. The displacement area includes privately held residential, commercial, and industrial properties (parcels) directly affected by the LPA. "Replacement" refers to the movement (or relocation) of affected businesses and residences into suitable replacement sites (49 CFR 24.2 (a)(9). The replacement area includes the cities affected by the LPA and other nearby cities that may provide replacement site options. This

analysis prioritized affected cities and communities for identification of replacement sites. A 6-mile search distance from the rail centerline of the LPA was also used to identify potential replacement sites per standard right-of-way evaluation industry practice.

To satisfy NEPA requirements, property displacements are determined by evaluating the extent that the LPA will affect existing properties and identifying such properties where the current use will not be possible with implementation of the LPA. Full or partial acquisitions and the number and type of displacements were identified to analyze effects related to displacement and acquisition on residential properties. The evaluation of effects on commercial and industrial properties consists of direct physical effects on structures and effects that may disrupt the businesses' ability to conduct their primary function after LPA implementation (e.g., available parking and access to—and traffic circulation within—the property). Identifying potential replacement sites for non-residential properties required a search for properties currently for sale or lease within each of the replacement area cities and within 6 miles of the affected properties.

A "gap analysis" was conducted to determine if there is a surplus or deficit in available replacement sites compared with the number of displacements in those cities. The "gap analysis" was updated from the Draft EIS/EIR and is based on real estate market conditions as of June/July 2023, compared to the Draft EIS/EIR which was based on conditions as of 2020. For purposes of the "gap analysis," a "surplus" identifies a larger number of available replacement sites than required to accommodate, and a "deficit" identifies an insufficient number of replacement sites. A "suitable" replacement site will meet the definition of a "comparable replacement dwelling," as described in 49 CFR 24.2 (a)(6).

To satisfy CEQA requirements, displacement-related impacts were analyzed in accordance with *CEQA Guidelines*, identified in Section 4.3.5.

4.3.2 Affected Environment/Existing Conditions

The LPA is located in or adjacent to the urban and suburban areas of the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the unincorporated Florence-Firestone community of LA County. The immediate surrounding urban land uses are characterized by public facilities, commercial (offices and retail), industrial, and residential (single- and multifamily) uses. Section 4.1.2 of the Land Use section of this Final EIS/EIR details the land uses along the LPA alignment and stations.

4.3.3 Environmental Consequences/Environmental Impacts

4.3.3.1 No Build Alternative

Under the No Build Alternative, projects other than the LPA would continue to be built, and acquisitions and/or displacements would occur as required to support those projects. These acquisitions could include full acquisitions, partial acquisitions, and/or permanent easements that may result in the displacement of residents, businesses, and employees. The projects planned under the No Build Alternative would undergo separate environmental review, which would include an analysis of mitigation measures to mitigate potential impacts and compliance with applicable federal, state, and other applicable policies.

4.3.3.2 Locally Preferred Alternative

Acquisitions

The LPA will require full and partial acquisitions, as shown in Table 4.3.1. Full acquisitions will be required to accommodate the structures and columns for the aerial segments of the alignment, TPSS sites, parking facilities, and other ancillary facilities. Partial acquisitions will be required for stations, grade crossings and separations, freight track relocation, and other ancillary facilities (e.g., vents/switches/egress, train control house, radio house, and TPSSs). Permanent surface easements will be needed to provide property access or to accommodate at-grade components of the LPA. Permanent aerial easements will occur for the operation of the LPA where it is aerial. Acquisition of an easement is considered a partial property acquisition from the property owner.

Table 4.3.1. Summary of Permanent Property Acquisitions by the LPA

	Affected Parcels[1]	Full Acquisitions[2]	Partial Acquisitions	Parcel Affected Area (sq ft)[3]
Locally Preferred Alternative	204	48	199	1,262,500
MSF Site	2	2	0	939,700
LPA +MSF Total	**206**	**50**	**199**	**2,202,200**
Design Option[4]	0	0	0	0

Source: Metro 2024m
Notes:
[1] Parcels are identified by parcel boundaries and Assessor's Parcel Numbers. "Affected Parcels" is not a total sum of the permanent full and partial acquisitions. More than one permanent partial acquisition may occur on a single parcel and each permanent partial acquisition is counted.
[2] The table accounts for full permanent acquisitions of parcels that will be used for construction staging areas and then converted to station parking facilities and the MSF to support operation of the LPA. In total, 22 parcels will be converted to station parking facilities and the MSF.
[3] Parcel Affected Area rounded to nearest hundred.
[4] With implementation of the design option, the LPA with the design option would result in a net of one less permanent, partial acquisition and one less affected parcel compared to the LPA without the design option.
LPS = Locally Preferred Alternative; MSF = maintenance and storage facility; sq ft = square feet

The LPA inclusive of the MSF will affect a total of 206 parcels and require 50 full property acquisitions and 199 partial acquisitions. Table 4.3.1 summarizes the number of affected parcels and permanent acquisitions by the LPA, including the design option and MSF. Table 4.3.2 presents permanent acquisitions by jurisdiction. Details on TCEs are presented in Section 4.19.3.3, Construction Impacts, and are not presented in the following permanent property acquisition tables. Each identified parcel may include more than one permanent partial acquisition.

Table 4.3.2. Permanent Property Acquisitions by Jurisdiction

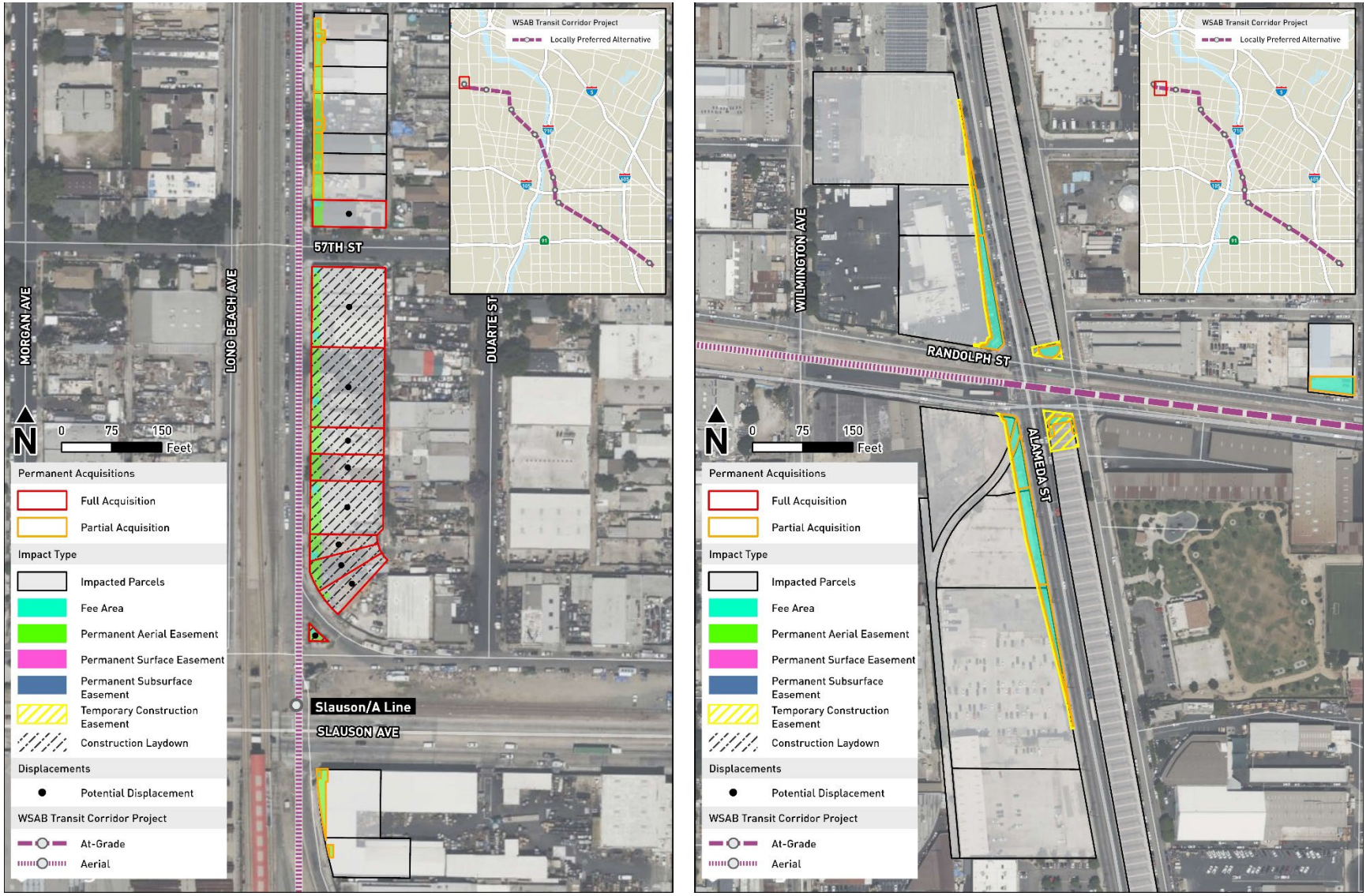
Jurisdiction	Affected Parcels[1]	Full Acquisitions[2]	Partial Acquisitions	Parcel Affected Area (sq ft)[3]
Los Angeles	17	10	10	11,900
Vernon	1	0	1	1,600
Unincorporated LA County	2	0	4	1,200
Huntington Park	48	7	52	61,100
Cudahy	8	1	8	4,400
Downey	2	0	5	5,200
South Gate	56	15	53	714,000
Paramount	48	3	54	250,600
Bell	1	0	1	100
Bellflower[4]	6	3	4	1,074,300
Artesia	12	11	1	76,700
Cerritos	5	0	6	1,100
Total	**206**	**50**	**199**	**2,202,200**

Source: Metro 2024m
Notes:
[1] Parcels are identified by parcel boundaries and Assessor's Parcel Numbers (APN). "Affected Parcels" is not a total sum of the permanent full and partial acquisitions. More than one permanent partial acquisition may occur on a single parcel and each permanent partial acquisition is counted.
[2] The table accounts for full permanent acquisitions of parcels that will be used for construction staging areas and then converted to station parking facilities and the MSF to support operation of the LPA. In total, 22 parcels will be converted to station parking facilities and the MSF.
[3] Parcel Affected Area rounded to nearest hundred.
[4] The permanent property acquisitions for the City of Bellflower includes the MSF site.

The LPA will also acquire portions of rail ROWs owned by the UPRR and the Ports of Los Angeles and Long Beach, including portions of the San Pedro Subdivision, La Habra Subdivision, and Wilmington Subdivision. It is understood the freight tracks in the rail ROWs are active and will remain active during operation of the LPA. Acquisition of portions of the rail ROW will allow the Project to realign the freight tracks to accommodate the LPA and allow continued operation of the freight tracks and spurs along the rail ROW.

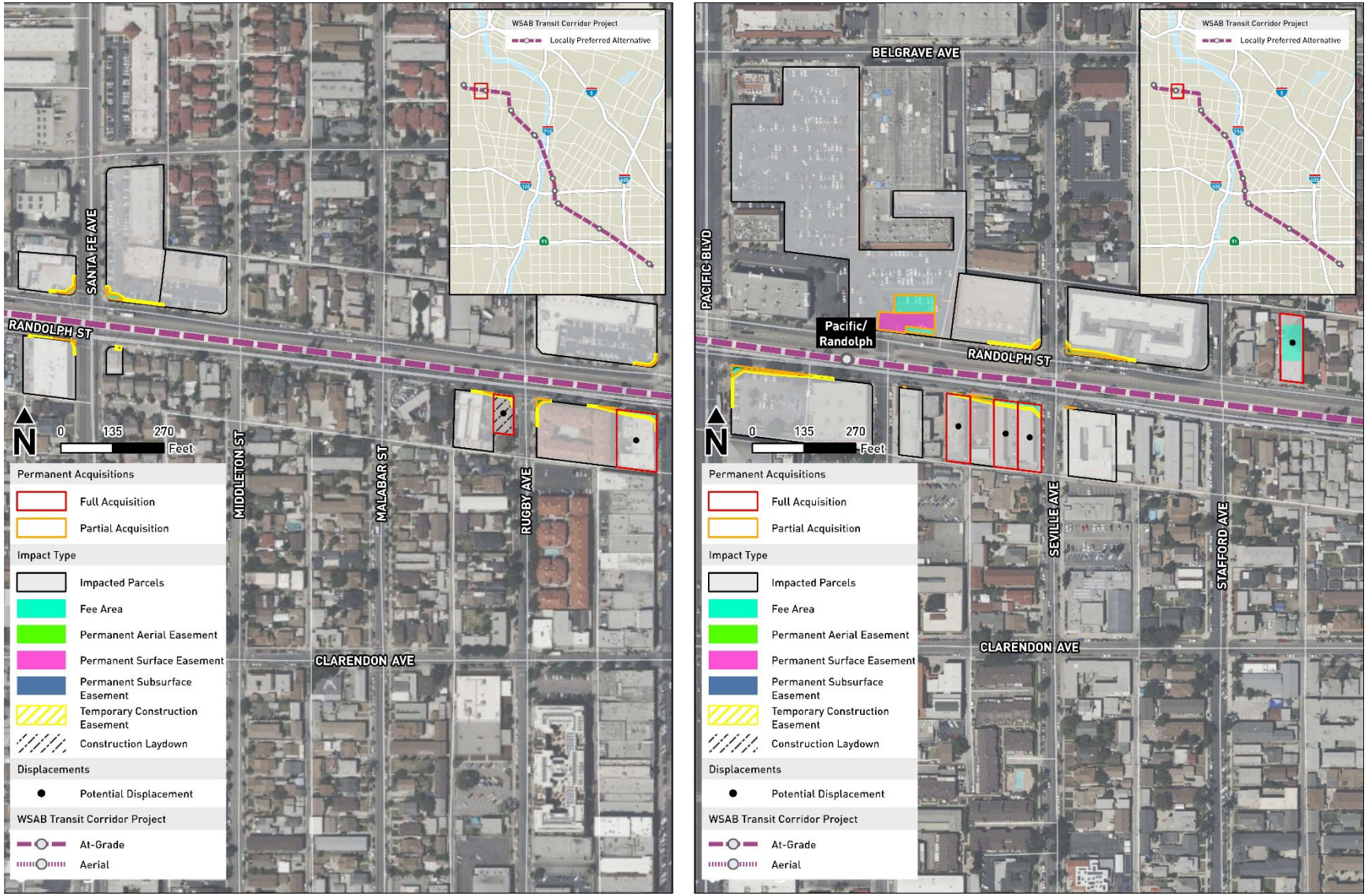
Figure 4.3-1 through Figure 4.3-14 show the permanent and temporary property acquisitions for the LPA, the design option, and the MSF.

Figure 4.3-1. Property Acquisitions for the Locally Preferred Alternative



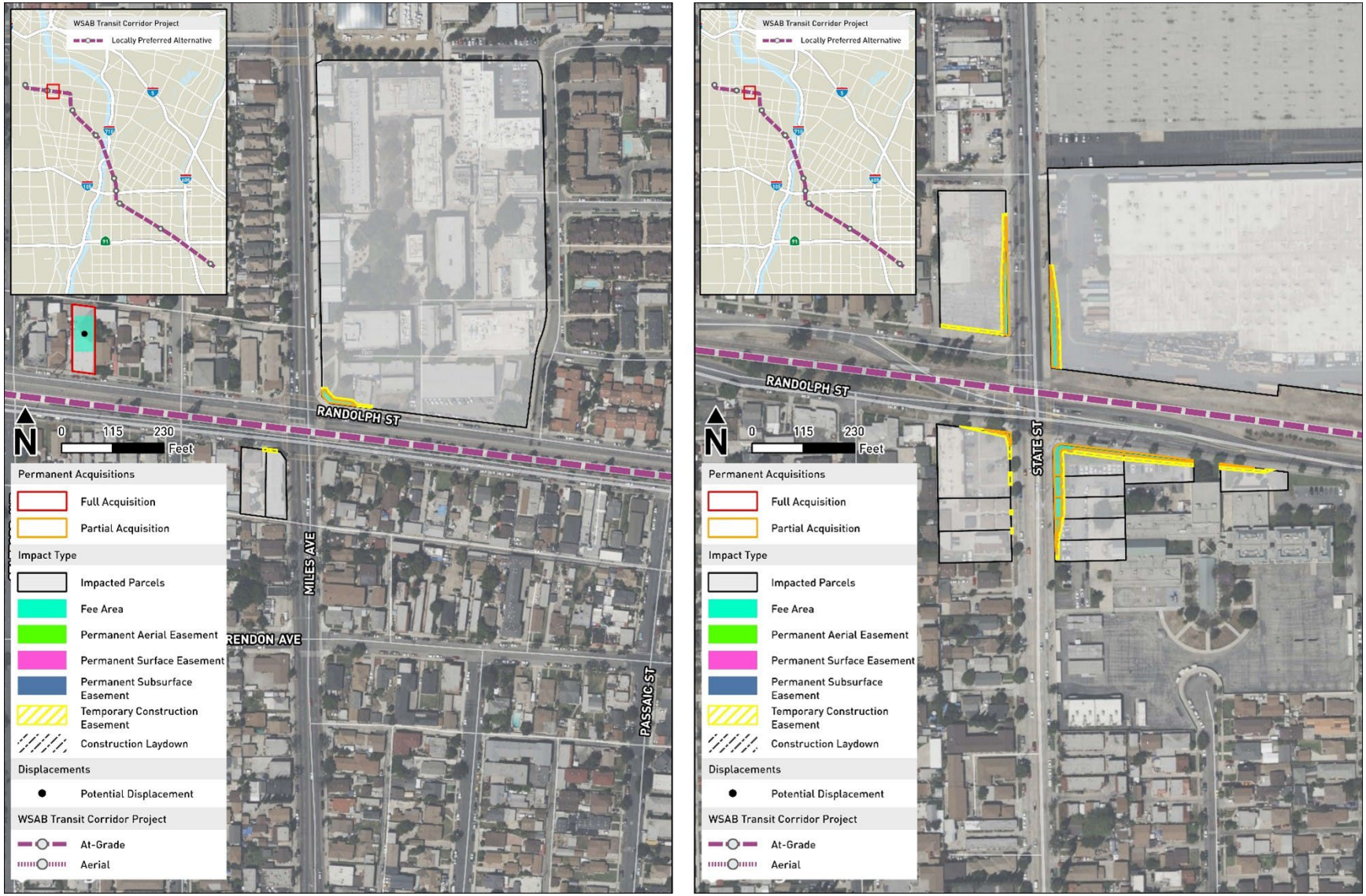
Source: Metro 2024m

Figure 4.3-2. Property Acquisitions for the Locally Preferred Alternative



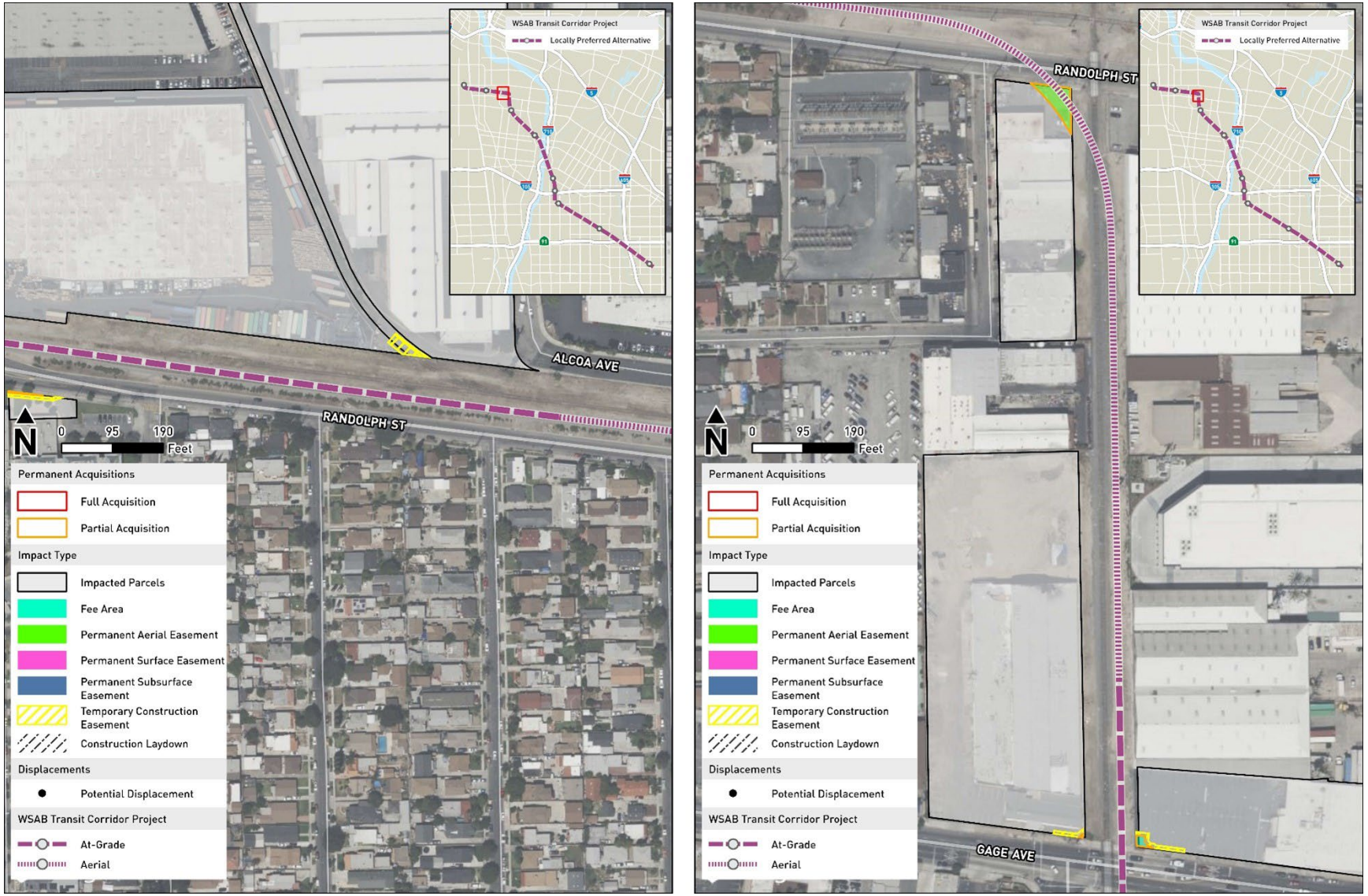
Source: Metro 2024m

Figure 4.3-3. Property Acquisitions for the Locally Preferred Alternative



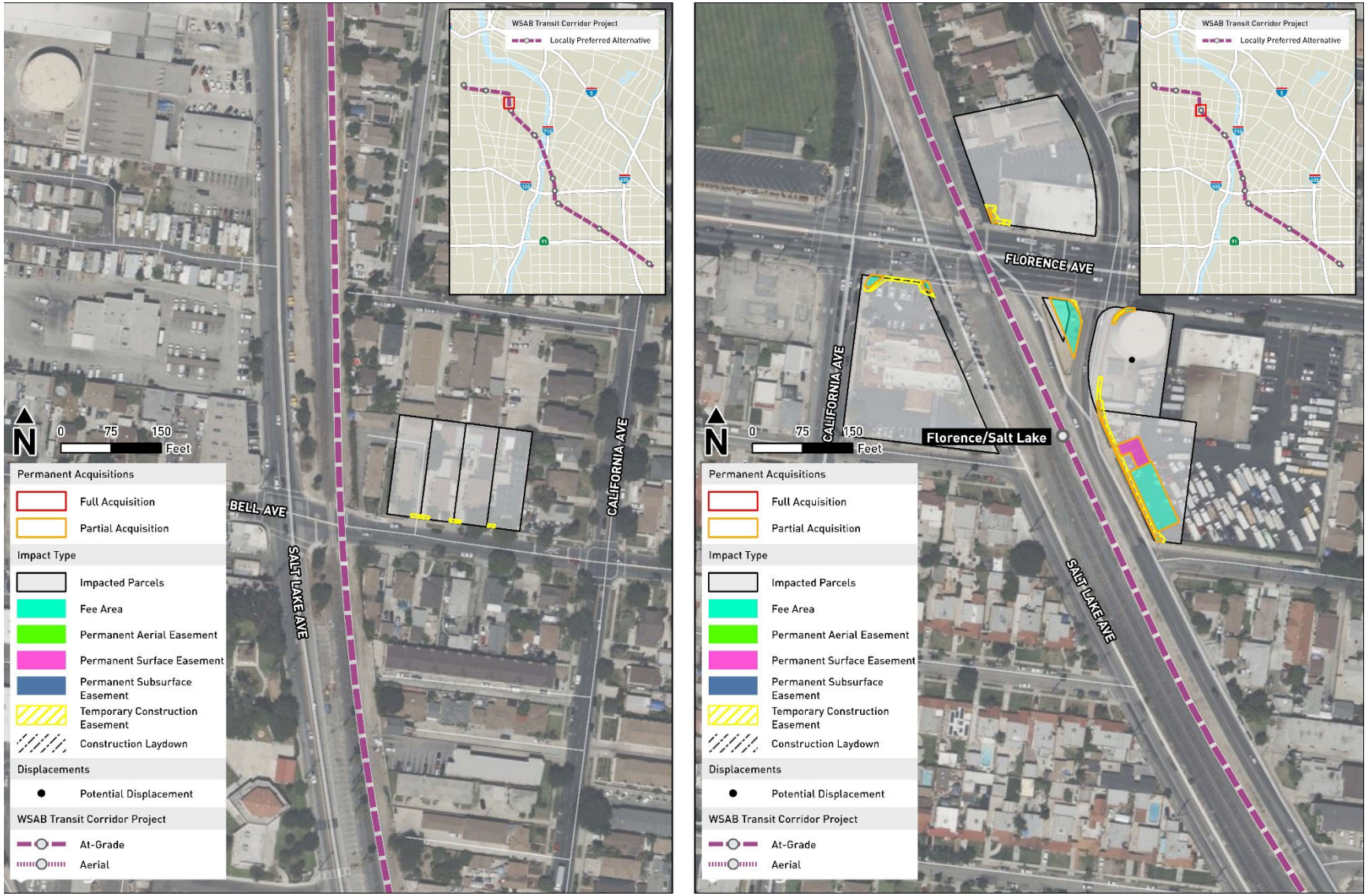
Source: Metro 2024m

Figure 4.3-4. Property Acquisitions for the Locally Preferred Alternative



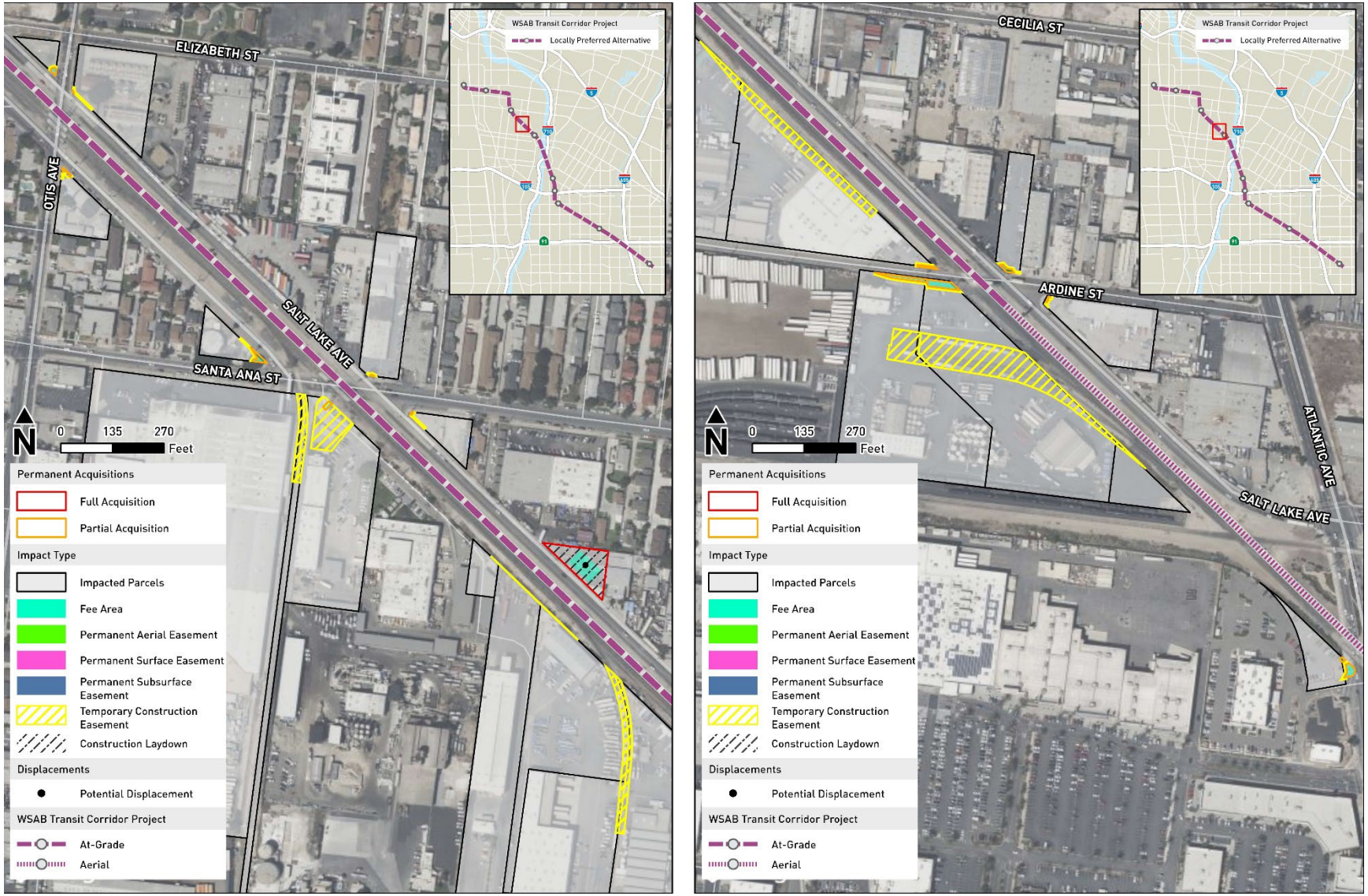
Source: Metro 2024m

Figure 4.3-5. Property Acquisitions for the Locally Preferred Alternative



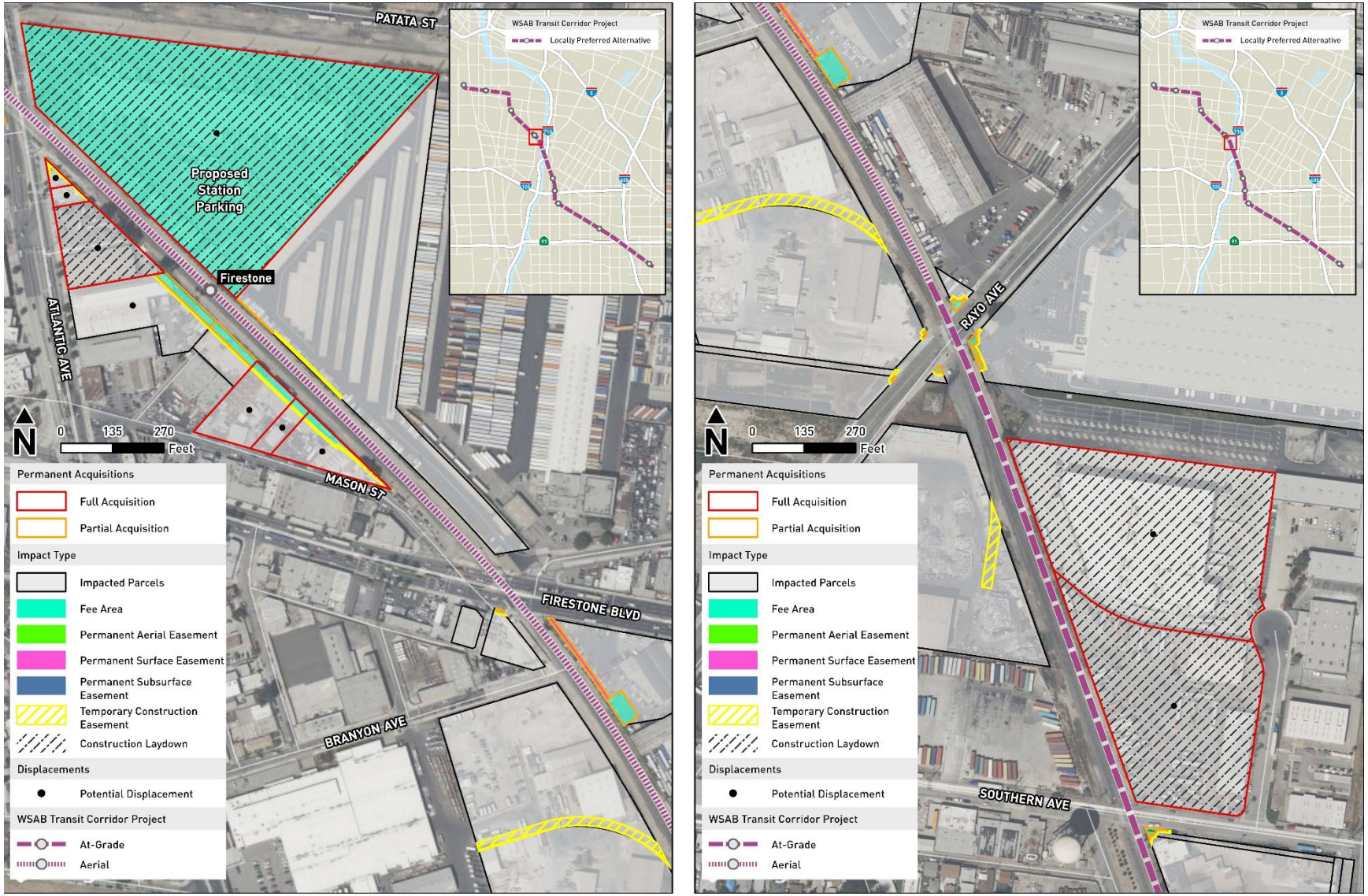
Source: Metro 2024m

Figure 4.3-6. Property Acquisitions for the Locally Preferred Alternative



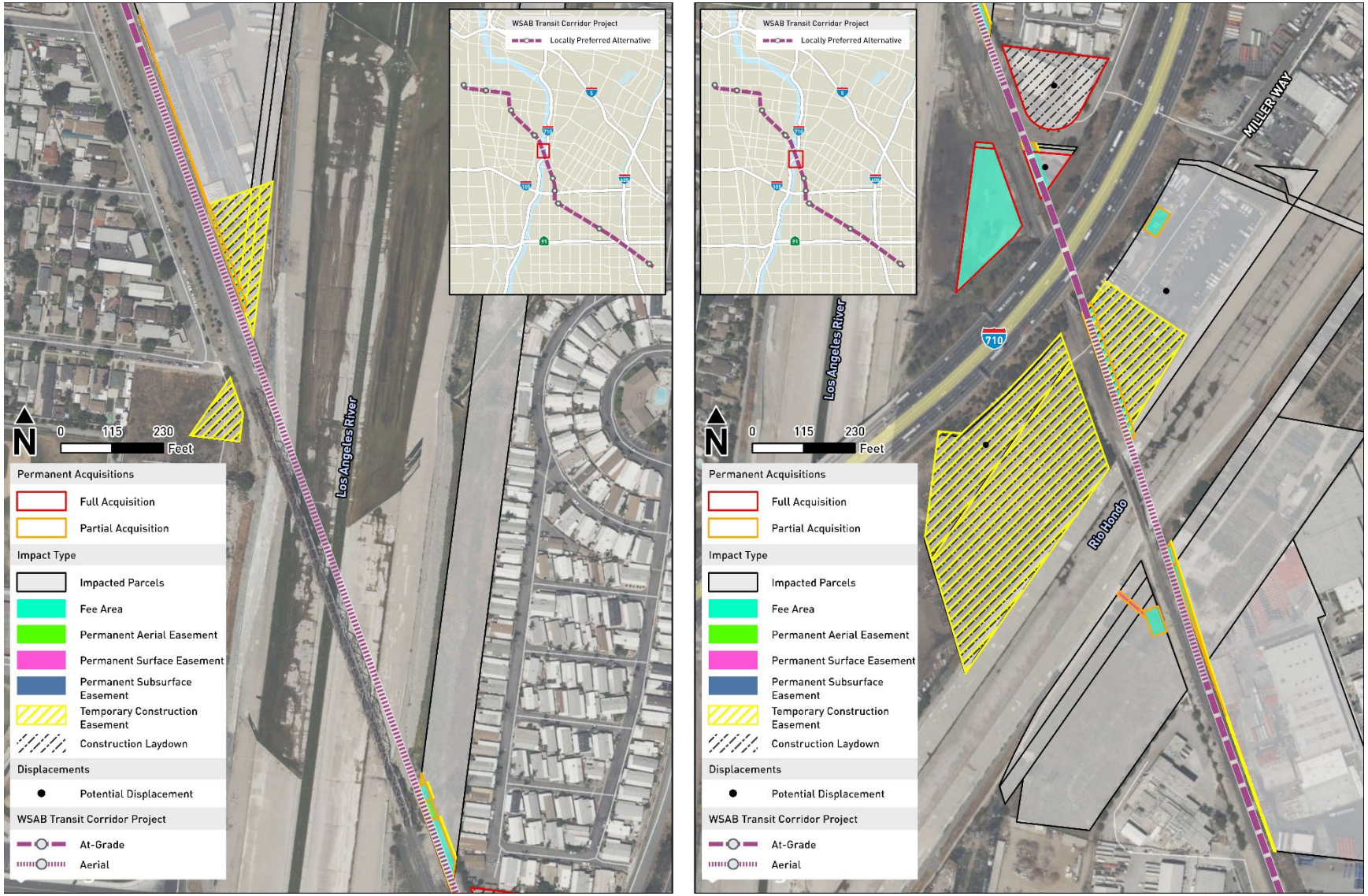
Source: Metro 2024m

Figure 4.3-7. Property Acquisitions for the Locally Preferred Alternative



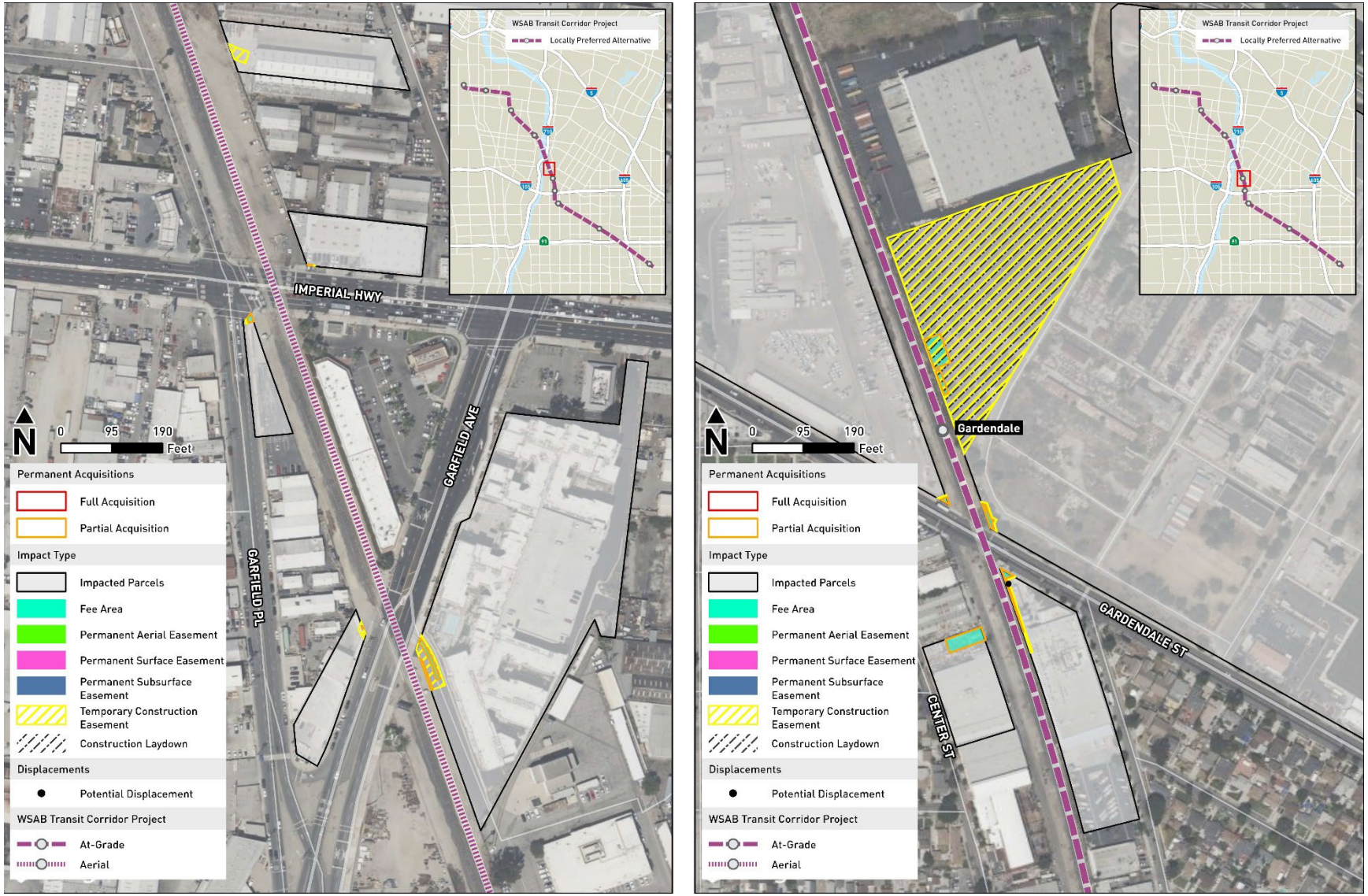
Source: Metro 2024m

Figure 4.3-8. Property Acquisitions for the Locally Preferred Alternative



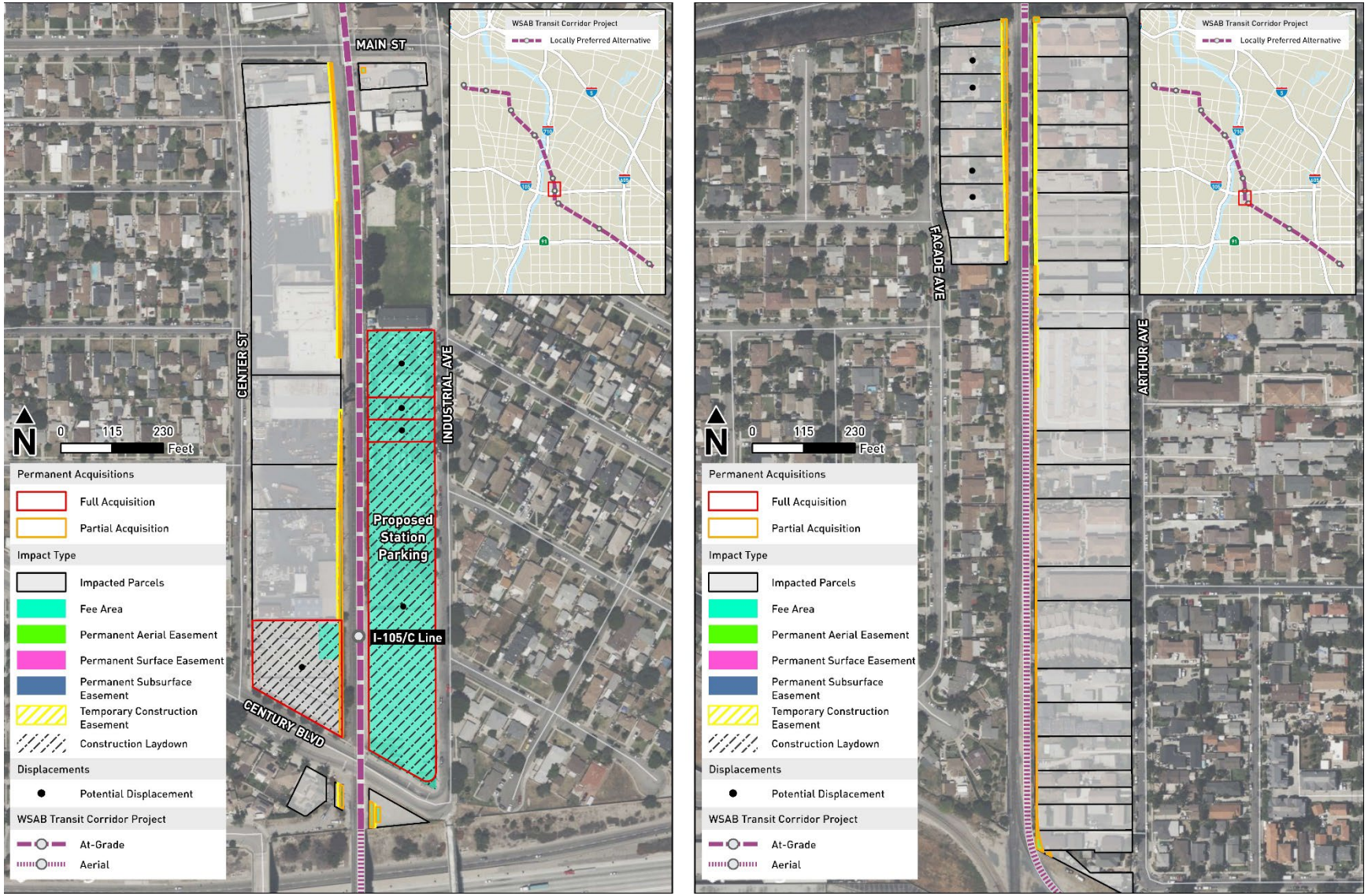
Source: Metro 2024m

Figure 4.3-9. Property Acquisitions for the Locally Preferred Alternative



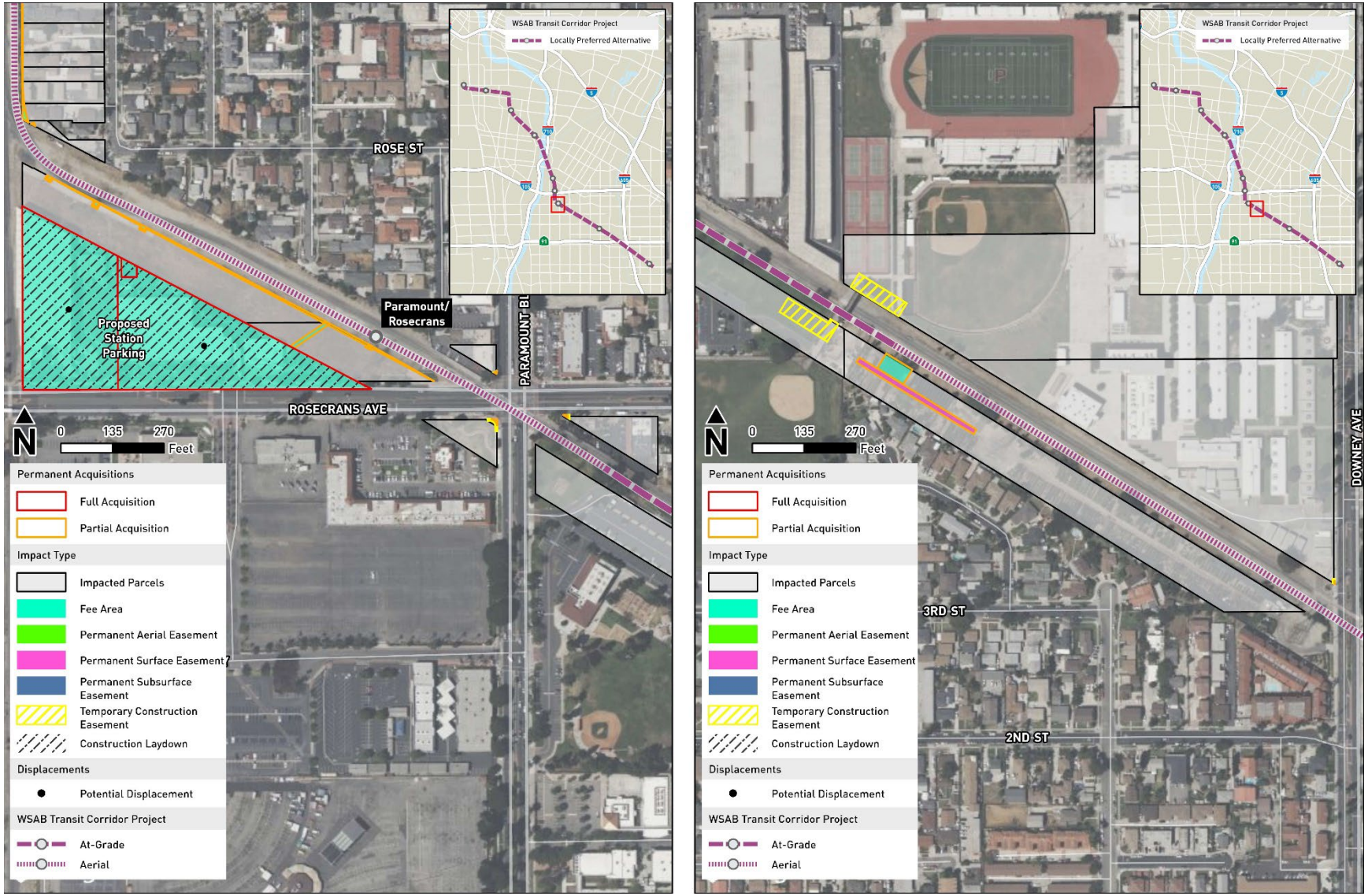
Source: Metro 2024m

Figure 4.3-10. Property Acquisitions for the Locally Preferred Alternative



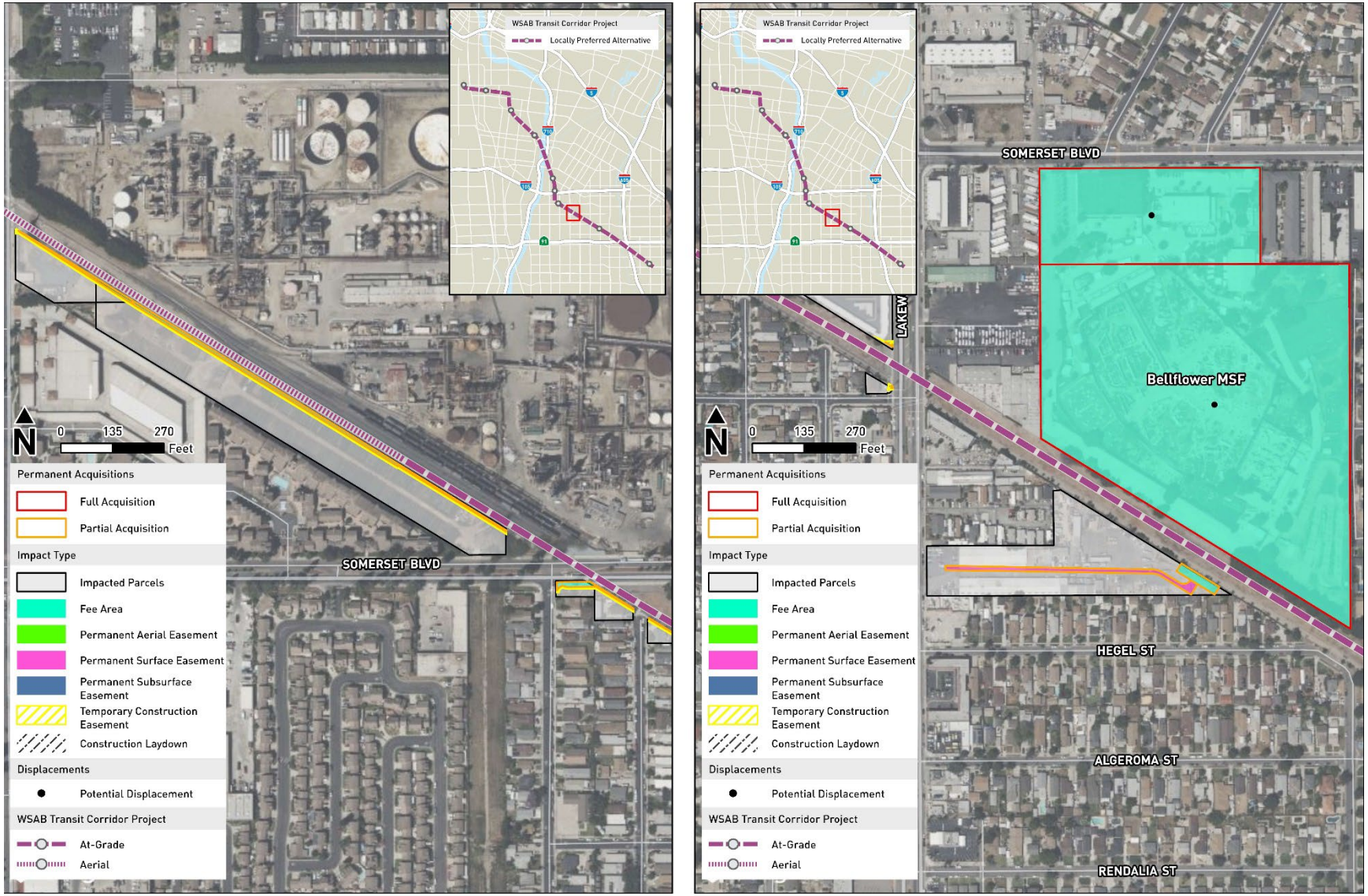
Source: Metro 2024m

Figure 4.3-11. Property Acquisitions for the Locally Preferred Alternative



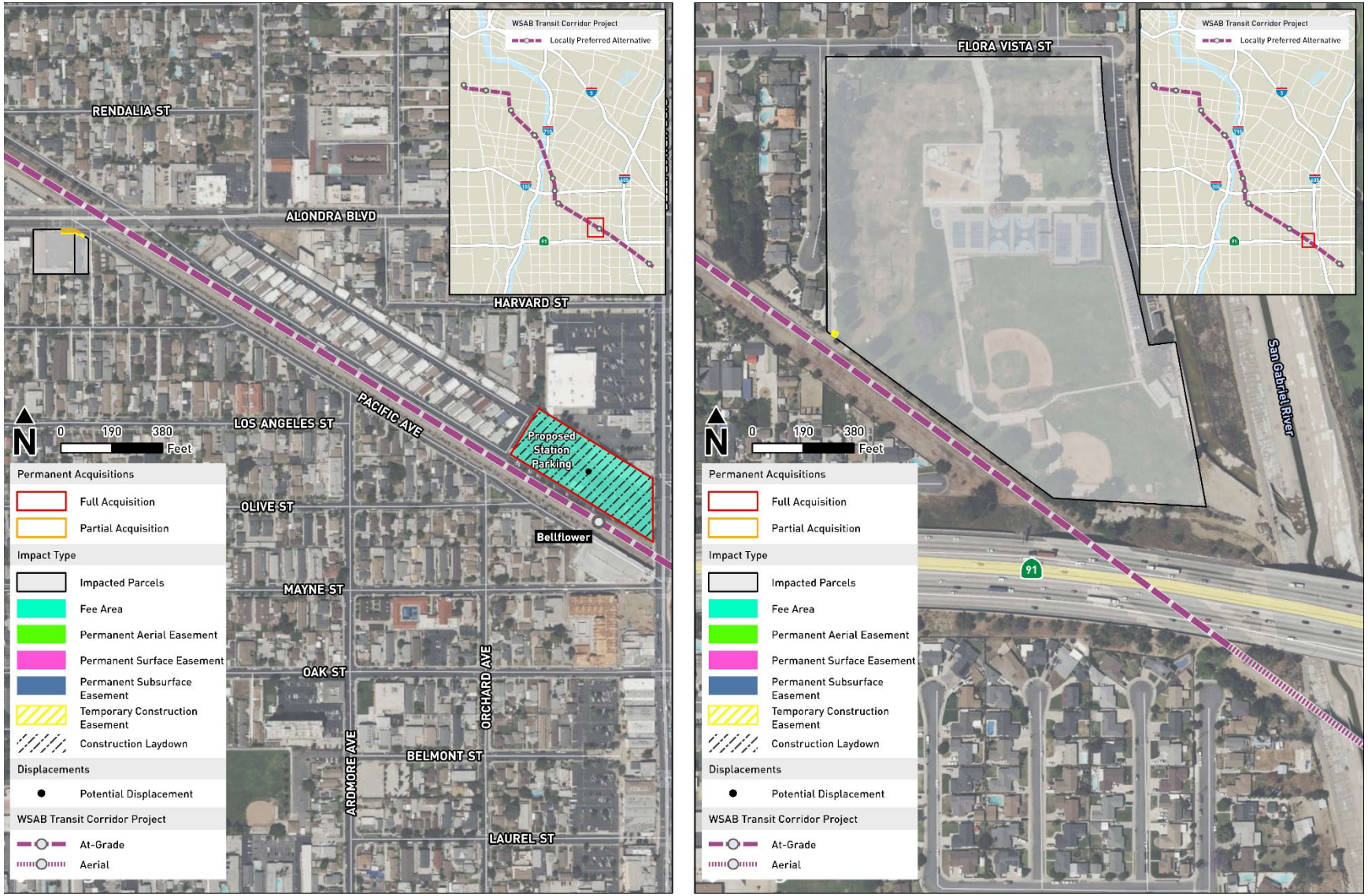
Source: Metro 2024m

Figure 4.3-12. Property Acquisitions for the Locally Preferred Alternative



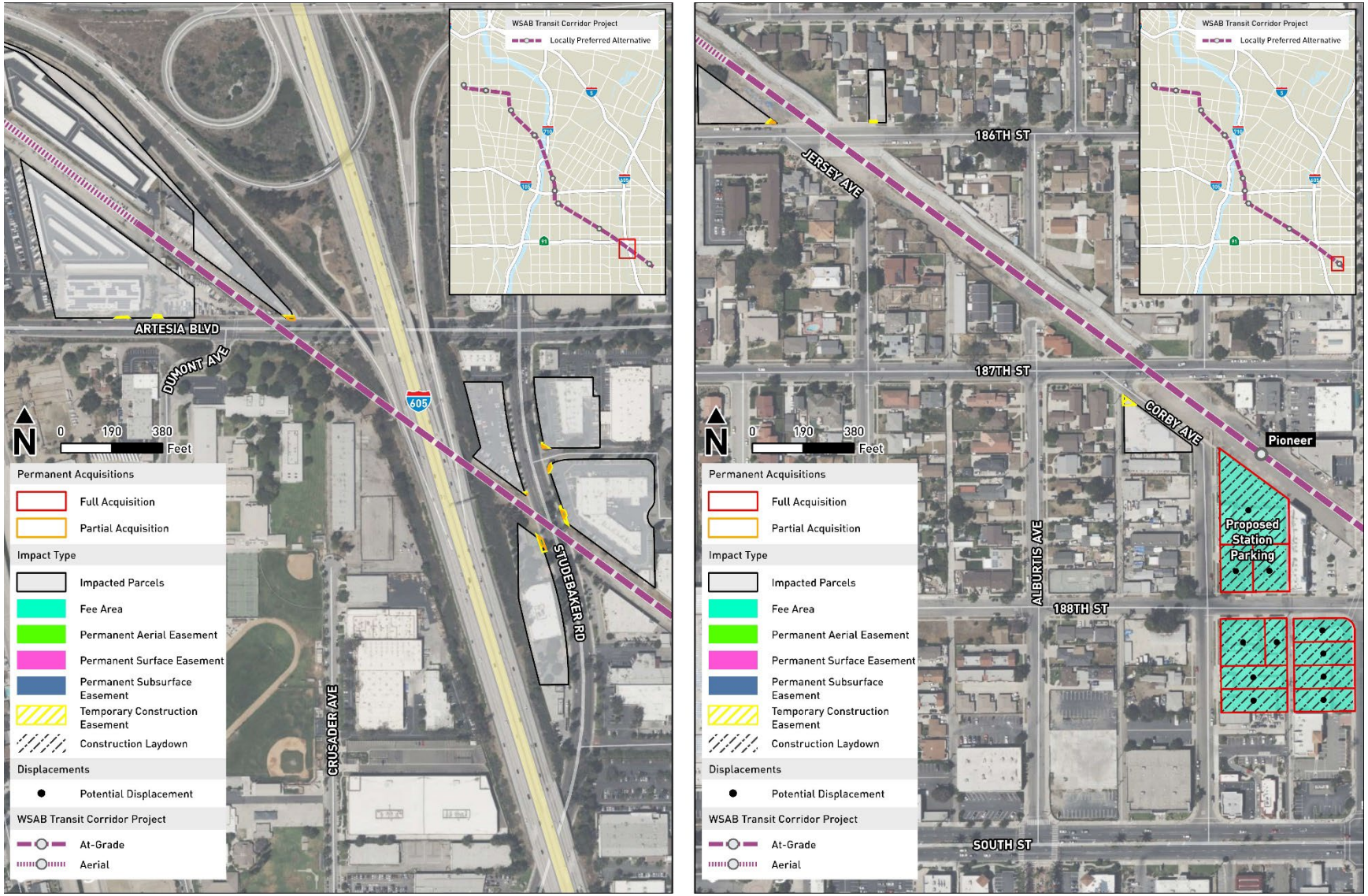
Source: Metro 2024m

Figure 4.3-13. Property Acquisitions for the Locally Preferred Alternative



Source: Metro 2024m

Figure 4.3-14. Property Acquisitions for the Locally Preferred Alternative



Source: Metro 2024m

Displacements

Business Displacements: Business displacements will be required to accommodate components of the LPA, including aerial structures, stations, TPSS sites, and grade crossings. Table 4.3.3 summarizes the number of potential businesses and employees that will be displaced by the LPA in each jurisdiction. The LPA will displace approximately 58 businesses and approximately 368 employees. The LPA and the MSF combined will displace approximately 59 businesses and approximately 443 employees.

Table 4.3.3. Permanent Business and Employee Displacements by Jurisdiction

Jurisdiction	Business Displacement									
	Auto Services	Hotel	Retail	Office	Food Service	Industrial	Plant Nursery	Sports Center	Total	Estimated Employees Displaced [1]
Locally Preferred Alternative										
Los Angeles	5	0	1	0	0	4	0	0	10	71
Huntington Park	0	1	3	4	2	0	0	0	10	33
Cudahy	2	0	1	0	0	0	0	0	3	8
South Gate	10	0	2	0	0	6	1	0	19	141
Paramount	1	0	0	0	0	1	0	0	2	57
Bellflower	1	0	0	0	0	0	0	0	1	10
Artesia	2	0	9	2	0	0	0	0	13	48
LPA Total	***21***	***1***	***16***	***6***	***2***	***11***	***1***	***0***	***58***	***368***
Maintenance and Storage Facility										
Bellflower	0	0	0	0	0	0	0	1[2]	1	75
MSF Total	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***1***	***1***	***75***
LPA + MSF Total	**21**	**1**	**16**	**6**	**2**	**11**	**1**	**1**	**59**	**443**

Source: Metro 2024m
Notes: The design option would not result in business displacements.
[1] Estimated number of displaced employees is based on research using RefUSA and CoStar's Tenant module.
[2] Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business operates as one business. This business will be affected by the MSF site and will result in approximately 75 displaced employees.

Residential Displacements: Full acquisitions of residential properties will be required to accommodate the aerial structure columns and parking facilities. Partial acquisitions of residential properties will be required to accommodate grade crossings, aerial crossings, track alignment, and other ancillary facilities. The partial acquisitions will be minor acquisitions primarily in rear yards of properties adjacent to the rail ROW in which the primary dwelling units are set toward the front of the properties, away from the rail ROW and the area where the acquisition will be required.

Table 4.3.4 summarizes the number of residential units and occupants that will be permanently displaced by the LPA by jurisdiction. The LPA will displace 13 residential units and approximately 47 residential occupants. Residential properties will be affected in the Cities of Los Angeles, Huntington Park, and Artesia. These effects will include:

- Los Angeles: affected to accommodate the aerial columns and structure for the alignment
- Huntington Park: affected to accommodate an at-grade crossing
- Artesia: affected to accommodate the parking facility at the Pioneer Station

Table 4.3.4. Permanent Residential Displacements by Jurisdiction

Jurisdiction	Acquisition Type	Residential Units Displaced			Estimated Occupants Displaced		
		Single-Family Units	Multifamily Units	Total	Single-Family	Multi-family	Total
Los Angeles	Full	1	2	**3**	3	6	**9**
Huntington Park	Full	0	8	**8**	0	31	**31**
Artesia[1]	Full	2	0	**2**	7	0	**7**
Total		**3**	**10**	**13**	**10**	**37**	**47**

Source: Metro 2024m
Notes: [1] Two parcels zoned as residential use will be acquired in the City of Artesia (APN 7039-012-004 and APN 7039-012-012). However, parcel APN 7039-012-012 does not currently contain a single-family residence building and no residents reside on-site. The count above considers this existing condition.

Metro will compensate owners at fair market value to purchase the required property and will compensate owners for damages to the remainder property as applicable. Residents of fully acquired properties will be displaced, and, if eligible, will be provided relocation benefits in accordance with applicable regulations. Residents affected by partial acquisitions may also be eligible for relocation benefits. Partial acquisitions will be analyzed to determine eligible benefits. Further information will need to be obtained during discussions with owners at the time of acquisition, as further discussed directly below under the heading "Replacement and Relocation."

Replacement and Relocation

Business Relocation: An inventory was developed for the LPA of available replacement sites for lease and sale within each city and 6 miles of each affected property based on market conditions and vacancy as of June/July 2023. A "gap analysis" was conducted to identify whether a surplus or deficit of replacement sites are available. The acquisition process cannot begin until after a Record of Decision is issued on the Final EIS, and it is possible that vacancy rates may change at the time of acquisition. Table 4.3.5 summarizes the gap analysis, which determined that a sufficient number of comparable replacement sites may not be available within displacement cities for automotive businesses in the Cities of Los Angeles, South Gate, Cudahy, and Artesia; a food service and a hotel property in the City of Huntington Park; and a nursery property in the City of South Gate. Specifically, the hotel property in the City of Huntington Park is not an extended stay hotel and instead is used for short-term residential stays; therefore, it is treated as a business. The search for similar-sized lots for relocation resulted in no viable options within the city boundaries. Based on 2023 data, there is an insufficient number of potential replacement sites for sale or lease to accommodate these

types of displacements and these uses may not be able to relocate within the same city. As shown in Table 4.3.5, expanding the search to nearby cities shows that a sufficient number of replacement sites are available within 6 miles of the affected location for the automotive businesses in the Cities of Los Angeles, South Gate, Cudahy, and Artesia; and the food service business and hotel property in the City of Huntington Park.

Table 4.3.5. Gap Analysis of Displacements and Available Business Properties

Business Type	No. of Businesses Displaced	Within City Boundary		Within 6 Miles of the Displaced Property	
		Total Properties Available	Size of Surplus	Total Properties Available	Size of Surplus
Los Angeles[1]					
Auto Services	5	2	-3	49	44
Retail	1	34	33	1,212	1,211
Industrial	4	56	52	1,154	1,150
Huntington Park					
Hotel	1	0	-1	10	9
Retail	3	64	61	460	457
Office	4	7	3	481	477
Food Service	2	1	-1	43	41
Cudahy					
Auto Services	2	1	-1	14	12
Retail	1	6	5	316	315
South Gate					
Auto Services	10	1	-9	20	10
Retail	2	19	17	412	410
Industrial	6	130	124	450	444
Plant Nursery	1	0	-1	0	-1
Paramount					
Auto Services	1	12	11	15	14
Industrial	1	25	24	224	223
Bellflower					
Auto Services	1	4	3	15	14
Sports Center	1	0	-1	0	-1
Artesia					
Auto Services	2	1	-1	14	12
Retail	9	17	8	295	286
Office	2	6	4	168	166

Source: Metro 2024m
Notes: [1] Includes the Los Angeles Zip codes of 90001 and 90011 and areas 6 miles from the respective displaced businesses.

However, special property conditions, such as the nursery in the City of South Gate, may have a challenge finding a suitable replacement site to lease at the time of acquisition. GWS Nursery and Supply Company currently leases two large parcels from the City of South Gate, of which one 6-acre parcel will be acquired for construction laydown. A search for similarly sized vacant land for lease was conducted by using available listing services. As of 2023, the search resulted in no viable options for sale or lease within the city boundaries or within 6 miles of the affected property, suggesting that at the time of acquisition, finding suitable replacement sites will be challenging for the nursery property. Metro will provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act and California Relocation Act. Refer to Section 4.3.3.6 for additional information on special relocation considerations.

Residential Replacement: Table 4.3.6 summarizes the inventory and overall median price range of residential units available for sale in the cities that will have residential displacements (i.e., Los Angeles, Huntington Park, and Artesia). Table 4.3.7 summarizes rental inventory, including surrounding cities, as these cities will be able to accommodate residential displacements. Based on 2023 market conditions, sufficient residential replacement sites for sale and rent are currently available in the affected cities. Sufficient supply for residential replacements in the surrounding cities will also be able to accommodate the residential displacements. Unless there is a significant change in vacancy rates at the time of acquisition, there will likely be sufficient replacement sites to relocate all eligible displacees. This analysis does not account for residents currently living in rent-controlled units and relocation to market-rate units.

Table 4.3.6. Inventory of Residential Units for Sale

Jurisdiction	Number of Units [1]				Price Range			
	1- Bed	2- Bed	3- Bed	Total Units	1- Bed	2- Bed	3- Bed	Overall Median Range [1]
Los Angeles [2]								
90011	1	7	8	16	$348,000	$450,000-$1,159,000	$409,888-$1,208,000	$578,106
90058	0	0	0	0	N/A	N/A	N/A	$547,223
Huntington Park	0	0	3	3	N/A	$439,300 - 650,000	$694,500 - $799,000	$619,399
Artesia [3]	0	5	4	9	N/A	$189,000 - $510,000	$265,000 - $1,079,999	$762,955
Total	**1**	**12**	**15**	**28**				

Source: Metro 2024m
Notes:
[1] Based on rental market trends from https://www.zillow.com/rental-manager/market-trends/ June/July 2023 search.
[2] Los Angeles includes the following zip codes: 90011 and 90058.
[3] Calculation assumes that residential units affected by the LPA consist of 2-bedroom and 3-bedroom units only.
N/A = not applicable

Table 4.3.7. Inventory of Residential Units for Rent

Jurisdiction	Number of Units [1]				Median Price[1]			
	1- Bed	2- Bed	3- Bed	Total Units	1- Bed	2- Bed	3- Bed	Overall Median Price
Single-Family Units								
Los Angeles [2]								
90011	17	7	5	29	$600	$2,500	$3,350	$2,666
90058	0	0	0	0	N/A	N/A	N/A	$2,400
Huntington Park	26	5	1	32	$2,080	$2,400	$3,200	$2,075
Artesia	0	2	1	3	$2,695	$2,599	$4,095	$2,900
Total	**43**	**14**	**7**	**64**				
Apartments								
Los Angeles [2]								
90011	16	25	19	60	$1,650	$2,328	$2,986	$2,295
90058	1	1	0	2	$2,095	$2,400	N/A	$3,448
Vernon	1	0	0	1	$2,095	N/A	N/A	$2,095
Huntington Park	26	3	0	29	$1,942	$2,300	N/A	1,878
Paramount	7	10	2	19	$1,592	$2,211	$3,148	$2,425
Bellflower	28	20	1	49	1,649	$2,217	$3,200	$1,779
Downey	43	40	4	87	$1,873	$2,315	$3,270	$2,047
Norwalk	7	14	2	23	$2,111	$2,372	$3,500	$2,298
Artesia	1	2	0	3	$2,112	$2,812	N/A	$2,404
Cerritos	3	4	1	8	$2,919	$2,861	$3,438	$2,861
Lakewood	9	4	2	15	$1,882	$2,494	$2,950	$2,075
North Long Beach	27	21	3	51	$1,830	$2,350	$3,025	$1,962
Total	**169**	**144**	**34**	**347**				

Source: Metro, 2024m
Notes: Calculation assumes that residential units for rent affected by the LPA and require residential replacement consist of 2-bedroom and 3-bedroom units only. No 1-bedroom units for rent are anticipated to be affected or replaced.
[1] Based on June/July 2023 rental market trends from https://www.zillow.com/rental-manager/market-trends.
[2] Los Angeles includes the following zip codes: 90011 and 90058.

Metro will provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act and California Relocation Act. Under NEPA, with compliance with the Uniform Act, California Relocation Act, and other applicable regulations, the LPA will not result in adverse effects related to acquisitions and displacements.

4.3.3.3 Design Option: Close 186th Street

Acquisitions: The design option would not result in the displacement of businesses or residential units. With the implementation of the design option, the design option will net one less permanent impact compared to the LPA without the design option. There would be no change in acquisitions compared to the LPA without the design option.

Displacements: The design option would not displace businesses or residential units. There would be no change in acquisitions compared to the LPA without the design option.

Replacement and Relocation: The design option would not displace businesses or residential units that would require replacement or relocation. There would be no change in acquisitions compared to the LPA without the design option.

4.3.3.4 Maintenance and Storage Facility

Acquisition: The MSF will impact two parcels and result in two full acquisitions (Table 4.3.1). The MSF site is currently developed with the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, which operates as a single business.

Displacements: The MSF will displace the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, which operates as one business, affecting and displacing approximately 75 employees (Table 4.3.3). The site for the MSF does not contain residential units; therefore, no residential displacements are anticipated (Table 4.3.4).

Replacement and Relocation: Comparable replacement sites may not be available for the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business and the business may not be able to relocate within the city or within 6 miles of the affected business (Table 4.3.5). As of 2023, an insufficient number of potential replacement sites for sale or lease exists to accommodate these types of displacements and, therefore, the business may not be able to successfully relocate. Based on the size and specialized use of the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, it will be difficult to relocate the business to another site in the City of Bellflower or surrounding cities. The search could be expanded to Orange or Riverside Counties, but relocating the business a farther distance from the displacement site may cause issues in regard to retaining patrons and employees and may introduce competition if there are similar, well-established businesses in these areas. Thus, attempting to find a suitable relocation site farther from the displacement location may not be viable, making relocation infeasible. No residential units are expected to be displaced. Refer to Section 4.3.3.6 for additional information on special relocation considerations.

Metro will provide relocation assistance and compensation for all identified eligible displaced businesses and residences as required under the Uniform Act and California Relocation Act. Under NEPA, with compliance with the Uniform Act, California Relocation Act, and other applicable regulations, the MSF will not result in adverse effects related to acquisitions and displacements.

4.3.3.5 U.S. Army Corps of Engineers

Acquisition

The LPA alignment will cross three USACE facilities: Los Angeles River just west of I-710, Rio Hondo channel just east of I-710, and the San Gabriel River channel just west of I-605. All three river channels are concrete lined and are operated and maintained by LA County. Operation of the LPA will require public easements within USACE-owned facilities. The acquisition and displacement analysis provided in this section only considers private acquisitions and not public facilities. Metro will coordinate with USACE and LA County in support of the public easements.

Displacements

The LPA will not result in the displacement of USACE facilities.

Replacement and Relocation

The LPA will not displace USACE facilities that will require replacement or relocation.

4.3.3.6 Special Relocation Considerations

Special relocation considerations for the LPA will be primarily related to the plant nursery in the City of South Gate and the sports center in the City of Bellflower with the potentially limited number of replacement sites available. As discussed in Sections 4.3.3.2 and 4.3.3.4, special relocation conditions include the nursery in the City of South Gate and the sports center and BMX business in the City of Bellflower. Cities with higher numbers of displaced businesses may not have sufficient replacement sites within each city to accommodate the anticipated number of displaced commercial or industrial businesses. Replacement sites will need to be sought outside the immediate community and could result in loss of jobs.

In addition to the number of displacements identified, a number of complex relocations could occur, such as potential displacements with specialized equipment requiring special handling, or particular provisions that must be made at the replacement site (such as high-voltage power or high-volume water pipes). The number and complexity of relocations expected to result from the LPA may also provide challenges to Metro in terms of available qualified consultants to provide relocation assistance advisory services. For example, other infrastructure projects occurring in the region that may also require replacement sites could reduce the availability of consultant resources, such as appraisers and relocation specialists, for the LPA.

To address complex relocation issues related to commercial and industrial business displacements, several options may be considered to limit impacts to the displaced business, including, but not limited to, phasing acquisition and relocation activities, providing relocation consulting services, extending the timeframe for relocation activities, and expanding the replacement area to include other nearby cities.

The phasing of acquisition and relocation activities will limit the number of industrial and commercial businesses affected at the same time and will allow the marketplace sufficient time to absorb the influx of businesses searching for replacement sites. As the quantity of replacement sites are limited, flooding the marketplace with displacees seeking to stay within reach of their client base might have the unintended consequence of making it more challenging to find suitable replacement sites. The phasing of acquisition and relocation activities in strategic areas could allow for a higher percentage of businesses to relocate successfully. Ideally, replacement

sites will be close enough to a business' current location to minimize burdens on employees who will need to travel from their homes to the new business location.

Affording additional time during the relocation process to search for replacement sites and staging the relocation process according to when properties will need to be vacated could help with the successful relocation of businesses within, or as close as possible to, displacement sites. Additional time for relocation agents to work with displacees on finding suitable replacement sites and facilitating complex moves will increase the probability of successful relocations.

To address the special needs of certain commercial or industrial displacees, expanding the replacement area to include other nearby cities may increase the chances of finding suitable replacement sites if the additional distance from the displacement site does not cause impacts to the business (such as moving them too far from existing customers or suppliers). This strategy may also identify replacement locations that do not force commercial businesses to compete with similar businesses.

Metro will provide relocation assistance and compensation for identified eligible displaced businesses and residences as required under the Uniform Act and California Relocation Act. Where acquisitions and relocation are unavoidable, the FTA and Metro will follow the provisions of both Acts, as amended. All real property acquired by Metro will be appraised to determine its fair market value. Just compensation will not be less than the approved appraisal for all real property acquired by Metro or used temporarily during construction. Each business and residence displaced as a result of the LPA will be given advance written notice and will be informed of their eligibility for relocation assistance and payments under the Uniform Act.

4.3.4 Project Measures and Mitigation Measures

Metro will provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act, California Relocation Act, and other applicable regulations. This also includes a relocation plan as required by CCR, Title 25, Division 1, Chapter 6 (see Section 4.3.1.1). No project measures or mitigation measures are required for the LPA.

4.3.5 California Environmental Quality Act Determination

4.3.5.1 Threshold DIS-1: Displace substantial numbers of existing people, housing or business, necessitating the construction of replacement housing or replacement business elsewhere?

No Project Alternative

The No Project Alternative would not result in the displacement of residential units and their occupants, or businesses and their employees that would necessitate the construction of replacement units. Therefore, no impacts would occur and mitigation would not be required.

Locally Preferred Alternative

The LPA and MSF will affect a total of 206 parcels and require 50 full acquisitions and 199 partial acquisitions (Table 4.3.1). Property acquisitions for the LPA will be located in the Cities of Los Angeles, Huntington Park, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and in unincorporated LA County (Table 4.3.2). The LPA

and MSF will displace a total of approximately 59 businesses (including automotive services, hotel, retail, industrial/manufacturing, plant nursery, office) and approximately 443 employees (Table 4.3.3)[5]. The LPA will displace 13 residential units and approximately 47 residential occupants (Table 4.3.4). The business and residential acquisitions, displacements, and relocations associated with the LPA are detailed in Section 4.3.3.2.

For relocated businesses, an abundance of replacement sites currently available relative to the number of anticipated displacements suggests that replacement sites will be available in the future. However, a sufficient number of comparable replacement sites may not be available within displacement cities for select businesses, as discussed in Section 4.3.3.2 and as shown in Table 4.3.5. However, nearby cities will have a sufficient number of replacement sites available within 6 miles of the affected locations for the automotive businesses in the Cities of Los Angeles, South Gate, Cudahy, Artesia; and the food service business and hotel property in the City of Huntington Park. The plant nursery property in the City of South Gate may struggle to find a suitable replacement site to lease at the time of acquisition. As of 2023, an insufficient number of potential replacement sites for sale or lease exists to accommodate this type of displacement and the business may not be able to be successfully relocated.

As of 2023, GWS Nursery and Supply Company leases two large parcels from the City of South Gate, of which one 6-acre parcel will be acquired for the LPA. A search for similar-sized vacant land for lease was conducted by using available listing services. The search resulted in no viable options within the city boundaries or within 6 miles of the affected property, suggesting that at the time of acquisition, finding suitable replacement sites may also be challenging for the plant nursery property. Metro will provide relocation assistance and compensation for identified eligible displaced businesses and residences as required under the Uniform Act and California Relocation Act.

Based on 2023 market conditions, replacement sites for residential properties that are for sale or lease were identified in the affected and surrounding cities (Table 4.3.6). Unless there is a significant change in vacancy rates at the time of acquisition, there will likely be sufficient replacement sites to relocate all displacees and construction of new residences will not be required. Therefore, displacement of residential units and their occupants, or businesses and their employees will not necessitate the construction of replacement housing or business. Impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The design option to close 186th Street and keep the 187th Street grade crossing open would not result in the acquisition of businesses or residential units. With the implementation of the design option, the design option will net one less permanent impact compared to the LPA without the design option. Therefore, impacts would be less than significant, and no mitigation measures are required.

[5] This total includes the displacement of the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business that would result in 75 displaced employees. This business will be affected by the MSF site in the City of Bellflower.

Maintenance and Storage Facility

The MSF is currently developed with the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business. The MSF will impact two parcels and require two full acquisitions and no partial acquisitions (Table 4.3.1 and Table 4.3.2). The MSF will displace the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, which operates as a single business, displacing approximately 75 employees (Table 4.3.3). The MSF property does not contain residential units; therefore, no residential displacements are anticipated.

Comparable replacement sites may not be available for the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, and the business may not be able to relocate within the city or within 6 miles of the affected business (Table 4.3.5). Currently, an insufficient number of potential replacement sites for sale or lease exists to accommodate these types of displacements and the business may not be able to successfully relocate. Based on the size and specialized use of the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business, it will be difficult to relocate the business to another site in the City of Bellflower or surrounding cities. Attempting to find a suitable relocation site may require the business to relocate so far from the displacement location that relocation will not be feasible. The search could be expanded to Orange or Riverside Counties, but relocating the business a long distance from the displacement site may cause issues in regard to retaining patrons and employees and may introduce competition from other well-established facilities in these areas. Thus, attempting to find a suitable relocation site may require the business to relocate so far from the displacement location that relocation will not be feasible. Metro will provide relocation assistance and compensation for identified eligible displaced businesses as required under the Uniform Act and California Relocation Act.

4.4 Visual and Aesthetics

This section summarizes the potential adverse effects and impacts on visual character and quality, scenic vistas, light, and glare from the No Build Alternative and LPA, including the design option and MSF. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Visual and Aesthetic Impact Analysis Report* (Metro 2024o).

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, inclusive of refinements to the LPA. The analysis has been updated based on the revised list of historic properties/historical resources identified in Section 4.14 (Historic, Archaeological, and Paleontological Resources) of the Final EIS/EIR as scenic resources. The analysis has also been updated to reflect the refinements in the heights of the aerial structures and soundwalls. This analysis has also been updated to reflect that the Arthur Avenue bridge will no longer require demolition and reconstruction and that the pedestrian bridge between the campuses of Paramount High School will be replaced with a new pedestrian bridge rather than an undercrossing as proposed in the Draft EIS/EIR. The refinements to these visual components will not result in adverse visual and aesthetics effects.

In addition, proposed views (i.e., simulations) have been added of the LPA on Salt Lake Avenue north of Clara Street (Figure 4.4-5), at McClure Avenue (Figure 4.4-7), and Gridley Road (Figure 4.4-9). Additionally, existing and proposed views of the LPA on Randolph Street at Miles Avenue (Figure 4.4-4), Downey Avenue (Figure 4.4-6), and Pioneer Boulevard (Figure 4.4-10) have been updated to reflect the design refinements associated with the LPA, such as the inclusion of

soundwalls on Randolph Street, a taller soundwall and the removal of a support column on Downey Avenue, a taller Pioneer Station parking structure (five stories compared to four in the Draft EIS/EIR) and modification to the median on Pioneer Boulevard (the curb for the median is extended farther north). Refinements also include a signal located at the entrance to the Pioneer Station parking structure, but this is not visible in the proposed view for Pioneer Boulevard (Figure 4.4-10) due to the vantage point of the rendering.

Additional discussion on station design (including signage and public art), soundwalls identified as Mitigation Measures NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls) (particularly soundwall heights), retaining wall and soundwall treatments to deter graffiti, landscape maintenance, and glare (particularly stainless steel and glass elements at station areas) have also been included in this section. Refer to Section 4.7.4.2 for a description of noise mitigation measures, including locations and heights of soundwalls. This section also includes a new Project Measure, VA PM-8 (Residential Screening for Aerial Structures), which was added in response to comments and requires privacy screening along portions of the aerial structure adjacent to the rear of residential properties in the Cities of Paramount, Bellflower, and Cerritos if the soundwall in those locations will not be sufficiently tall to provide similar privacy screening (the measure is described in Section 4.4.4.1).

Section 4.4.4.1 also includes updated text explaining how the LPA will be visually compatible with the Affected Area for visual through implementation of the project measures. Impacts to visual resources and aesthetics from the LPA are unchanged from those presented for Alternative 3 in the Draft EIS/EIR. The LPA will not result in adverse effects related to scenic vistas, scenic resources, visual character and quality, light, and glare.

4.4.1 Regulatory Setting and Methodology

4.4.1.1 Regulatory Setting

Applicable federal, state, regional, and local regulations, plans, and policies regarding visual character and aesthetics were identified. Federal and state regulations include, but are not limited to, the National Historic Preservation Act Section 106 and the California Department of Transportation (Caltrans) *State Scenic Highways Program* (Caltrans 1963). Regional regulations include Metro's MRDC (Metro 2020h); the *Metro Art Program Policy* (Metro 2020g); *Metro Standard/Directive Drawings* (Metro 2017d); and the *Metro Systemwide Station Design Standards Policy* (Metro 2018e). Local regulations include general plans and municipal codes of the affected jurisdictions (i.e., the Cities of Los Angeles, Huntington Park, Vernon, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and Los Angeles County) and the City of Downey *Rancho Business Park Specific Plan* (City of Downey 1989).

4.4.1.2 Methodology

For the purposes of evaluating visual and aesthetic effects, the Affected Area for visual consists of the localized viewsheds for the LPA. A viewshed is a geographical area that is normally visible from an observer's location, including all surrounding points that are in line-of-sight with the location. The viewshed for the LPA includes areas encompassing the entire alignment, station areas, areas acquired for LPA-related infrastructure (e.g., TPSSs, parking facilities, and MSF), adjacent parcels, and any additional parcels that will have views of and across the alignments and LPA-related infrastructure. The Affected Area for visual also includes adjacent street rights-of-way that parallel, intersect, or face the LPA components.

To satisfy NEPA requirements, the visual and aesthetic impact analysis follows principles contained in the FHWA *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015). Characterizing and evaluating the existing visual character and quality of the Affected Area for visual and potential adverse effects to these resources are based on photographs, field observations, project data, and visual simulations of LPA components.

Primary viewer groups within the Affected Area for visual (along and surrounding the alignment and stations) are identified and used to characterize potential viewer sensitivity and the value those viewer groups may place on views and visual elements. Viewer groups that are sensitive to changes in the visual environment are referred to as "sensitive viewers" (residents, tourists, and users of parklands and other public places). These viewer groups are likely to be aware of and concerned about their views and are likely to have expectations of the built environment. Users and employees of commercial, industrial, and office facilities, as well as motorists and bicyclists, are not considered sensitive viewers for the LPA.

To determine the overall effect of the LPA on visual quality, the LPA components are evaluated with regard to compatibility with the existing visual character and viewer groups' sensitivity to changes in the visual environment to determine potential effects to visual quality. The height, mass, form, lighting, and glare of each component are compared to the existing visual character of the built and natural environment in the Affected Area for visual to determine whether the components are visually compatible. LPA components are considered compatible with the visual character of the Affected Area for visual if the components' scale, massing, form, lighting, and glare do not contrast or conflict with the visual elements of the Affected Area for visual. Viewer sensitivity is evaluated based on how viewer groups would react to changes to the visual environment. Viewer sensitivity is ranked as either low (little to no reaction to changes in the visual environment), moderate (notice changes to visual environment but would not be sensitive to the change), or high (highly sensitive to changes in the visual environment and would likely react to the change). Changes in the visual environment that could affect viewer sensitivity include incompatible scale, massing, form, and lighting levels, as well as reflective surfaces that cast glare.

Based on the change to visual character and viewer sensitivity in the Affected Area for visual, the overall visual quality of the LPA is qualitatively categorized as adverse (negatively affect visual quality – viewer groups would be highly sensitive to visual character changes), beneficial (improve the quality of the visual environment – viewer groups would experience beneficial changes), or neutral (have little to no change to the visual environment – viewer group would have low sensitivity to visual character changes). To satisfy CEQA requirements, aesthetic impacts were analyzed in accordance with the CEQA Guidelines. Based on the CEQA Guidelines Section 15387 definition of an urbanized area, jurisdictions within the Affected Area for visual are considered urbanized areas, and a significant impact would occur if the LPA would conflict with applicable zoning and other regulations governing scenic quality. Significant impacts related to light and glare would occur if the LPA would result in new light sources in low-lit areas, new reflective surfaces, or light spillover onto or glare at light-sensitive uses.

4.4.2 Affected Environment/Existing Conditions

The Affected Area for visual is relatively flat with minor changes in elevation and gradually slopes downward in a south-southwesterly direction toward the Pacific Ocean. Elevations range from approximately 175 feet above mean sea level at the northwestern end of the alignment (City of Los Angeles) to approximately 45 feet above mean sea level at the

southeastern end of the alignment (City of Artesia/City of Cerritos). Due to the relatively flat topography, the Affected Area for visual lacks elevated vantage or vista points.

The major visual feature of the Affected Area for visual is the built environment, which consists of a variety of commercial, industrial, public facility, institutional, and residential structures, as well as transportation corridors. Development consists of primarily low-rise structures. Transportation corridors include roadways, freeways (i.e., I-710, I-105 (which is also the Century Freeway-Transitway Historic District), State Route [SR]-91 and I-605), and freight rail (i.e., the Wilmington Branch, La Habra Branch, San Pedro Subdivision, and PEROW). Flood control channels (i.e., Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel) are also within the Affected Area for visual. Freeways, freight rail, and flood-control channels create well-defined visual boundaries and edges, and the rail ROWs create linear open spaces. Within the Affected Area for visual, the I-710, SR-91, and I-605 freeways are elevated on columns or engineered fill, and the I-105 freeway is depressed from the surrounding uses. No local or state-designated scenic highways are located within the Affected Area for visual.

4.4.2.1 Scenic Vistas

No notable scenic views or vistas are located within the Affected Area for visual. None of the views within the Affected Area for visual are considered scenic vistas.

4.4.2.2 Scenic Resources

Scenic resources found within the Affected Area for visual primarily include urban features, such as structures with architectural or historic significance, public art, and park areas that contribute to the distinct visual character of the Affected Area for visual. Table 4.4.1 summarizes the notable scenic resources identified in the Affected Area for visual. No scenic resources are located within the Affected Area for visual for the MSF site.

Table 4.4.1. Scenic Resources in Affected Area for Visual

Scenic Resource and Location[1]	Historical Significance[2]	Sensitive Viewers
Pueblo Del Rio Public Housing Complex Long Beach Ave, Los Angeles	Historic Property/Historical Resource	Residents
6000 Alameda St, Huntington Park	Historic Property/Historical Resource	No sensitive viewers
L & F Machine Company 2110 Belgrave Ave, Huntington Park	Historic Property/Historical Resource	Residents
6101 Santa Fe Ave, Huntington Park	Historic Property/Historical Resource	Residents
2860 Randolph St, Huntington Park	Historic Property/Historical Resource	Residents
Huntington Park High School 6020 Miles Ave, Huntington Park	Historic Property/Historical Resource	Residents
6231 Maywood Ave, Huntington Park	Historical Resource	No sensitive viewers
3477 East Gage Ave, Huntington Park	Historical Resource	No sensitive viewers

Scenic Resource and Location[1]	Historical Significance[2]	Sensitive Viewers
Salt Lake Park 3401 E. Florence Ave, Huntington Park	N/A	Visitors
Cudahy Substation Northeast corner of Salt Lake Ave/Otis Ave, Cudahy	Historic Property/Historical Resource	Residents
LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line City of South Gate	Historic Property/Historical Resource	No sensitive viewers
Los Angeles River Channel City of South Gate	Historic Property/Historical Resource	No sensitive viewers
Los Angeles River Truss Bridge/ Union Pacific Los Angeles River Rail Bridge City of South Gate	Historic Property/Historical Resource	Residents
Rio Hondo Channel City of South Gate	Historic Property/Historical Resource	No sensitive viewers
Southern California Edison Long Beach to Laguna Bell Transmission Line	Historic Property/Historical Resource	No sensitive viewers
Rancho Los Amigos – South Campus 7601 East Imperial Hwy, Downey	Historic Property/Historical Resource	No sensitive viewers
Hollydale Community Park 12221 Industrial Ave, South Gate	N/A	Residents, visitors to the park
Century Freeway-Transitway Historic District I-105 from California Street in El Segundo to Studebaker Road in Norwalk	Historic Property/Historical Resource	No sensitive viewers
"Defiance" by Harold L. Pastorius Jr. – Public Art Sculpture SW corner of Paramount Blvd and Rosecrans Ave, Paramount	N/A	Visitors/tourists
Paramount Park 14400 Paramount Blvd, Paramount	N/A	Visitors
Original Bellflower Pacific Electric Station 16394-16398 Bellflower Blvd, Bellflower	Historic Property/Historical Resource	Visitors
10040 Flora Vista St, Bellflower	Historic Property/Historical Resource	Residents
"Belle" Public Art Cow Statue 10209 Flora Vista St, Bellflower	N/A	Visitors
Ruth R. Caruthers Park 10500 E. Flora Visa St, Bellflower	N/A	Residents

Scenic Resource and Location[1]	Historical Significance[2]	Sensitive Viewers
San Gabriel River Channel	Historic Property/Historical Resource	Residents
Valley Christian Junior High and High Schools 17700 Dumont Ave, Cerritos	N/A[3]	No sensitive viewers
Rosewood Park 17715 Eric Ave, Cerritos	N/A[3]	Visitors
Artesia Historical Museum (Frampton/Dantema House) 18648-18698 Alburtis Ave, Artesia	Historical Resource	Nearby residents, visitors
Old Station #30 18641 Corby Ave, Artesia	N/A[3]	Nearby residents, visitors

Source: Metro 2024o; Metro 2024u; Metro 2023b; City of Los Angeles 2018b; City of Paramount 2019; City of Cerritos 2019
Notes:
[1] The *West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report – Rev 2* (Metro 2023b) and *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Metro 2024u) identified the Randolph Substation on Randolph Street in the City of Huntington Park as a historic property/historical resource. However, this property is not within the viewshed of the LPA because a brick wall along the property line on Randolph Street obstructs views of the Randolph Substation from Randolph Street and the La Habra Branch ROW.
[2] See the *West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report – Rev 2* (Metro 2023b) and *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Metro 2024u) for identified Historic Properties/Historical Resources.
[3] These resources are identified as scenic resources based on the value the resource has to the cities. The resources are not identified as historic properties or historical resources in the *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Metro 2024u) or *West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report – Rev 2* (Metro 2023b).
LA = Los Angeles; LADWP = Los Angeles Department of Water and Power; N/A = not applicable

4.4.2.3 Visual Character and Quality

Visual character and quality within the Affected Area for visual are categorized into the following landscape units: Industrial and Residential Landscape Unit, Industrial Landscape Unit, Residential Landscape Unit, Suburban Residential and Industrial Landscape Unit, and Suburban Residential Landscape Unit. Each landscape unit has a distinct, but not necessarily homogenous, visual character.

Figure 4.4-1 identifies the landscape units along the alignment. Table 4.4.2 summarizes the existing visual character, scenic resources, visual quality, and primary viewer groups for the landscape units and MSF site within the Affected Area for visual.

Figure 4.4-1. Landscape Units

Source: Metro 2024o

Table 4.4.2. Existing Visual Character, Scenic Resources, and Visual Quality, by Landscape Unit

Landscape Unit	Existing General Visual Character, Scenic Resources, and Overall Visual Quality[1]	Primary Viewer Groups
Industrial and Residential	**Visual Character:** Mix of residential and industrial development in low-rise one- and two-story structures; limited amount of commercial uses; utility poles and overhead utility lines are apparent; many of the properties facing rail ROWs have fences or walls along the property line; most of the landscaping is in the front yard of residential properties, while industrial uses either have limited or no landscaping; building materials and colors for industrial structures vary and are inconsistent; Metro A (Blue) Line tracks and freight tracks are located along the Wilmington Branch ROW in the middle of Long Beach Avenue; on Long Beach Avenue, freight tracks are at-grade, while the Metro A (Blue) Line transitions to an elevated railway. **Scenic Resources:** Pueblo Del Rio Public Housing Complex, L & F Machine Company, 6101 Santa Fe Ave, Salt Lake Park **Visual Quality:** Inharmonious, disorderly, and incoherent	Residents, employees, users of Salt Lake Park baseball field and Huntington Park Community Center, motorists, pedestrians
Industrial	**Visual Character:** Mix of large-, mid-, and small-scale industrial development with a limited amount of commercial and residential structures; primarily low-rise structures; structures vary in type and style; limited amount of vegetation; utility poles and overhead utility lines are apparent; billboards within the San Pedro Subdivision ROW at Firestone Boulevard, Rayo Avenue, I-710 freeway, and Garfield Avenue. **Scenic Resources: 6000 Alameda St,** 6231 Maywood Ave, 3477 East Gage Ave, LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line, Rio Hondo channel, Southern California Edison Long Beach to Laguna Bell Transmission Line, Rancho Los Amigos – South Campus, Hollydale Community Park, Century Freeway-Transitway Historic District, San Gabriel River channel, Valley Christian Junior High and High Schools **Visual Quality:** Inharmonious, disorderly, and incoherent	Residents; employees; users of Rio Hondo River Trail, Hollydale Community Park and San Gabriel River Trail; staff and students of Valley Christian Junior High and High Schools; motorists; pedestrians
Residential	**Visual Character:** Mostly residential structures, some commercial structures, and limited amounts of industrial structures; primarily one- and two-story structures; structures vary in building style, size, and color; utility poles and utility lines are apparent; many properties facing rail ROWs have fences or walls along the property line; ornamental landscaping primarily found on residential properties and surface parking lots; inconsistent level of landscaping; La Habra Branch and San Pedro Branch ROWs located in the middle of Randolph Street and Salt Lake Avenue, respectively, giving the perception that the streets on both sides of the rail ROWs are separate roadways; La Habra Branch ROW at-grade with Randolph Street and the surrounding land uses; San Pedro Subdivision ROW elevated from Salt Lake Avenue and adjacent residential properties by several feet. **Scenic Resources:** 2860 Randolph St, Huntington Park High School, Cudahy Substation **Visual Quality:** Some areas can be characterized as harmonious, orderly, and/or coherent, but the overall existing visual quality is inharmonious, disorderly, and incoherent	Residents, employees, motorists, and pedestrians

Landscape Unit	Existing General Visual Character, Scenic Resources, and Overall Visual Quality[1]	Primary Viewer Groups
Suburban Residential and Industrial	**Visual Character:** Mix of low-rise residential uses and large-scale industrial development, with limited commercial uses; utility poles and overhead utility lines are apparent; between Southern Avenue and Los Angeles River, rail ROW is elevated above Salt Lake Avenue and residential properties by approximately 10 feet and at-grade with the adjacent industrial property; billboard within rail ROW on southeast side of the I-710 freeway; transmission towers are a distinct visual element that parallel the PEROW from north of the Paramount Boulevard/Rosecrans Avenue intersection to Somerset Boulevard and are approximately 100 feet tall; rail ROW on north side of Somerset Boulevard splits into multiple tracks, parts of which are used by the adjacent World Energy refinery for oil tank car storage; existing landscaping and decorative wall on north side of Somerset Boulevard partially block and soften views of tank cars within the rail ROW and views of the refinery structures; Bellflower Bike Trail within rail ROW provides consistent landscaping and pedestrian-scale lighting. **Scenic Resources:** Los Angeles River Truss Bridge/Union Pacific Los Angeles River Rail Bridge, Los Angeles River channel, Century Freeway-Transitway Historic District, "Defiance" public art sculpture, Paramount Park **Visual Quality:** Inharmonious, disorderly, and incoherent	Residents, employees, users of Los Angeles River Bike Path and Paramount Park, staff and students at Paramount High School, motorists, pedestrians
Suburban Residential	**Visual Character:** Low-rise residential structures; mix of large- and small-scale, low-rise commercial development; transmission towers are distinct visual element that are approximately 100 feet tall and generally parallel the PEROW between the San Pedro Subdivision ROW and the Paramount Boulevard/Rosecrans Avenue intersection; Bellflower Bike Trail within rail ROW provides consistent landscaping and pedestrian-scale lighting; Artesia Historic District Recreational Trails is a winding trail within the rail ROW that provides regularly spaced pedestrian-scale lighting. **Scenic Resources:** Original Bellflower Pacific Electric Station, 10040 Flora Vista St, "Belle" public art cow statue, Ruth R. Caruthers Park, Rosewood Park, Artesia Historical Museum (Frampton/Dantema House), Old Station #30 **Visual Quality:** Some areas can be characterized as harmonious, orderly, and/or coherent, but the overall existing visual quality is inharmonious, disorderly, and incoherent	Residents, employees, users of Bellflower Bike Path and informal equestrian trail, users of Artesia Historic District Recreational Trails, visitors of the Artesia Historical Museum and Old Station #30, motorists, pedestrians

Landscape Unit	Existing General Visual Character, Scenic Resources, and Overall Visual Quality[1]	Primary Viewer Groups
MSF Site Suburban Residential and Industrial Landscape Unit	**Visual Character:** Privately owned sport activity center for paintball and airsoft currently on-site; tall trees and vines along easterly perimeter obstruct view of the site from residential uses; vegetation along northerly and southerly perimeters of site partially obstructs views of the site; surrounded by low-rise industrial, commercial, and residential structures. **Scenic Resources:** None **Visual Quality:** Inharmonious, disorderly, and incoherent along Somerset Blvd and PEROW; harmonious, orderly, and coherent along easterly portion of Affected Area for visual	Residents, employees, motorists, pedestrians

Source: Metro 2024o
Notes:
[1] "Overall Visual Quality" follows principles contained in the FHWA's *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015)
Visual quality definitions:
Harmonious = Visual elements associated with the natural environment that, when combined, generally go well with each other (visually compatible) or are visually pleasing.
Inharmonious = Visual elements associated with the natural environment that, when combined, do not contribute to a pleasant environment or are visually incompatible.
Orderly = Visual elements associated with the built environment that, when combined, usually result in a sense of visual order and are visually compatible with each other.
Disorderly = Visual elements associated with the built environment that are arranged in a manner that lacks a sense of order or pattern or are visually incompatible with each other.
Coherent = Visual elements in the project environment (e.g., project area or project corridor) that are arranged in a manner that are visually consistent and compatible with each other.
Incoherent = Visual elements in the project environment that are not visually consistent or compatible with each other.
LA = Los Angeles; LADWP = Los Angeles Department of Water and Power; MSF = maintenance and storage facility; ROW = right-of-way; PEROW = Pacific Electric Right-of-Way

4.4.2.4 Light

Existing nighttime lighting sources typically emanate from streetlights, vehicle lights, building entrance lights, general illumination from lights shining through windows of structures, the Metro A (Blue) and C (Green) Line stations and light rail vehicles (LRVs), freight trains along the rail ROWs, surface parking lots, and pedestrian-scale lighting along the Paramount and Bellflower Bike Trails and Artesia Historic District Recreational Trails. Nighttime lighting in the industrial and residential areas is generally lower compared to commercial areas. Lighting along the Bellflower Bike Trail illuminates the rail ROW between Somerset Boulevard and Ruth R. Caruthers Park. Where the rail ROW extends between properties north of Somerset Boulevard, nighttime lighting is limited since no lighting is provided within the rail ROWs, except along the Paramount Bike Trail and when freight trains travel along the railroad tracks. South of Somerset Boulevard, nighttime lighting is limited where rail ROW extends between properties, except along the Bellflower Bike Trail.

4.4.2.5 Glare

Glare is a common phenomenon in Southern California, primarily due to the occurrence of a high number of days per year with direct sunlight and the highly urbanized nature of the region, resulting in a large concentration of reflective surfaces. The majority of existing structures in the Affected Area for visual are comprised of non-reflective materials, such as concrete, stucco, and plaster. Parked vehicles are a large source of glare during the daytime from sunlight being reflected off windshields and other surfaces. Nighttime glare can occur from a variety of light sources not aimed downward, such as lighting from recreational fields and commercial and residential structures. These sources of glare are typical of the Affected Area for visual.

4.4.3 Environmental Consequences/Environmental Impacts

4.4.3.1 No Build Alternative

The No Build Alternative would not degrade the visual character and quality of the project corridor because the other identified regional and local projects would generally occur within existing transportation corridors or on individual sites that are associated with transportation. No scenic vistas have been identified within the Affected Area for visual where the No Build Alternative projects are proposed. Additionally, nighttime lighting levels and sources of light and glare would remain similar to existing conditions. Existing lighting from the Metro A (Blue) Line LRVs and freight trains traveling within the Wilmington Branch ROW, La Habra Branch ROW, San Pedro Subdivision ROW, and PEROW would not change. Each project to be built under the No Build Alternative would be required to undergo separate environmental review to determine the individual project's environmental effects and mitigation, as necessary. The visual changes associated with these projects would not result in visual changes beyond those considered for these projects. Under NEPA, the No Build Alternative would not result in adverse effects related to the visual character and quality of the Affected Area for visual.

4.4.3.2 Locally Preferred Alternative

The LPA will introduce new visual elements, including new LRT double tracks, overhead catenary system, fences, retaining walls, soundwalls (see Mitigation Measures NOI-1 [Soundwalls] and NOI-5 [Freight Track Relocation Soundwalls] in Section 4.7.4.2 of the Noise and Vibration Section), ventilation structures, train control and communication houses, TPSSs, radio antennas, radio houses, aerial structures, bridges, a new tunnel under the I-710 freeway, station platforms, station canopies, station and LRV lighting, and station amenities (e.g., ticket

vending machines, benches, trash receptacles, bike racks, lockers, and artwork). The height of various LPA components is included in Appendix C, System Components and Ancillary Facilities, of this Final EIS/EIR. The MRDC and Standard/Directive Drawings or equivalent will be used to design the stations and its amenities to be sensitive to the specific urban context for each station area. The MRDC and Metro *Systemwide Station Design Standards* or equivalent will also be used in the design and selection of landscaping to improve the character of the area. In addition, artwork will be integrated into the station design per the *Metro Art Program Policy* and will follow the MRDC and Metro Systemwide Station Design Standards or equivalent. Elevated stations will also include elevators, escalators, and stairways.

The LPA has the potential to visually change the Affected Area for visual by removing landscaping and billboards, demolishing structures, modifying existing and introducing new grade crossings at street rights-of-way, permanently closing 187th and 188th Streets in Artesia, and developing parking facilities. The LPA's effect on visual character and quality will be most visible where the alignment parallels and LPA components face a street right-of-way and along the Paramount and Bellflower Bike Trails.

The LPA includes the following landscape units: Industrial and Residential, Industrial, Residential, Suburban Residential and Industrial, and Suburban Residential. The location of each landscape unit is shown in Figure 4.4-1 and described in Table 4.4.2. Table 4.4.3 through Table 4.4.7 detail the potential effects to the visual character and quality in each landscape unit. Based on visual compatibility and viewer sensitivity, the overall visual quality of the LPA was qualitatively categorized as adverse, neutral, or beneficial. The LPA's effects on the visual environment are summarized in the following text.

Industrial and Residential Landscape Unit: This landscape unit is located in the Cities of Los Angeles, Huntington Park, Vernon, and Bell, and no stations are located in this landscape unit. The alignment within the Industrial and Residential Landscape Unit will be aerial along Long Beach Avenue and where the La Habra Branch ROW intersects with the San Pedro Subdivision ROW, and at-grade within the rail ROWs in all other portions of this landscape unit. The northern portion of the Slauson/A Line Station area is part of the Industrial and Residential Landscape Unit, while the southern part of the station area is part of the Industrial Landscape Unit. Sensitive viewers in the Affected Area for visual for the Industrial and Residential Landscape Unit include residents and users of Salt Lake Park.

Table 4.4.3 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Industrial and Residential Landscape Unit. Figure 4.4-2 depicts the change in visual character and quality of the Affected Area for visual on Salt Lake Avenue at the Huntington Park Community Center. The LPA components will be compatible and fit with the visual character of the Industrial and Residential Landscape Unit. The LPA components will be designed to fit the urban context and will be consistent with the scale and massing of the surrounding structures. Nighttime lighting levels in the Affected Area for visual will not significantly increase, and the effects of glare will be similar to existing conditions. Viewer sensitivity in this landscape unit will be low as the components will be consistent with and will not detract from the visual character and existing elements of the Affected Area for visual due to the mixed industrial and residential nature of the landscape unit. The LPA will not change the natural topography of the Affected Area for visual and will not alter or obstruct views of scenic resources located within this landscape unit. Given that the LPA components will be visually compatible with the visual character of the Affected Area for visual and viewer sensitivity will be low, the overall change in visual quality for the Industrial and Residential

Landscape Unit will be neutral. Therefore, adverse visual effects are not expected in this landscape unit.

Industrial Landscape Unit: This landscape unit is located in the Cities of Huntington Park, Cudahy, South Gate, Downey, and Cerritos, and unincorporated Florence-Firestone. The alignment in the Industrial Landscape Unit will be aerial from Randolph Street to north of Gage Street and from Ardine Street to Southern Avenue. The alignment will be at-grade with the surrounding uses in all other areas. Sensitive viewers are generally limited to users of Hollydale Community Park, residents along Industrial Avenue facing Hollydale Community Park, and residents along Center Street and Industrial Avenue facing the I-105/C Line Station parking facility.

Table 4.4.4 summarizes the potential effects to the visual character, viewer sensitivity, and visual quality in the Industrial Landscape Unit. Figure 4.4-3 depict the change in visual character and quality at the southwesterly driveway to the Firestone Station. The LPA components will be compatible and fit with the visual character of the Industrial Landscape Unit. The LPA components will also fit the urban context and will be consistent with the scale and massing of the surrounding structures. The natural topography of the Affected Area for visual will not be altered. The level of nighttime lighting and the effects of glare in the Affected Area for visual will not significantly increase. Viewer sensitivity in this landscape unit will be low as the components will be consistent with and will not detract from the visual character and existing elements of the Affected Area for visual. Given that the LPA components will be visually compatible with the visual character of the Affected Area for visual and viewer sensitivity will be low, the overall change in visual quality will be neutral. Therefore, no adverse visual effects are anticipated in this landscape unit.

Table 4.4.3. LPA Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Industrial and Residential Landscape Unit

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Station Areas ▪ Slauson/A Line Station	**Compatible** ▪ Station will be on aerial structure in area with low-rise structures; scale, form, and massing similar to and consistent with the existing Metro A (Blue) Line Slauson Station; will be consistent with, will fit with, and will not detract from the visual character and context of Affected Area for visual. ▪ Station design, including signage, will follow MRDC or equivalent, Metro's *Systemwide Station Design Standards*, and Standard/Directive Drawings. ▪ Public art will be integrated into station design to improve visual character per MRDC or equivalent, Metro Systemwide Station Design Standards, and Metro *Art Program Policy*. ▪ Circulation elements connecting to the Metro A (Blue) Line Station will be designed to retain as much of the existing artwork as possible. ▪ Station amenities and signage will be designed and made of materials that deter graffiti. ▪ Signage will include station identification signs, wayfinding signs, and electronic signs that provide real-time arrival information. Signs will be integrated into the station design, canopies, and other structures or elements that are part of the LPA. Signage is not expected to degrade the visual character of the Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting, including illuminated signs, not expected to extend beyond station area and will not spillover onto adjacent properties. Type and level	**Low** ▪ Station (including canopies, elevators, escalators, and stairs) will be visible in the foreground. ▪ No sensitive viewers in the Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes due to the mixed industrial and residential nature of the Affected Area for visual. No scenic resources in Affected Area for visual.	**Neutral** ▪ Visible elements and lighting levels at station area will be compatible with the industrial and residential character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	of lighting will be comparable to those that are currently present in the Affected Area for visual and will not affect visual character. **Glare:** LPA components will not create new sources of glare and will not affect the visual character around the station areas. Stainless steel for certain station elements (e.g., columns, railings, and walls), glass panels, and glass canopies will be used. Glass canopies will be placed horizontally above station, and canopy angles will not create new sources of glare or affect the visual character around the station areas. Vertical stainless-steel elements and glass panels will be dulled so that new sources of glare will not be created. Materials used for signs will not cast glare.		
LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles	**Compatible.** ▪ Similar visual elements are in Affected Area for visual: LRT and freight tracks are within Wilmington Branch ROW; freight tracks are within La Habra Branch and San Pedro Subdivision ROWs; Metro A (Blue) Line OCS poles and associated overhead wires located along Wilmington Branch ROW. Utility poles and overhead wires are along La Habra Branch and San Pedro Subdivision ROWs. ▪ Figure 4.4-2 depicts how OCS poles and overhead wires will change the visual character of the Affected Area for visual for this landscape unit; LPA components and scale will be consistent with existing utility poles and wires; will not conflict with visual character of Affected Area for visual. **Scenic Resources:** Visual character of scenic resources will not be altered. Scenic resources compatible with mixed industrial and residential	**Low.** ▪ Visible in foreground; will not detract or obstruct existing views of Salt Lake Park). ▪ Sensitive viewers will have little to no reaction to changes associated with LPA component as similar visual elements exist in Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed; visual character of scenic resources will not be altered. **Lighting:** Lighting from LRVs traveling along LRT tracks and utility poles will be directed away from residential uses and other light-sensitive uses; LRV lighting is expected to be comparable to lighting from existing buildings, vehicles, LRVs from the existing Metro A (Blue) Line,	**Neutral.** ▪ Visual quality will remain similar to existing conditions; will not detract from visual character and quality of Affected Area for visual. ▪ Views of scenic resources will remain available. Viewers will have little to no reaction to the changes. Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	character; similar resources are in the viewshed of scenic resources. **Lighting:** No lighting for OCS poles and overhead wires. If utility poles associated with the LRT have lights, the light intensity will be comparable to lighting levels of the surrounding area. Light intensity from LRVs traveling along LRT tracks and utility poles is expected to be comparable to lighting from existing buildings, vehicles, LRVs from the existing Metro A (Blue) Line, and freight trains along the rail ROWs. **Glare:** LRVs along tracks not a substantial source of glare. Materials to be used for LPA components will not create new sources of glare.	and freight trains along the rail ROWs and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	
Fences and Retaining Walls ▪ Along at-grade portions that parallel a street ROW Low retaining walls with fences on top of retaining walls where rail ROW is slightly elevated from the adjacent street	**Compatible.** ▪ Properties facing rail ROWs currently have fences/walls along the property lines; fences and combination of retaining walls and fences along rail ROWs will be 6 feet tall. ▪ Similar visual elements in area; will not degrade overall visual character and quality of the Affected Area for visual. Scale and form will be consistent and fit with mixed industrial and residential character of Affected Area for visual. ▪ Per MRDC, retaining walls will be treated to prevent defacement and landscaping will be provided where feasible as a long-term deterrent to graffiti. When plantings on walls are precluded, architectural treatments, such as bas-relief and decorative form-liners, will be used. ▪ Figure 4.4-2 depicts the change in visual character for this landscape unit at Salt Lake Ave where retaining walls will be placed under fences along the edge of the San Pedro	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual as similar visual elements are in area. ▪ Sensitive viewers will have little to no reaction to the fences and walls as similar visual elements already exist in the Affected Area for visual. **Scenic Resources:** ▪ Views of Salt Lake Park from residential uses on east side of San Pedro Subdivision ROW currently obstructed by existing walls along property line facing rail ROW. LPA component will not further obstruct views of the park. ▪ Users of Salt Lake Park and Huntington Park Community Center will see retaining walls with fencing on top instead of parking spaces	**Neutral.** ▪ Character and quality of Affected Area for visual will not change as similar visual elements currently exist in Affected Area for visual. ▪ Views of scenic resources will remain available. Viewers will have little to no reaction to the change. ▪ Lighting levels similar to existing conditions and will not affect viewer sensitivity. No new sources of glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Subdivision ROW. View is looking southeast from the Huntington Park Community Center. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting and Glare:** LPA components will not create new sources of light and glare.	within San Pedro Subdivision ROW (Figure 4.4-2). Affected Area for visual has similar visual elements. **Lighting and Glare:** LPA components will not create new sources of light and glare.	
Soundwalls ▪ 4-foot-tall soundwall – On aerial structure at northern terminus (at and north of 57th Street) – City of Los Angeles ▪ 6-foot tall soundwall – On aerial structure at Randolph St from Hollenbeck St to San Pedro Subdivision ROW – City of Huntington Park ▪ 8-foot-tall soundwall – At-grade along Randolph St, Cottage St to Santa Fe Ave – City of Huntington Park – At-grade along Salt Lake Ave – Cities of	**Compatible.** ▪ Similar visual elements in Affected Area for visual as properties facing the rail ROWs currently have walls along the property lines. ▪ At the northern terminus, portions of the existing retaining walls that support the Metro A (Blue) Line block views of the other side of the Wilmington Branch ROW. The LPA will be an aerial alignment supported by columns in this area. Soundwalls will be on the aerial structure and will not obstruct additional views. See "Aerial Structure" for further discussion. ▪ New soundwalls at-grade along Randolph St will obstruct views of La Habra Branch ROW and industrial uses across from Randolph St. ▪ Views of San Pedro Subdivision ROW will remain available along Salt Lake Ave (south of Bell Ave) and at Salt Lake Park and Huntington Park Community Center. Views generally will be obstructed at residential uses, including mobile home community, but visible at industrial uses north of Bell Ave. ▪ Scale and massing of soundwalls along Long Beach Ave consistent with existing aerial structure for Metro A (Blue) Line and adjacent low-rise structures. ▪ Although soundwalls along Randolph St will be taller than the existing walls in the Affected Area for visual, scale and massing of soundwalls will	**Low.** ▪ Visible in foreground; will not detract from industrial and residential character and quality of the Affected Area for visual as similar elements are in Affected Area for visual. ▪ Sensitive viewers (residents and users of Salt Lake Park) will have little to no reaction to the change due to mixed industrial and residential character and similar visual elements in the Affected Area for visual. ▪ Sensitive viewers (residents) along Randolph St have existing views of the railroad tracks along the La Habra Branch ROW and industrial uses across from the rail ROW; new views will include a soundwall that will block views of industrial uses. Soundwall will not detract from existing views and visual character of the Affected Area for visual. ▪ Residents on the east side of San Pedro Subdivision ROW will continue to have limited to no views of the rail ROW; existing walls on the west side of Salt Lake Ave along the easterly perimeter of the rail ROW currently obstruct views.	**Neutral.** ▪ Mixed industrial and residential character and quality of Affected Area for visual will not change as it will be a similar scale as the surrounding structures. ▪ Viewers will have little to no reaction to the change due to the mixed industrial and residential character. Soundwall will limit amount of LRV light that spills over onto adjacent properties.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Huntington Park and Bell ▪ 10-foot tall soundwall – At-grade along Randolph St between Plaska Ave and Hollenbeck St (at-grade with industrial uses, above grade from residential uses) – City of Huntington Park ▪ 12-foot tall soundwall – At-grade along Randolph St between State St and Plaska Ave – City of Huntington Park ▪ See Section 4.7.4, Mitigation Measures NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls)	be consistent with surrounding low-rise structures. ▪ Soundwalls will be at similar height as the existing walls on the east side of San Pedro Subdivision ROW along Salt Lake Ave; will not detract from the existing views and visual character of the Affected Area for visual. ▪ Soundwalls will fit with mixed industrial and residential character and context of Affected Area for visual. ▪ With the placement of soundwalls along Randolph St, residences along Randolph St will no longer be able to see industrial uses across from Randolph St and will see a retaining wall within the rail ROW. The scale of the aerial structure will be consistent with surrounding low-rise structures. ▪ North of Bell Ave, soundwalls along Salt Lake Ave will block views of the San Pedro Subdivision ROW along Salt Lake Ave from the mobile home community and some industrial uses on the west side of the street. Views of the rail ROW from residential area on the east side of the rail ROW is currently not available due to walls that separate the residential properties from the rail ROW and will continue to not be visible at residential area with implementation of soundwalls. ▪ South of Bell Ave, soundwalls on Salt Lake Ave (across the street from Salt Lake Park and Huntington Park Community Center), will be constructed adjacent to the existing walls along the rear property lines of residential properties that adjoin the rail ROW. Views of the rail ROW will remain available along Salt Lake Ave, Salt Lake Park, and Huntington Park Community	**Scenic Resources:** ▪ Will not obstruct views of Pueblo Del Rio Public Housing Complex and 6101 Santa Fe Ave from residential properties. ▪ Residents south of Randolph St will no longer see L & F Machine Company; however, residents will have little to no reaction to the change due to the industrial character of the building; soundwall will not detract from the mixed industrial and residential character of the Affected Area for visual; and visual character of scenic resource will not be altered. Views will remain available on the north side of Randolph St and on Albany St. ▪ Soundwall will not obstruct views of Salt Lake Park. San Pedro Subdivision ROW is across the street from Salt Lake Park and Huntington Park Community Center, where existing walls along the rear property line of adjacent residential properties currently limit views from the residential area (Figure 4.4-2). **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto areas with light-sensitive users.	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Center. The soundwall will be at a similar height as the existing walls along the rear of residential properties and will not detract from the existing views and visual character of the Affected Area for visual. ▪ Per MRDC, soundwalls will be landscaped, as appropriate, for graffiti management. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto adjacent properties.		
Radio Houses and TC&C Houses	**Compatible.** ▪ Consist of small buildings; consistent with scale, massing, and form of the surrounding low-rise structures; will not degrade overall visual character and quality of Affected Area for visual; will fit with the mixed industrial and residential character and scale of Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not alter visual character and quality of Affected Area for visual. ▪ Sensitive viewers with views of radio houses and TC&C houses (residents) will have little to no reaction to the change as these LPA components will be compatible with scale, massing, and form of surrounding low-rise structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction to the change. No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
TPSS	**Compatible.** ▪ Scale, height, massing, and form consistent with low-rise structures in Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low**. ▪ Visible in foreground; will not detract from mixed industrial and residential character and quality of Affected Area for visual. Located away from Salt Lake Park. ▪ Sensitive viewers with views of TPSS will have little to no reaction to the change as TPSS are on industrial and commercial properties, and in San Pedro Subdivision ROW; will be similar in scale, massing, and form of surrounding low-rise structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Consistent with visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change as TPSSs are on industrial properties, commercial properties, and within the San Pedro Subdivision ROW. No new sources of light and glare will be created.
Aerial Structures **<u>~32 feet height (~36 feet with soundwall)</u>** ▪ Long Beach Ave south of 55th St – City of Los Angeles ▪ Randolph St/San Pedro Subdivision ROW – City of Huntington Park ~32 feet height (~38 feet with soundwall) ▪ Randolph St/San Pedro Subdivision ROW – City of Huntington Park	**Compatible** **<u>Long Beach Ave – City of Los Angeles:</u>** ▪ Aerial structure will be supported on columns. Straddle bents from the northern terminus at 55th St to Holmes Ave; will fit with the mixed industrial and residential character and context of Affected Area for visual. ▪ Existing aerial structure for Metro A (Blue) Line located along Long Beach Ave south of 55th St and will parallel alignment. ▪ Height of aerial structure (including the 4-foot-tall soundwall on aerial structure) will be consistent with scale of the surrounding low-rise structures and adjacent Metro A (Blue) Line.	**Low.** ▪ Visible in foreground; will not detract from mixed industrial and residential character and quality of Affected Area for visual. ▪ Along Long Beach Ave, aerial structures will be located on columns. ▪ Sensitive viewers (residents) will have little to no reaction to the change as the aerial structure will be consistent with massing and visual character of the Affected Area for visual. ▪ **Scenic Resources:** Aerial structure not within viewshed of L & F Machine	**Neutral.** ▪ Mixed industrial and residential character and quality of Affected Area for visual will not change. ▪ Viewer groups will have little to no reaction to changes as the aerial structure will be consistent with the visual character of the Affected Area for visual. ▪ LRV lighting will not alter visual character and will not adversely affect sensitive viewers.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
~70 feet in height Slauson/A Line Station (includes elevator shafts and pedestrian bridge that will connect the existing Metro A (Blue) Line Slauson Station to the Slauson/A Line Station) – City of Los Angeles and Florence-Firestone Community	– Aerial structure at Slauson/A Line Station will be consistent in massing, form, and material of the adjacent Metro A (Blue) Line, as well as visual character and quality of Long Beach Ave right-of-way, Wilmington Branch ROW as a transportation corridor, and the surrounding industrial area. Randolph St/San Pedro Subdivision ROW: ▪ Aerial structure will be new visual element; will be supported by retaining walls as the structure rises/descends around Hollenbeck St and Bissell St. ▪ Residences will now see a retaining wall at San Pedro Subdivision ROW; however, scale and massing of aerial structure will be consistent with surrounding low-rise structures. **Scenic Resources:** Aerial structure not within viewshed of L & F Machine Company, 6101 Santa Fe Ave, and Salt Lake Park. Visual character of Pueblo Del Rio Public Housing Complex will not be altered since aerial structure will be compatible with the mixed industrial and residential setting, the aerial structure associated with the Metro A (Blue) Line, and views of the aerial structure from this scenic resource is at an angle. **Lighting:** No lighting for aerial structures. Lighting will primarily emanate from LRVs and is not expected to extend beyond aerial structures. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	Company, 6101 Santa Fe Ave, and Salt Lake Park. At Pueblo Del Rio Public Housing Complex, viewer sensitivity will not be affected since the aerial structure will be compatible with the mixed industrial and residential setting, the aerial structure associated with the Metro A (Blue) Line, and views of the aerial structure from this scenic resource is at an angle. **Lighting:** No lighting for LPA component. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	New sources of glare will not be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Landscape and Billboard Removal	**Compatible** **Landscaping:** ▪ No vegetation within the Wilmington Branch ROW along Long Beach Ave; limited vegetation within La Habra Branch and San Pedro Subdivision ROWs; landscape removal not expected to degrade visual character of Affected Area for visual; existing vegetation does not beneficially contribute to visual character of rail ROWs, which are actively used by freight trains and Metro A (Blue) Line within the Wilmington Branch ROW and by freight trains within the La Habra Branch and San Pedro Subdivision ROWs. ▪ Landscaping to be installed along the LPA will follow MRDC, which requires landscape design to minimize maintenance. Landscaping that requires intensive maintenance will not be used, and plants that attract rodents and "nuisance" insects (such as white flies), stain pavement or produce excessive litter, will be avoided. **Billboard:** Removal of billboard at Long Beach Ave/Slauson Ave will not alter the visual character of the Affected Area for visual as the visual environment surrounding the billboard is primarily industrial and the billboard contributes to the disorderliness and does not enhance the visual character of the Affected Area for visual. **Scenic Resources:** Visual character of scenic resources will not be degraded. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** ▪ Changes to landscaping will not detract from mixed industrial and residential character and quality of Affected Area for visual as the Wilmington Branch ROW is currently used by the Metro A (Blue) Line and freight trains, and La Habra Branch and San Pedro Subdivision ROWs are used by freight trains. ▪ Removal of billboard will not detract from the visual character and quality of the Affected Area for visual, which is currently inharmonious, disorderly, and incoherent. **Scenic Resources:** ▪ Will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW, is currently an active freight corridor with limited landscaping. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Changes to landscaping and billboard removal not expected to alter the visual character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality as rail ROWs are used by freight trains and/or Metro A (Blue) Line. ▪ Views of scenic resources will remain available and will not be altered. No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Grade-Crossing Modifications and Street Closures	**Compatible.** **Grade Crossing:** Similar in scale, form, and materials of existing grade crossings; will be similar in character as existing grade crossings. **Street Closure:** No street closures in this landscape unit. **Scenic Resources:** Visual character of scenic resources will not be degraded. **Lighting:** Type and level of lighting will be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect visual character. **Glare:** LPA components will not create new sources of glare.	**Insensitive.** ▪ Visible in foreground; grade-crossing modifications similar in character to existing grade crossings; will not detract from mixed industrial and residential character and quality of the Affected Area for visual. **Scenic Resources:** Will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW is currently an active freight corridor with grade crossings. **Lighting:** Type and level of lighting will be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect viewer sensitivity. **Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Changes not expected to alter visual character and quality of the Affected Area for visual; modified grade crossings will be consistent with visual character and quality of existing grade crossings in the Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to this change. Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.
Parking Facilities, Radio Antennas, Pedestrian Bridges, and Tunnels. None will be located in this landscape unit.			

Source: Metro 2024o

Notes

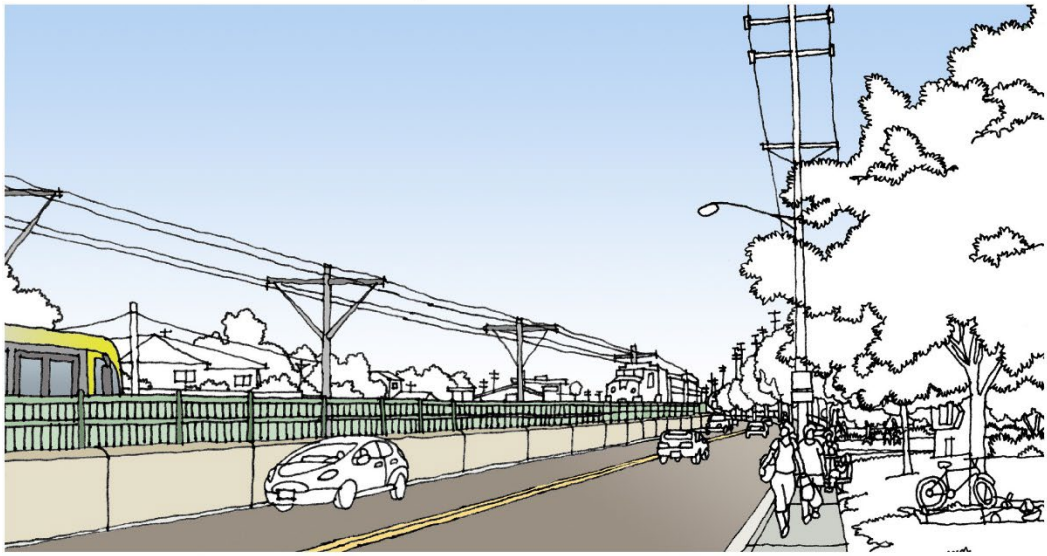
[1] Overall change in visual quality is determined based on 1) whether LPA components will be visually compatible with the visual character of the Affected Area for visual, and 2) viewer sensitivity associated with the visual changes of the LPA components.

LPA = Locally Preferred Alternative; LRT = light rail transit; LRV = light rail vehicle; MRDC = Metro Rail Design Criteria; OCS = overhead catenary system; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substations

Figure 4.4-2. Existing and Proposed Views of Salt Lake Avenue at Huntington Park Community Center, looking South

Existing Salt Lake Avenue

Proposed Salt Lake Avenue



Source: Prepared for Metro by Cityworks Design in 2023
Note: Retaining walls will be placed under fences along the edge of the San Pedro Subdivision ROW to account for the grade difference between the tracks and Salt Lake Avenue.

Table 4.4.4. LPA Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Industrial Landscape Unit

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Station Areas ▪ Slauson/A Line Station ▪ Firestone Station ▪ Gardendale Station ▪ I-105/C Line Station	**Compatible.** ▪ Consistent and fit with character and context of Affected Area for visual with low-rise industrial structures; will not detract from visual character of Affected Area for visual. ▪ Stations design to be sensitive to specific urban context and pedestrian-oriented. ▪ Station design, including signage, will follow MRDC or equivalent, Standard/Directive Drawings, and Metro Systemwide Station Design Standards. ▪ Station amenities and signage will be designed and made of materials that deter graffiti. ▪ Signage will include station identification signs, wayfinding signs, and electronic signs that provide real-time arrival information. Signs will be integrated into the station design, canopies, and other structures or elements that are part of the LPA. Signage is not expected to degrade the visual character of the Affected Area for visual. ▪ Public art will be integrated into station design to improve visual character per MRDC or equivalent, Metro Systemwide Station Design Standards, and Metro Art Program Policy. **Slauson/A Line Station:** ▪ See "Station Areas" in Table 4.4.3. **Firestone Station:** ▪ Height of aerial station, including station canopy, will not exceed 47 feet and will not	**Low.** ▪ Station entrances will be visible in the foreground; will not include features that will detract from the visual character and quality of Affected Area for visual. **Slauson/A Line Station:** See "Station Areas" in Table 4.4.3. **Firestone, & Gardendale Stations** ▪ Viewer groups will have little to no reaction to changes due to industrial nature of Affected Area for visual. ▪ No sensitive viewers in Affected Area for visual for the stations. **I-105/C Line Stations:** ▪ Viewer groups and sensitive viewers (residents) will have little to no reaction to changes due to industrial nature of Affected Area for visual. **I-105/C Line Station Platform for the Metro C (Green) Line:** ▪ No sensitive viewers in Affected Area for visual for the stations. ▪ View duration of station platform will vary based on freeway conditions. Motorists will have little to no reaction to change since motorists' attention and focus are on the road.	**Neutral.** ▪ Visible elements at station areas, lighting levels, and effects of glare will be compatible with the industrial character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	conflict with scale and massing of surrounding low-rise industrial structures. See discussion of "Aerial Structure" for further details about the visual effects. **Gardendale Station:** ▪ Height of station canopies and OCS poles and overhead wires will not exceed 20 feet; will be consistent with scale and massing of surrounding uses. **I-105/C Line Station:** ▪ Stations will not exceed 20 feet in height; will be consistent with scale and massing of the surrounding uses and freeway. The new Metro C (Green) Line station platform in the Century Freeway-Transitway Historic District freeway median will fit with the character and context of the Century Freeway-Transitway Historic District as a transportation corridor. ▪ See discussion of "Surface Parking Lots" and "Bridges" for further details associated visual effects with the construction of a new LRT bridge and the replacement Century Boulevard Underpass (freight bridge) over the Century Freeway-Transitway Historic District. **Scenic Resources:** The Project will not detract from the visual character of Rancho Los Amigos – South campus, which consists of weeds and remnants of vacant dormitories and ancillary buildings; will not detract from the visual character of Century Freeway-Transitway Historic District, which is an existing transportation corridor; will not diminish the integrity of Century Freeway-Transitway Historic District as a historical resource (See Sections	▪ Transit users will be insensitive to view of new I-105/C Line platform as viewer group will expect view of transit station since the Metro C (Green) Line is already located in the Century Freeway-Transitway Historic District freeway median. **Scenic Resources:** The LPA will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW is currently an active freight corridor with grade crossings. No sensitive viewers will be affected at Rancho Los Amigos - South Campus and Century Freeway-Transitway Historic District. **Lighting:** Type and level of lighting at station areas will be similar to those that are currently present in the Affected Area for visual. Per MRDC, all light sources at station areas will be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses. **Glare:** Station elements will be treated so that new sources of glare will not be created and will not affect viewer sensitivity.	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	5.3.2.3 and 5.2.2.18 of the West Santa Ana Branch Cultural Resources Effects Report). **Lighting:** Lighting not expected to extend beyond station areas. Type and level of lighting will be similar to those that are currently present in the Affected Area for visual and will not affect visual character. **Glare:** LPA components will not create new sources of glare and will not affect the visual character around the station areas. Stainless steel for certain station elements (e.g., columns, railings, and walls), glass panels, and glass canopies will be used. Glass canopies will be placed horizontally above station, and canopy angles are not expected to create new sources of glare or affect the visual character around the station areas. Vertical stainless-steel elements and glass panels will be dulled so that new sources of glare will not be created. Materials used for signs will not cast glare.		
Surface Parking Facilities ▪ Firestone Station ▪ I-105/C Line Station	**Compatible.** ▪ Fits with character and context of Affected Area for visual and compatible with surrounding industrial uses. No visually prominent features. ▪ Landscaping will be designed per MRDC or equivalent to improve visual quality. **Firestone Station:** ▪ Existing industrial structures on surface parking lot and wall on north side of San Pedro Subdivision ROW will be removed. ▪ Surface parking facility will minimize the scale and massing of aerial structure as aerial structure will be set back farther from Patata	**Low** **Firestone Station:** ▪ Visible in foreground; consistent with industrial character of Affected Area for visual and will not detract from visual character and quality of Affected Area for visual. No sensitive viewers in Affected Area for visual. **I-105/C Line Station:** ▪ Consistent with visual character of Affected Area for visual. ▪ Sensitive viewers (residents) will have little to no reaction to the	**Neutral** **Firestone Station:** ▪ Compatible with industrial character of Affected Area for visual. ▪ Viewers will have little to no reaction to the changes associated with the surface parking facility since the Affected Area for visual is industrial in character. ▪ Lighting levels and effects of glare will be similar to

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	Street than the existing industrial structure currently on the parking facility site. **I-105/C Line Station:** ▪ Removal of existing industrial uses and construction of surface parking facilities will provide partial views of I-105/C Line Station at residential properties on Center St and Industrial Ave. ▪ Minimizes scale and massing of station as station will be set back farther from Center St than the existing industrial structures in Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting will be designed per MRDC or equivalent and will not extend beyond parking facilities. Type and level of lighting will be similar to those that are currently present in the Affected Area for visual and will not affect visual character. **Glare:** Sources of glare (e.g., parked vehicles) will be similar to existing conditions and are not expected to alter visual character.	changes as parking facilities will be located on industrial properties. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Type and level of lighting at parking facilities will be similar to those currently present in the Affected Area for visual. Per MRDC, all light sources at surface parking lots will be directed downward and toward parking lots to minimize potential spillover onto surrounding properties, including light-sensitive uses. **Glare:** Sources of glare (e.g., parked vehicles) will be similar to existing conditions and will not affect viewer sensitivity.	existing conditions and will not affect viewer sensitivity. **I-105/C Line Station:** ▪ Compatible with industrial and residential character of Affected Area for visual. ▪ Viewers will have little to no reaction to the changes associated with the surface parking lots since the Affected Area for visual primarily consist of industrial uses. ▪ Lighting levels and effects of glare will be similar to existing conditions and will not affect viewer sensitivity.
LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles	**Compatible.** ▪ Similar visual elements (utility poles and overhead wires) are along and across street rights-of-way and rail ROWs. OCS poles, overhead wires, and LRT tracks currently located along Wilmington Branch ROW. Scale will be consistent with existing utility poles, wires, and tracks; will not conflict with visual character of Affected Area for visual. ▪ PEROW currently has no tracks south of the San Gabriel River; new LRT tracks will be	**Low**. ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to visual changes as similar visual elements exist in Affected Area for visual. ▪ **Scenic Resources:** Views of scenic resources will not be obstructed.	**Neutral.** ▪ LPA components will not change the industrial character and quality of the Affected Area for visual. Similar visual elements currently exist in the Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change. Views of scenic resources

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	consistent with visual character of the rail corridor, which is currently used as parking for the adjacent industrial uses or contains unmaintained vegetation. **Scenic Resources:** Visual character of scenic resources will not be altered; LPA components will not obstruct existing views of scenic resources. ▪ At Hollydale Community Park, Views to and from the rail ROW will be limited due to a soundwall that will be placed along the perimeter of the San Pedro Subdivision ROW. ▪ At Valley Christian Junior High and High Schools, trees in the northerly portion of the schools softens views of the PEROW. **Lighting:** ▪ No lighting for OCS poles and overhead wires. If utility poles associated with the LRT have lights, the light intensity will be comparable to lighting levels of the surrounding area. ▪ North of Somerset Boulevard, light intensity from LRVs traveling along LRT tracks will be comparable to lighting from existing buildings, vehicles, LRVs from the existing Metro A (Blue) Line, and freight trains along the rail ROWs. ▪ South of Somerset Boulevard, LRVs will be a new source of light since the PEROW does not have any existing transportation-related lighting (e.g., freight trains and LRVs); light intensity from LRVs will be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along	**Lighting:** Lighting from LRVs traveling along LRT tracks and utility poles will be directed away from residential uses and other light-sensitive uses; LRV lighting and lighting from utility poles will not affect light-sensitive viewers. **Glare:** Materials to be used will not create new sources of glare.	will not be altered or obstructed. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	surrounding streets, which currently produce transportation-related light. **Glare:** LRVs traveling along tracks will not be a substantial source of glare. Materials to be used for LPA components will not create new sources of glare.		
Fences and Retaining Walls ▪ Along at-grade portions that parallel a street right-of-way; low retaining walls with fences on top of retaining walls where rail ROW is slightly elevated from the adjacent street.	**Compatible.** ▪ Similar visual elements in Affected Area for visual; properties facing rail ROWs currently have fences or walls along the property lines. ▪ Scale of fences and retaining walls will be consistent and fit with the industrial visual character of Affected Area for visual. Fences and a combination of retaining walls and fences along rail ROW will be approximately 6 feet tall. ▪ Per MRDC, retaining walls will be treated to prevent defacement and landscaping will be provided where feasible as a long-term deterrent to graffiti. When plantings on walls are precluded, architectural treatments, such as bas-relief and decorative form-liners, will be used. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of the Affected Area for visual as similar elements are in the area. ▪ Sensitive viewers will have little to no reaction to visual changes. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Industrial character and quality of Affected Area for visual unchanged as similar visual elements, lighting levels, and sources of glare currently exist. ▪ Viewer groups will have little to no reaction to the change. ▪ Views of scenic resources will not be obstructed.
Soundwalls ▪ 8-foot-tall soundwalls ▪ At-grade from Santa Ana St to Cecilia St – Cities of South Gate and Cudahy	**Compatible.** ▪ Landscape unit has similar visual elements (walls). Scale and massing consistent with surrounding low-rise industrial character and context of the Affected Area for visual.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual as similar visual elements are in area.	**Neutral.** ▪ Industrial character and quality of Affected Area for visual will not change; soundwalls will be at similar scale as surrounding

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
▪ On aerial structure from Imperial Hwy to about 520 feet south of Garfield Ave – City of South Gate ▪ 10-foot tall soundwalls ▪ At-grade at and east of San Gabriel River – City of Cerritos ▪ See Section 4.7.4, Mitigation Measure NOI-1 (Soundwalls)	▪ Per MRDC, soundwalls will be landscaped, as appropriate, for graffiti management. ▪ New soundwall on aerial structure along the San Pedro Subdivision ROW (from Imperial Hwy to about 520 feet south of Garfield Ave) will obstruct residential views of the rail ROW and industrial uses across from the rail ROW. ▪ Scale and massing of soundwall on aerial structure from Imperial Hwy to about 520 feet south of Garfield Ave consistent with the four-story multifamily residential development on the east side of Garfield Ave and one-story commercial and industrial structures in the surrounding area. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto adjacent properties.	▪ Viewer groups will have little to no reaction to the change as soundwalls will be in an industrial area with similar visual elements and will obstruct views of LPA components within rail ROW. ▪ Residents on the east side of the San Pedro Subdivision ROW in the City of South Gate will no longer see industrial uses on the west side of the rail ROW; however, residents will have little to no reaction to the change due to the industrial character of the building; soundwall will not detract from the mixed industrial and residential character of the Affected Area for visual. **Scenic Resources:** ▪ Views of San Pedro Subdivision ROW at Hollydale Community Park will be obstructed by soundwall. ▪ Residents across the street from Hollydale Community Park and users of the park will no longer have views of the rail ROW but will continue to have views of the park. ▪ LPA component will not obstruct views of the San Gabriel River channel; some residents have views of the San Gabriel River channel through their rear yards but soundwall on bridge will not obstruct or alter views of the San Gabriel River channel.	structures and will limit amount of LRV light that spills over onto adjacent properties. ▪ Viewer groups will have little to no reaction to the change as soundwalls will be in an industrial area with similar visual elements. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
		Lighting and Glare: LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto areas with light-sensitive users.	
Radio Houses and TC&C Houses	**Compatible.** ▪ Constructed as small buildings; height, massing, and form will be consistent with industrial low-rise structures in Affected Area for visual and will fit with industrial character; will not degrade overall visual character and quality of Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not alter visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change as LPA component will be in an industrial area. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction to change as LPA component will be in industrial area; buildings consistent with surrounding structures. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
TPSS	**Compatible.** ▪ Scale, height, massing, and form consistent with low-rise industrial character of the Affected Area for visual; will not degrade overall visual character and quality of the area. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual as similar visual elements are in Affected Area for visual. ▪ Located on industrial properties that currently contain transmission towers, or within the rail ROW. ▪ At I-105/C Line Station, residents at Center St and Industrial Ave may have views of TPSS. Per MRDC, TPSS will be landscaped or will incorporate design features to screen or improve appearance of the structures; local ordinances for screening will be followed; not expected to contrast with existing visual character and quality of surrounding residential neighborhood. ▪ Viewers will have little to no reaction due to industrial character. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction to the change as TPSSs are on industrial properties that contain transmission towers, or within the rail ROW. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Radio Antennas	**Compatible.** ▪ Radio antennas will fit with industrial character; will not degrade overall visual character and quality of the Affected Area for visual. ▪ If 35-foot radio antenna is built at surface parking lot for I-105/C Line Station, antenna will be consistent with scale of low-rise structures in Affected Area for visual. ▪ If 60-foot radio antenna is built, antenna will be taller than surrounding structures, but will be placed close to the San Pedro Subdivision ROW. Antenna will be farther from surrounding low-rise structures than existing industrial building on parking lot site, which is not set back from the Industrial Ave right-of-way. Location of antenna will reduce the scale from residential area. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual. No sensitive viewers near radio houses. ▪ Residents along Industrial Ave will have little to no reaction to the change; the antenna location next to the San Pedro Subdivision ROW will reduce its scale from the residential area; antenna will be consistent with industrial character of the Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Neutral.** ▪ Industrial character and quality of the Affected Area for visual will not change. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.
Aerial Structures **~32 feet in height** ▪ Randolph Street (west of Alameda St) – City of Huntington Park ▪ Randolph St/San Pedro Subdivision ROW– City of Huntington Park ▪ Meadow Dr to South Gate/Downey City	**Compatible.** ▪ Will not conflict with industrial character and context of Affected Area for visual will not occur. **Randolph Street (west of Alameda St) – City of Huntington Park:** ▪ Supported on columns with retaining walls as structure rises/descends at Wilmington Ave/Randolph St. Straddle bents from Slauson/A Line Station to Holmes Ave.	**Low.** ▪ Aerial structures will be visible in foreground; will not detract from industrial character and quality of the landscape unit. No sensitive viewers in the Affected Area for visual. **Randolph St/San Pedro Subdivision ROW – City of Huntington Park:**	**Neutral.** ▪ Aerial structures will not change industrial character and quality of Affected Area for visual. ▪ Consistent with and will not degrade overall visual character and quality of Affected Area for visual.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Boundary– City of South Gate **~32 feet in height (~47 feet with station canopy):** ▪ Ardine St to Rayo Ave (includes Firestone Station) – City of South Gate	▪ Similar height, form, massing, and materials as existing aerial structure and surrounding low-rise structures. Structures will fit with industrial character and context of area. **Randolph St/San Pedro Subdivision ROW– City of Huntington Park:** ▪ Aerial structure will be new visual element. Scale and massing for aerial structure will be similar to surrounding low-rise structures and will not conflict with industrial character of Affected Area for visual. **Ardine St to Rayo Ave (including Firestone Station) & East of Rio Hondo Channel to South Gate/Downey City Boundary – City of South Gate:** ▪ Primarily supported by retaining walls; supported by columns at Firestone Station, Atlantic Ave, Firestone Blvd, from Meadow Rd to Leeds St, and from Imperial Highway to Garfield Ave). Aerial structures will be new visual element. ▪ Scale consistent with surrounding low-rise commercial and industrial structures; fits with character and context of Affected Area for visual. ▪ Development of Firestone Station parking facility will allow views of the aerial structure along Patata St and Atlantic Ave. Scale and massing will be consistent with surrounding low-rise structures and will minimize the appearance of the aerial structure as the aerial structure will be set back farther from Atlantic Ave and Patata St than existing industrial structures within the station area.	▪ Views of aerial structure will be limited and located to the rear of industrial properties on both sides of rail ROW. **Randolph St west of Alameda St (City of Huntington Park), Ardine St to Rayo Ave (City of South Gate), and East of Rio Hondo Channel to South Gate/Downey City Boundary (City of South Gate):** ▪ Where rail ROWs face rears of buildings on both sides, views of aerial structures will be limited. ▪ Where rail ROWs face a street right-of-way, aerial structure will be visible in foreground but will not detract from character and quality of landscape unit due to industrial character of Affected Area for visual. ▪ Viewer groups will have little to no reaction to visual change as aerial structures are in an industrial area. **Scenic Resources:** LPA component will not obstruct or alter views of scenic resources. **Lighting:** No lighting for LPA component. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	▪ Viewer groups will have little to no reaction to changes in visual character and quality of the Affected Area for visual. ▪ LRV lighting will not alter visual character and will not adversely affect viewer sensitivity. ▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	Scenic Resources: LPA component will be to the rear of 6231 Maywood Ave and will not obstruct views of the scenic resource from Maywood Ave. **Lighting:** No lighting for aerial structures. Lighting will primarily emanate from LRVs and is not expected to extend beyond aerial structures. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.		
Bridges ▪ Rio Hondo channel – City of South Gate ▪ San Gabriel River – City of Cerritos ▪ Century Freeway-Transitway Historic District (new LRT bridge, replacement Century Boulevard Underpass (freight bridge))– City of Paramount	**Compatible.** ▪ Scale and massing will be larger than existing bridges at Rio Hondo channel and San Gabriel River; however, similar visual elements (i.e., bridges) are located at the flood-control channels and Century Freeway-Transitway Historic District. ▪ Bridges compatible and fit with visual character and context of the concrete-lined flood-control channels and Century Freeway-Transitway Historic District. **Rio Hondo channel:** Existing freight bridge over Rio Hondo channel will remain; new bridge built for LPA will be adjacent to existing bridge. **San Gabriel River:** Existing bridge over San Gabriel River will be removed; although new bridge will be larger and will have a 10-foot tall soundwall, reconstructed bridge at San Gabriel River will be similar in location and height of existing bridge, and will fit with visual character of the flood-control channel.	**Low.** ▪ Visible in foreground; viewer groups (motorists on nearby streets) will have little to no reaction to bridges as views are fleeting and viewers' attention and focus are on the road. **Rio Hondo channel:** Angled views of Rio Hondo channel bridge available to motorists along Garfield Ave/Imperial Hwy. **San Gabriel River:** Angled views of bridge over San Gabriel River available to motorists along SR-91 freeway and Artesia Blvd. **Century Freeway-Transitway Historic District:** View of new LRT bridge and replacement freight bridge over Century Freeway-Transitway Historic District available to motorists along Century Freeway-Transitway Historic District; views will be consistent with	**Neutral.** ▪ Consistent with visual character and quality of the Affected Area for visual. ▪ Although new bridges over the Rio Hondo channel and San Gabriel River channel will be larger than the existing bridges, none of the new bridges will degrade the overall visual character and quality of the Affected Area for visual. ▪ Viewers will have little to no reaction to the changes associated with the new bridges. ▪ LRV lighting on bridges will not alter visual character and will not adversely affect sensitive viewers.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	Century Freeway-Transitway Historic District: Century Freeway-Transitway Historic District has 3 existing bridges within 470 feet of each other. With the new LRT bridge, the area will have 4 bridges within the same distance of each other. The replacement Century Boulevard Underpass (freight bridge) and new LRT bridge over the Century Freeway-Transitway Historic District will be similar in location, height, form, and material as the existing bridges over the Century Freeway-Transitway Historic District (i.e., Arthur Ave pedestrian bridge, Century Boulevard Underpass, and Façade Ave bridge). LRT bridge will be approximately 45 feet wide; the replacement freight bridge will be up to 35 feet wide. Vertical circulation elements for emergency egress only will be added to Façade Ave bridge and will be compatible with visual character of Century Freeway-Transitway Historic District and the bridges over Century Freeway-Transitway Historic District. **Scenic Resources:** LPA component consistent with design and appearance of Rio Hondo channel, Century Freeway-Transitway Historic District, and San Gabriel River channel; character-defining features of the Rio Hondo channel, Century Freeway-Transitway Historic District, and San Gabriel River channel will remain intact; LPA component will be compatible with the design, workmanship, and materials found at the scenic resources; visual character of scenic resources will not be altered. (See Sections 5.2.2.16, 5.2.2.18, and 5.2.2.21 of the West Santa Ana Branch Cultural Resources Effects Report)	existing views in the Affected Area for visual, which include views of bridges. Viewer groups will be exposed to views of four bridges in Affected Area for visual but viewer groups will not be affected by the change since existing views in the area includes views of three bridges within 470 feet of each other. Number of viewers and duration of view vary based on freeway conditions. **Scenic Resources:** No sensitive viewers have views of LPA component at the Rio Hondo channel and Century Freeway-Transitway Historic District. Some residents have views of the San Gabriel River channel through their rear yards but soundwall on bridge will not obstruct or alter views of the San Gabriel River channel. **Lighting:** No lighting on the LRT bridges at the Rio Hondo channel, San Gabriel River channel, I-105, and replacement Century Boulevard Underpass. Nighttime views will not affect sensitive viewers and drivers along Century Freeway-Transitway Historic District and other roadways. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
	Lighting: No lighting on the LRT bridges at Rio Hondo channel, San Gabriel River, I-105, and replacement Century Boulevard Underpass. Lighting will primarily emanate from LRVs and is not expected to extend beyond the rail ROWs. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.		
Undercrossing ▪ Firestone Station (City of South Gate)	**Compatible.** Undercrossing to be built under the Firestone Station to connect driveway on Atlantic Ave to the Firestone Station surface parking lot; consistent with surrounding low-rise industrial structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting is not expected to extend beyond the undercrossing and will be consistent with industrial character of Affected Area for visual. **Glare:** Materials to be used will not create new sources of glare.	**Low.** No sensitive viewers are in the area. Viewer groups will have little to no reaction to the change since views of the undercrossing will be limited. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** No sensitive viewers are in the area. Lighting is not expected to extend beyond the undercrossing and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	**Neutral.** ▪ Consistent with visual character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ Lighting will not alter visual character and will not adversely affect viewer sensitivity. ▪ No new sources of glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Tunnels ▪ I-710 – City of South Gate ▪ I-605 – City of Cerritos	**Compatible.** **I-710 Freeway:** ▪ Similar visual elements within the Affected Area for visual; existing tunnel for freight tracks currently located under I-710 freeway; tunnel will be constructed on northeast side of existing tunnel for LPA tracks. ▪ New tunnel will be narrower than the existing tunnel; form and materials will be similar to the existing tunnel. **I-605 Freeway:** ▪ No new tunnels under I-605 freeway; LPA will use the existing tunnel. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting is not expected to extend beyond tunnels and will be consistent with industrial character of Affected Area for visual. **Glare:** Materials to be used will not create new sources of glare.	**Low.** **I-710 Freeway:** ▪ Views of tunnel generally available on adjacent industrial properties but not on public rights-of-way; will not detract from industrial character of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to visual changes due to industrial character of Affected Area for visual. Sensitive viewers do not have views of tunnel. **I-605 Freeway:** ▪ Views of tunnel is generally available on adjacent properties and at an angle on public rights-of-way (Artesia Blvd and Studebaker Rd). ▪ Views will not detract from industrial character of the Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting is not expected to extend beyond tunnels and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	**Neutral.** Consistent with character and quality of Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual due to limited and/or angled views of tunnels. ▪ Viewer groups will have little to no reaction to the changes in visual character and quality. ▪ Lighting at tunnels will not alter visual character and will not adversely affect viewer sensitivity. ▪ No new sources of glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Landscape and Billboard Removal	**Compatible.** **Landscaping:** ▪ Existing landscaping in Affected Area for visual limited and/or sporadic. Vegetation on south side of San Pedro Subdivision ROW along Salt Lake Ave will be outside of the LPA work limits and will remain in place. ▪ Removal of vegetation in rail ROWs will not adversely affect visual character due to limited amount of vegetation along rail ROWs; not expected to adversely affect visual character of Affected Area for visual. ▪ Landscaping to be installed along the LPA will follow the MRDC, which requires landscape design to minimize maintenance requirements. Landscaping that requires intensive maintenance will not be used, and plants that attract rodents and "nuisance" insects, such as white flies, stain pavement or produce excessive litter, will be avoided. **Billboard:** Billboard in heavily industrialized area; removal will not alter overall visual character and quality of Affected Area for visual. **Scenic Resources:** LPA components will not alter the visual character of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** ▪ Changes in landscaping and billboard removal will not detract from industrial character and quality of Affected Area for visual as changes will primarily occur within rail ROWs; existing vegetation along rail ROWs does not enhance the view of the Affected Area for visual. ▪ Due to industrial nature of the landscape unit, viewer groups will have little to no reaction to visual changes associated with this LPA component. ▪ No sensitive viewers and scenic resources are in the Affected Area for visual. **Scenic Resources:** LPA components will not alter views of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Changes in landscaping and billboard removal not expected to alter visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality [1]
Grade-Crossing Modifications and Street Closures	**Compatible.** **Grade Crossing:** ▪ Consistent with scale, form, and materials of existing grade crossings. Existing grade crossings to be modified at Wilmington Ave and Regent St, which will not allow motorists and pedestrians to cross San Pedro Subdivision ROW. Visual character will be consistent with visual character of industrial area. ▪ Where new grade crossings are located, LPA component will be consistent with the visual character of the existing street rights-of-way. **Street Closure:** ▪ No street closures in the Industrial Landscape Unit. ▪ **Scenic Resources:** Visual character of scenic resources will not be degraded. **Lighting:** Type and level of lighting will be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect visual character. **Glare:** LPA components will not create new sources of glare.	**Low.** ▪ Visible in foreground; grade-crossing modifications and street closures similar in character as existing grade crossings and will not detract from character and quality of Affected Area for visual. ▪ No sensitive viewers and scenic resources are in Affected Area for visual. ▪ **Scenic Resources:** Will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW is currently an active freight corridor with grade crossings. **Lighting:** Type and level of lighting will be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect viewer sensitivity. **Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction to change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting. ▪ No new sources of glare will be created.

Source: Metro 2024o
Notes:
[1] Overall change in visual quality is determined based on 1) whether LPA components will be visually compatible with the visual character of the Affected Area for visual, and 2) viewer sensitivity associated with the visual changes of the LPA components.
LPA = Locally Preferred Alternative; LRT = light rail transit; LRV = light rail vehicle; MRDC = Metro Rail Design Criteria; OCS = overhead catenary system; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substations

Figure 4.4-3. Existing and Proposed Views at Atlantic Avenue, looking East toward Firestone Station Area

Existing Firestone Station

Proposed Firestone Station

Source: Prepared for Metro by Cityworks Design in 2023
Note: The driveway to the Firestone Station parking lot shown in this figure is depressed below the at-grade freight tracks and Atlantic Avenue.

Residential Landscape Unit: This landscape unit is located in the Cities of Huntington Park, Cudahy, and South Gate. The alignment will be primarily at-grade with the surrounding uses in the Residential Landscape Unit. Salt Lake Park is located just outside of this landscape unit. Sensitive viewers in the Affected Area for visual for this landscape unit include residents. Table 4.4.5 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Residential Landscape Unit.

Figure 4.4-4 depicts the change in visual character and quality for this landscape unit on Randolph Street. Figure 4.4-5 depicts the change in visual character and quality of the Affected Area for visual for this landscape unit on Salt Lake Avenue. Overall, the change in visual quality in the Residential Landscape Unit will be neutral as the LPA components will be compatible with the visual character of the Affected Area for visual and viewer sensitivity to LPA components will be low. Nighttime lighting levels in the Affected Area for visual will not significantly increase, and the effects of glare will be similar to existing conditions. Viewer groups in this landscape unit will have little to no reaction to visual changes associated with the LPA components. Additionally, the LPA will not change the natural topography of the Affected Area for visual. Therefore, no adverse visual effects are anticipated in the Residential Landscape Unit.

Table 4.4.5. LPA Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Residential Landscape Unit

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Station Areas ▪ Pacific/Randolph ▪ Florence/Salt Lake	**Compatible.** ▪ Pacific/Randolph Station will be in area with low-rise commercial and residential structures. ▪ Florence/Salt Lake Station will be in area with low-rise industrial, commercial, and residential uses. ▪ Station canopies, OCS poles, and overhead wire heights not to exceed 20 feet; will be consistent with scale, massing, character, and context of Affected Area for visual; will not detract from visual character of rail ROWs and the Affected Area for visual. ▪ Design to be sensitive to specific urban context at each station and pedestrian-oriented. ▪ Station design, including signage, will follow MRDC or equivalent, Metro's *Systemwide Station Design Standards*, and Standard/Directive Drawings. ▪ Public art will be integrated into station design to improve visual character per MRDC or equivalent, Metro Systemwide Station Design Standards, and Metro *Art Program Policy*. ▪ Station amenities and signages will be designed and made of materials that deter graffiti. ▪ Signage will include station identification signs, wayfinding signs, and electronic signs that provide real-time arrival information. Signs will be integrated into	**Low.** ▪ Visible in foreground; scale and massing will be consistent with low-rise structures in the Affected Area for visual; will not detract from visual character and quality of the Affected Area for visual. ▪ Stations will be designed to be sensitive to the specific urban context of each station area. ▪ Sensitive viewers will have little to no reaction to changes associated with this LPA component since views toward the stations from existing residential properties will be at an angle and the stations will not include features that will detract from the visual character of the rail ROWs. **Scenic Resources:** Views of Salt Lake Park will not be obstructed. **Lighting:** Type and level of lighting at station areas will be similar those that are currently present in the Affected Area for visual. Per MRDC, all light sources at station areas will be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses. **Glare:** Station elements will be treated so that new sources of glare will not be created and will not affect viewer sensitivity.	**Neutral.** ▪ Visual elements, lighting levels, and effects of glare will be compatible with character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to the changes associated with the stations as the stations will be in the rail ROW and lighting will be directed away from light-sensitive uses.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	the station design, canopies, and other structures or elements that are part of the LPA. Signage is not expected to degrade the visual character of the Affected Area for visual. **Scenic Resources:** Visual character of Salt Lake Park will not be altered. **Lighting:** Lighting, including illuminated signs, not expected to extend beyond station areas. Type and level of lighting will be comparable to those that are currently present in the Affected Area for visual and will not affect visual character. **Glare:** LPA components will not create new sources of glare and will not affect the visual character around the station areas. Stainless steel for certain station elements (e.g., columns, railings, and walls), glass panels, and glass canopies will be used. Glass canopies will be placed horizontally above station, and canopy angles are not expected to create new sources of glare or affect the visual character around the station areas. Vertical stainless-steel elements and glass panels will be dulled so that new sources of glare will not be created. Materials used for signs will not cast glare.		

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles	**Compatible.** ▪ Similar visual elements located in Affected Area for visual; LPA component will be consistent with scale and form of existing utility wires and poles in the Affected Area for visual (Figure 4.4-4 and Figure 4.4-5). **Scenic Resources:** Visual character of scenic resources will not be altered as similar visual elements are in the Affected Area for visual. **Lighting:** No lighting for OCS poles and overhead wires. If utility poles associated with the LRT have lights, the light intensity will be comparable to lighting levels of the surrounding area. Light intensity from LRVs traveling along LRT tracks is expected to be comparable to lighting from existing buildings, vehicles, and freight trains along the rail ROWs. **Glare:** LRVs traveling along tracks not a substantial source of glare. Materials to be used for LPA components will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to changes since similar visual elements are in the Affected Area for visual. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting:** Lighting from LRVs traveling along LRT tracks and utility poles will be directed away from adjacent properties, including residential uses and other light-sensitive uses; LRV lighting and lighting from utility poles are expected to be comparable to lighting from existing buildings, vehicles, and freight trains along the rail ROWs and will not affect viewer sensitivity. Per MRDC, directional shielding will be used, where needed, to avoid the intrusion of unwanted light into adjacent sensitive land uses. **Glare:** Materials to be used will not create new sources of glare. Directional shielding will be used, which will limit glare at adjacent sensitive land uses.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not change; will remain similar to existing condition. ▪ Viewers will have little to no reaction to the change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Fences and Retaining Walls ▪ Along at-grade portions that parallel a street ROW; low retaining walls with fences on top of retaining walls where rail ROW is slightly elevated from the adjacent street	**Compatible.** ▪ Fences and retaining walls along the rail ROWs will be approximately 6 feet in height. ▪ Similar visual elements in Affected Area for visual; properties along Randolph St and Salt Lake Ave currently have fences or walls along the property lines. ▪ Scale, form, and massing to be consistent and fit with visual character of Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual. ▪ Per the MRDC, retaining walls will be treated to prevent defacement and landscaping will be provided where feasible as a long-term deterrent to graffiti. When plantings on walls are precluded, architectural treatments, such as bas-relief and decorative form-liners, will be used. **Scenic Resources:** Visual character of scenic resources will not be altered since similar visual elements are in the Affected Area for visual. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual and sensitive viewers will have little to no reaction to the addition of LPA components since similar visual elements are in Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed or altered. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not change as similar visual elements and lighting levels exist in Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Soundwalls ▪ 8-foot-tall soundwalls – At-grade along Randolph St – City of Huntington Park – At-grade along Salt Lake Ave – Cities of Huntington Park and Cudahy ▪ See Section 4.7.4 and Mitigation Measure NOI-1 (Soundwalls)	**Compatible.** ▪ Soundwalls at-grade along Salt Lake Ave will obstruct residential views across Salt Lake Ave and views of San Pedro Subdivision ROW (Figure 4.4-5). ▪ Scale of soundwall will be consistent with surrounding low-rise structures and existing visual elements. ▪ Per the MRDC, soundwalls will be landscaped, as appropriate, for graffiti management. **Scenic Resources:** LPA component will be at a similar scale as the surrounding low-rise structure, will not alter the visual character of the scenic resources; views of scenic resources will remain available in the Affected Area for visual. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto adjacent properties. LPA will follow the MRDC, which requires light and glare to be directed away from adjacent properties. Directional shielding will be used, where needed, to avoid the intrusion of unwanted light and glare into adjacent sensitive land uses, such as residences.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual as soundwalls will be at similar scale as surrounding structures. ▪ Sensitive viewers will see new soundwall along San Pedro Subdivision ROW instead of railroad tracks and structures across the rail ROW. ▪ Viewer sensitivity will be low, and sensitive viewers will have little to no reaction to the change since soundwalls will be at similar scale as the surrounding structures. **Scenic Resources:** LPA component will not alter the visual character of scenic resources; views of scenic resources will remain available. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto areas with light-sensitive users. Per MRDC, light and glare will be directed away from adjacent properties. Directional shielding will be used, where needed, to avoid the intrusion of unwanted light and glare into adjacent sensitive land uses, such as residences.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not change because soundwalls will be similar in scale as the surrounding structures and will limit amount of LRV light that spills over onto adjacent properties; will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
TC&C Houses	**Compatible.** ▪ TC&C houses will be small buildings; will be consistent with scale, massing, and form of surrounding low-rise structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not alter visual character and quality of Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to TC&C house; will be compatible with scale, massing, and form of the surrounding low-rise structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction the change. ▪ No new sources of light and glare will be created.
TPSS	**Compatible.** ▪ TPSS will be situated on commercial and industrial properties. ▪ Scale, height, massing, and form consistent with low-rise structures and residential character of Affected Area for visual; will not degrade overall visual character and quality of area. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No external lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not detract from character and quality of Affected Area for visual, which contains residential structures and a few commercial and industrial structures. ▪ Sensitive viewers will have little to no reaction as TPSS are on industrial and commercial properties. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Scale, massing, and form will be compatible with the character and quality of the Affected Area for visual; will not degrade the overall visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change as component will be consistent with scale, massing, and form of surrounding low-rise structures. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Radio Antennas	**Compatible.** ▪ 35- to 60-foot-tall radio antenna within La Habra Branch ROW at Randolph St/Seville Ave intersection; will be consistent with the scale of low- and mid-rise structures. A 5-story residential structure is located at northeast corner of this intersection. ▪ Antenna will not degrade overall visual character and quality of the Affected Area for visual since similar components (utility poles) are in Affected Area for visual; antenna will be consistent with the character of the existing utility poles. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** Project component will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual. ▪ No sensitive viewers and scenic resources near radio antenna. **Scenic Resources:** Project component not within viewshed of scenic resources. **Lighting and Glare:** Project component will not create new sources of light and glare.	**Low.** ▪ Visual character and quality of Affected Area for visual will not change. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.
Landscape and Billboard Removal	**Compatible** **<u>Landscaping:</u>** ▪ Landscape removal will not visually degrade overall visual character of Affected Area for visual as La Habra Branch ROW and San Pedro Subdivision ROW are currently and has historically been used for freight rail and removal of existing landscaping will not change the character of the rail ROWs. ▪ Per MRDC, landscape will be designed to minimize maintenance. Landscaping that requires intensive maintenance will not be used, and plants that attract rodents and "nuisance" insects (such as white flies), stain pavement or produce excessive litter, will be avoided.	**Low.** ▪ Viewer sensitivity will be low as the changes will be within existing rail ROWs that are currently used by freight trains; viewer groups will continue to see the rail ROWs. **Scenic Resources:** Will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW is currently an active freight corridor with limited landscaping. **Lighting and Glare:** Project components will not create new sources of light and glare.	**Neutral.** ▪ Landscape removal not expected to degrade visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ Views of scenic resources will remain available and will not be altered. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Billboard: No billboards in landscape unit. **Scenic Resources:** Project component not within viewshed of scenic resources. **Lighting and Glare:** Project components will not create new sources of light and glare.		
Grade-Crossing Modifications and Street Closures	**Compatible.** ▪ Consistent with scale, form, and materials of existing grade crossings in the same areas. ▪ Existing grade crossing will be modified at Santa Fe Ave, Pacific Blvd, Miles Ave, and State St and closed at Malabar St, Rita Ave, Arbutus Ave, and Otis Ave; changes will be consistent with the visual character of the existing grade crossings. **Scenic Resources:** Visual character of scenic resources will not be degraded. **Lighting:** Type and level of lighting will be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect visual character. **Glare:** LPA components will not create new sources of glare.	**Low.** ▪ Visible in foreground; viewer sensitivity will be low since grade-crossing modifications will be similar in character as existing grade crossings; will not detract from character and quality of the Affected Area for visual. **Scenic Resources:** LPA component will not detract views of scenic resources; will not alter visual character of scenic resources since the rail ROW is currently an active freight corridor. **Lighting:** Type and level of lighting will be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect viewer sensitivity. **Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered as existing grade crossings are in the Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting. ▪ No new sources of glare will be created.
Aerial Structures, Pedestrian Bridges, Tunnels, Parking Facilities, and Radio Houses. None will be located in this landscape unit.			

Source: Metro 2024o
Notes:
[1] Overall change in visual quality is determined based on 1) whether LPA components will be visually compatible with the visual character of the Affected Area for visual, and 2) viewer sensitivity associated with the visual changes of the LPA components.
LPA = Locally Preferred Alternative; LRT = light rail transit; LRV = light rail vehicle; MRDC = Metro Rail Design Criteria; OCS = overhead catenary system; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substations

Figure 4.4-4. Existing and Proposed Views of Randolph Street at Miles Avenue, looking East

Existing Randolph Street

Proposed Randolph Street

Source: Prepared for Metro by Cityworks Design in 2023

Figure 4.4-5. Existing and Proposed Views of Salt Lake Avenue North of Clara Street, looking Northwest

Existing Salt Lake Avenue

Proposed Salt Lake Avenue

Source: Prepared for Metro by Cityworks Design in 2023

Suburban Residential and Industrial Landscape Unit: This landscape unit is located in the Cities of South Gate and Paramount and no stations will be located in this landscape unit. Sensitive viewers include residents and visitors of Paramount Park.

Table 4.4.6 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Suburban Residential and Industrial Landscape Unit. Figure 4.4-6 depicts the change in visual character and quality at Downey Avenue. LPA components will not obstruct views of or alter the visual character and quality of the existing Los Angeles River truss bridge at the Los Angeles River, "Defiance" (a public art sculpture), and Paramount Park. Viewer sensitivity to the changes at the Los Angeles River and at Paramount Boulevard/ Rosecrans Avenue will be low. The realignment of the Paramount Bike Trail between Somerset Boulevard and Lakewood Boulevard and potential removal of landscaping associated with the bike trail will not degrade the visual character of the PEROW as the PEROW currently contains wide strips of unpaved land. Where PEROW views are available, views of LPA components will either be obstructed by soundwalls (Mitigation Measure NOI-1 [Soundwalls]) or by existing walls that are currently located between the PEROW and residential properties. The soundwalls will also obstruct views of LPA components along the Paramount and Bellflower Bike Trails. Nighttime lighting levels in the Affected Area for visual will not significantly increase, and the effects of glare will be similar to existing conditions.

Overall, LPA components will be compatible with the visual character of the Affected Area for visual, and viewer sensitivity to the changes associated with the LPA components will be low. Additionally, the LPA will not change the natural topography of the Affected Area for visual. However, the existing landscaping and decorative wall on the south side of the World Energy storage tracks (east of the LRT tracks) could be removed, which will make the refinery storage tank cars on the railroad tracks more apparent along Somerset Boulevard. Views of the storage tracks will not be visually compatible with the surrounding residential area, and residents will be sensitive to the change in visual character. Therefore, adverse effects on visual quality will occur in the Suburban Residential and Industrial Landscape Unit. However, with implementation of Mitigation Measure VA-1 (Screening at Somerset Boulevard), no adverse effect will occur.

Table 4.4.6. LPA Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential and Industrial Landscape Unit

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
LRT Tracks, OCS Poles, and Overhead Wires	**Compatible.** ▪ Similar visual elements located within the Affected Area for visual. Scale of OCS poles and overhead wires consistent with existing utility poles and wires and will not conflict with visual character of Affected Area for visual. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting:** ▪ No lighting for OCS poles and overhead wires. If utility poles associated with the LRT have lights, the light intensity will be comparable to lighting levels of the surrounding area. ▪ North of Somerset Boulevard, light intensity from LRVs traveling along LRT tracks is expected to be comparable to lighting from existing buildings, vehicles, Paramount Bike Trail, and freight trains along the rail ROWs. ▪ South of Somerset Boulevard, LRVs will be a new source of light since the PEROW does not have any existing transportation-related lighting (e.g., freight trains and LRVs); light intensity from LRVs will be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along surrounding streets, which currently produce transportation-related light.	**Low.** ▪ Visible in foreground; Sensitive viewers will have little to no reaction to visual changes as similar visual elements already exist in Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting:** Lighting from LRVs traveling along LRT tracks and utility poles will be directed away from residential uses and other light-sensitive uses; LRV lighting and lighting from utility pole will not affect light-sensitive viewers. **Glare:** Materials to be used will not create new sources of glare.	**Neutral.** ▪ Mixed industrial and residential character and quality of Affected Area for visual unchanged as similar visual elements currently exist in Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Glare: LRVs along tracks will not be a substantial source of glare. Materials to be used for LPA components will not create new sources of glare.		
Fences and Retaining Walls ▪ Along at-grade portions of LPA that parallel street ROW ▪ Low retaining walls with fences on top of retaining walls where rail ROW is slightly elevated from adjacent street	**Compatible.** ▪ Properties facing rail ROWs currently have fences or walls along property lines; fences, and combination of retaining walls/fences, along rail ROW will be 6 feet tall. ▪ Similar visual elements in Affected Area for visual; scale and form will be consistent and fit with visual character of Affected Area for visual. ▪ Per the MRDC, retaining walls will be treated to prevent defacement and landscaping will be provided where feasible as a long-term deterrent to graffiti. When plantings on walls are precluded, architectural treatments, such as bas-relief and decorative form-liners, will be used. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** Visible in foreground; will not detract from visual character and quality of Affected Area for visual as similar visual elements are in Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Mixed industrial and residential character and quality of Affected Area for visual unchanged as similar visual elements and lighting levels currently exist in Affected Area for visual. ▪ Sensitive viewers will have little to no reaction to change. ▪ No new sources of light and glare will be created.
Soundwalls & Vertical Screening Elements ▪ 4-foot-tall soundwall – On aerial structure north of Paramount Park – City of Paramount ▪ 6-foot tall soundwall	**Compatible.** ▪ Where aerial structure will be situated to the rear of residential properties, a vertical screening element will be placed on top of soundwall to obstruct views of LRV vehicles from the residences if the soundwall is not sufficiently tall to block the line-of-sight. ▪ Scale and massing will be consistent and fit with the existing low-rise structures in	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual since similar visual elements are in the area. ▪ Sensitive viewers will have little to no reaction to soundwalls and vertical screening elements since soundwalls and vertical screening	**Neutral.** ▪ Mixed residential and industrial character and quality of Affected Area for visual will not change as similar visual elements currently exist in Affected Area for visual. ▪ Viewers will have little to no reaction to the change.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
– Salt Lake Ave from south of McCallum Ave to Los Angeles River (at-grade with industrial use, above grade from residential use) – City of South Gate ▪ 8-foot-tall soundwall – At-grade on Salt Lake Ave from Southern Ave to south of McCallum Ave – City of South Gate – On aerial structure from Los Angeles River to Frontage Rd – City of South Gate – On aerial structure from eastern end of Paramount High School West Campus/western end of Paramount High School Senior Campus to Somerset Blvd – City of Paramount ▪ 12-foot tall soundwall – At-grade from Somerset Blvd to Hegel St – City of Paramount ▪ Vertical screening element where aerial structure faces backyards of	the Affected Area for visual. Similar visual elements in Affected Area for visual. ▪ Per the MRDC, soundwalls will be landscaped, as appropriate, for graffiti management. **Scenic Resources:** Visual character of scenic resources will not be altered (see Section 4.14 [Historic, Archaeological, and Paleontological Resources]). **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto adjacent properties.	elements will be similar in scale as the surrounding low-rise structures. ▪ Soundwalls and/or vertical screening elements on top of soundwalls will obstruct views of LPA components to and from the residential backyards. **Scenic Resources:** Although the LPA component will obstruct views of Los Angeles River truss bridge from the north, no sensitive viewers are located north of the truss bridge and LPA component will not alter the visual character of the Los Angeles River truss bridge. Northerly views of the Los Angeles River truss bridge from the residential area along Salt Lake Ave will remain available. LPA component will not obstruct views of other scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto areas with light-sensitive users.	▪ Soundwalls and vertical screening elements will limit amount of LRV light that spills over onto adjacent properties. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
residential properties; combined height of vertical screening element and soundwall will be 8 feet – South of Paramount Blvd/Rosecrans Ave to Orizaba Ave/144th St – City of Paramount ▪ See Section 4.7.4.2 and Mitigation Measure NOI-1 (Soundwalls) ▪ See Project Measure VA PM-8 (Residential Screening for Aerial Structures)			
TC&C Houses	**Compatible.** ▪ LPA component consist of small buildings, which will be compatible with surrounding low-rise structures. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not alter visual character and quality of Affected Area for visual. ▪ Sensitive viewers will have little to no reaction as buildings will be small and will fit with scale of Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered as structures will be consistent with scale of surrounding low-rise structures. ▪ Viewer groups will have little to no reaction the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Radio Antennas	**Compatible.** ▪ On a surface parking lot on the rear side of a privately owned entertainment activity center facing PEROW and Bellflower Bike Trail. ▪ If a 35-foot-tall radio antenna is constructed, will be consistent with the scale of low-rise structures in the Affected Area for visual. ▪ If a 55-foot-tall radio antenna is constructed, will be taller than surrounding low-rise structures. The radio antenna will fit the character of the Affected Area for visual as it will be located on a surface parking lot to the rear of a privately owned entertainment center (the location of the MSF site); will not conflict with the character of industrial properties and a mobile home community that are on the opposite side of the PEROW. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual, consisting of low-rise industrial properties, a mobile home community, the unpaved PEROW, and Bellflower Bike Trail. ▪ Views of radio antenna will not be available at nearby residential properties. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Neutral.** ▪ Character and quality of Affected Area for visual will not change. ▪ Viewer groups will have little to no reaction to the change as LPA component will be consistent with visual character of Affected Area for visual; will be situated on a surface parking lot to the rear of a privately owned entertainment activity center. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
TPSS	**Compatible.** ▪ Scale, height, massing, and form will be consistent with low-rise structures in surrounding area; will not degrade overall visual character and quality of area. ▪ TPSS will be located on adjacent LADWP property with overhead utility towers and used as a nursery. **Scenic Resources:** Visual character of scenic resources will not be altered. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Located on adjacent LADWP property between PEROW and rear of residential properties; views of TPSS will be limited. ▪ Viewer groups will have little to no reaction to change; sensitive viewers do not have views of TPSS. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Consistent with character and quality of Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality, and sensitive viewers will not have views of TPSS. ▪ No new sources of light and glare will be created.
Aerial Structures ~32 feet height (~49 feet with station canopy; ~50 feet to top of elevator tower) ▪ Paramount Blvd/ Rosecrans Ave – City of Paramount ~32 feet height (~40 feet with soundwall) ▪ Downey Ave – City of Paramount (Figure 4.4-6)	**Compatible.** ▪ Aerial structures primarily supported by retaining walls; supported by columns where aerial structure will cross over a street. Aerial structure will be new visual element. (Figure 4.4-6) ▪ Trees and some landscaping in PEROW will be removed to accommodate aerial structure. **<u>Paramount Blvd/Rosecrans Ave – City of Paramount:</u>** ▪ Scale will be consistent with surrounding low-rise one-story structures surrounding the Paramount Blvd/Rosecrans Ave intersection; will fit with the commercial character and context of the existing area. ▪ Aerial structure will be visible from backyards of adjacent residential properties, but vertical screening element will be provided (Project Measure VA PM-8) to	**Low.** Visible in foreground; will not detract from character and quality of Affected Area for visual. Paramount Blvd/Rosecrans Ave– City of Paramount: ▪ Aerial structure will be located along northerly edge of Paramount Park and surface parking lot. ▪ Where aerial structures will be adjacent to residential properties, aerial structure will be situated to the rear of residential properties. ▪ Where soundwalls on aerial structures will be less than 8 feet in height, vertical screening elements (Project Measure VA PM-8) will be placed on top of soundwalls on the aerial	**Neutral.** ▪ Will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ LRV lighting will not alter visual character and will not adversely affect sensitive viewers. ▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	limit views of LRV from the backyards of residential properties. **Downey Ave – City of Paramount:** ▪ Existing fences and vegetation in PEROW will be removed; landscaped medians outside work limit will be retained. Scale of aerial structure will be consistent with surrounding low-rise one- and two-story structures. **Scenic Resources:** ▪ Aerial structure will not degrade the visual character of Paramount Park; located along the northeastern boundary of the park, near existing surface parking lot for the park. ▪ "Defiance," a public art sculpture: will not be removed; views of the public art sculpture will remain available in the surrounding area (along Rosecrans Ave and Paramount Blvd). **Lighting:** No lighting for aerial structures. Lighting will primarily emanate from LRVs and is not expected to extend beyond aerial structures. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	structures to limit views to and from the backyards of adjacent residential properties. ▪ Combined height of soundwall and vertical screening element will be at least 8 feet. ▪ Sensitive viewers will have little to no reaction to visual change since residential neighborhood north of PEROW will have limited views; most views blocked by walls and structures on adjacent residential properties. Soundwalls and vertical screening elements will further block views at residential neighborhood; aerial structure will be along northerly edge of Paramount Park and surface parking lot, away from the main park areas. **Downey Ave – City of Paramount:** ▪ Sensitive viewers (residents) on south side of Downey Ave will see a new retaining wall in PEROW (on west and east side of Downey Ave) (Figure 4.4-6). ▪ Sensitive viewers will have little to no reaction to this change as retaining wall will be at a similar scale as surrounding structures. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting:** No lighting for LPA component. See LRV lighting discussion under "LRT Tracks, OCS	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
		Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	
Pedestrian Bridge ▪ Paramount High School	**Compatible.** ▪ Pedestrian bridge connecting the Paramount High School campuses will be reconstructed. Existing bridge is 112 feet long with stairs. New bridge will be 150 feet long with ramps. Although the new bridge will be longer and taller than the existing bridge, the new bridge will not change the visual character of the Affected Area for visual as the new bridge will be at a similar location as the existing bridge (at the northeastern corner of the Paramount High School west campus adjacent to a nursery and transmission towers) and will not alter the visual character of Paramount Park. **Scenic Resources:** LPA component will not obstruct views of Paramount Park since it will be located at the northeast corner of the Paramount High School west campus, adjacent to a nursery and transmission towers. **Lighting:** Lighting is not expected to extend beyond the pedestrian bridge and will be consistent with visual character of Affected Area for visual. **Glare:** Materials to be used will not create new sources of glare.	**Low.** ▪ Reconstructed pedestrian bridge will not detract from visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change because the pedestrian bridge will be at a similar location as the existing bridge, adjacent to the transmission towers and a nursery. **Scenic Resources:** LPA component will not obstruct or alter the view of Paramount Park. **Lighting:** Lighting is not expected to extend beyond the pedestrian bridge and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	**Neutral.** ▪ Consistent with visual character and quality of the Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ Lighting will not alter visual character and will not adversely affect viewer sensitivity. ▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Bridges ▪ Los Angeles River	**Compatible.** ▪ Existing angled views of bridge will continue to be available at residential area south of Southern Ave and to motorists along I-710 freeway and Firestone Blvd. **Scenic Resources:** Los Angeles River Truss Bridge (see Section 4.14) ▪ Scale and massing of new bridge will be larger than existing Los Angeles River truss bridge; the new LRT bridge and the 6- to 8-foot tall soundwall on the LRT bridge will change visual setting of the truss bridge, but new bridge will be compatible with visual character of flood-control channel. ▪ Existing Los Angeles River truss bridge will be retained; new bridge will be constructed immediately northeast and adjacent to existing truss bridge. ▪ New bridge and soundwalls will not obstruct views of existing truss bridge at residential area along Salt Lake Avenue (between Southern Avenue and Los Angeles River) and along I-710 freeway; will obstruct views of bridge from Firestone Blvd and along Los Angeles River Bike Path north of the bridge. ▪ Public parking and stopping points not available on I-710 freeway and Firestone Blvd in immediate area for stationary viewing of this bridge. Area not generally used as stationary vantage points to view the truss bridge. ▪ Access to bicycle path is available on Firestone Blvd; however, heavily	**Low.** ▪ Visible in foreground; will not detract from character and quality of Affected Area for visual around aerial structures. Existing use of Los Angeles River bike trail is low. **Scenic Resources:** Los Angeles River Truss Bridge (see Section 4.14) ▪ Angled views of Los Angeles River truss bridge to remain; will not be obstructed at residential area along Salt Lake Ave (between Southern Ave and Los Angeles River) and at I-710 freeway. ▪ Viewer groups will have little to no reaction to visual change as the new bridge and existing Los Angeles River truss bridge are on a flood-control facility, views are at an angle, views of the truss bridge are limited as motorists travel over the Los Angeles River, and views of the Los Angeles River truss bridge at residential area south of Southern Ave will not be obstructed. Los Angeles River channel ▪ Viewer groups will have little to no reaction to visual change since the new bridge will be on a flood control facility and the size and shape of the Los Angeles River channel will not be altered; no	**Neutral.** ▪ New bridge will be larger than existing Los Angeles River truss bridge; however, new bridge will be consistent with and will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ LRV lighting will not alter visual character and will not adversely affect sensitive viewers. ▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	industrialized area and lack of public parking and stopover points make it difficult to access bicycle path for purpose of viewing the truss bridge. No other stationary vantage points are available north of truss bridge. Los Angeles River channel (See Section 5.2.2.13 of the West Santa Ana Branch Cultural Resources Effects Report) ▪ LPA component will not alter or degrade the visual character of the Los Angeles River channel; will be compatible with the visual character of the Los Angeles River channel. **Lighting:** No lighting on bridge. Lighting will primarily emanate from LRVs and is not expected to extend beyond the rail ROWs. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	sensitive viewers have views of the Los Angeles River channel. **Lighting:** No lighting for bridges. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Tunnels ▪ I-710 – City of South Gate	**Compatible.** **I-710 Freeway:** See Table 4.4.4. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting will not extend beyond tunnels/undercrossing and will be consistent with character of Affected Area for visual. **Glare:** Materials to be used will not create new sources of glare.	**Low.** **I-710 Freeway:** See Table 4.4.4. **Scenic Resources**: LPA component not within viewshed of scenic resources. **Lighting:** No sensitive viewers in Affected Area for visual. Lighting will not extend beyond tunnels/undercrossing and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	**Neutral.** ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ Lighting will not alter visual character and will not adversely affect viewer sensitivity. ▪ LPA component will not create new sources of glare. **I-710 Freeway:** See Table 4.4.4.
Landscape and Billboard Removal	**Incompatible (Without Mitigation); Compatible (With Mitigation)** **Landscaping:** ▪ Vegetation to be removed in San Pedro Subdivision ROW and PEROW; landscaping outside of work limits to be retained. ▪ Per MRDC, landscaping to be installed along the LPA will be design to minimize maintenance. Landscaping that requires intensive maintenance will not be used, and plants that attract rodents and "nuisance" insects, such as white flies, stain pavement or produce excessive litter, will be avoided. ▪ Downey Ave: Vegetation removal within PEROW will not degrade visual character of street; landscaping outside of PEROW will remain.	**Moderate (Without Mitigation); Low (With Mitigation)** ▪ Sensitive viewers will have little to no reaction to the change since changes to landscaping will not detract from visual character and quality of Affected Area for visual. ▪ Vegetation to be removed within or adjacent to PEROW; landscaping outside of work limits will be retained. ▪ Increased visibility of World Energy storage tank cars at residential uses may occur. However, Mitigation Measure VA-1 (Screening at Somerset Boulevard) will reduce viewer sensitivity to low as the storage tank cars (east of the LPA's LRT tracks) will be screened from public views with existing wall or new landscaping and wall.	**Adverse (Without Mitigation); Neutral (With Mitigation)** ▪ Changes to landscaping not expected to alter visual character and quality of Affected Area for visual. ▪ Residents will be sensitive to the changes on Somerset Blvd with the removal of existing decorative wall and landscaping that currently obstruct views of refinery storage tank cars. ▪ Mitigation Measure VA-1 (Screening at Somerset Boulevard) will reduce viewer sensitivity to low as storage tank cars (east of the LPA's LRT tracks) will continue to be screened from public views with existing wall or new landscaping and wall.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	▪ Somerset Blvd: Existing landscaping and decorative wall on south side of World Energy storage tracks could be removed and refinery storage tank cars may be more visible in Affected Area for visual. Mitigation Measure VA-1 (Screening at Somerset Boulevard) requires existing walls and landscaping east of LRT tracks to either remain or be replaced with new landscaping and wall. **Billboard:** No billboards in this landscape unit. **Scenic Resources:** ▪ LPA component will not alter visual character of scenic resources. ▪ Paramount Park: Landscaping located near the park's surface parking lot; landscape removal along northeasterly edge of park not expected to degrade visual character and quality of park. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Scenic Resources:** LPA component will not alter or obstruct views of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Grade-Crossing Modifications	**Compatible.** ▪ Consistent with scale, form, and materials of existing grade crossings. ▪ Existing grade crossing at Frontage Rd (northwest of I-710 freeway) and Miller Way (southeast of I-710 freeway) will be closed; grade crossing is on private industrial property and will not alter industrial character of the Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Type and level of lighting will be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect visual character. **Glare:** LPA components will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not detract from character and quality of Affected Area for visual and will be consistent with visual character of Affected Area for visual. ▪ Viewers will have little to no reaction to the change. No sensitive viewers at Frontage Rd and Miller Way as grade crossing is on a private industrial property. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Type and level of lighting will be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect viewer sensitivity. **Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewers will have little to no reaction to the change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.
Station and Parking Facilities. None will be located in this landscape unit.			

Source: Metro 2024o

Notes:

[1] Overall change in visual quality is determined based on 1) whether LPA components will be visually compatible with the visual character of the Affected Area for visual, and 2) viewer sensitivity associated with the visual changes of the LPA components.

LADPW = Los Angeles Department of Power and Water; LPA = Locally Preferred Alternative; LRT = light rail transit; LRV = light rail vehicle; MSF = maintenance and storage facility; OCS = overhead catenary system; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substation

Figure 4.4-6. Existing and Proposed Views of Downey Avenue, looking South

Existing Downey Avenue

Proposed Downey Avenue

Source: Prepared for Metro by Cityworks Design in 2023

Suburban Residential Landscape Unit: This landscape unit is located in the Cities of Paramount, Bellflower, Cerritos, and Artesia. The alignment will be at-grade with the surrounding uses or on aerial structures in the Suburban Residential Landscape Unit. Sensitive viewers include residents and visitors of the original Bellflower Pacific Electric Station, Artesia Historical Museum, and Old Station #30. Users of Ruth R. Caruthers Park and Rosewood Park are not considered sensitive viewers because views of the PEROW from the two parks are limited by landscaping and fencing/walls.

Table 4.4.7 summarizes the potential effects to the visual character, viewer sensitivity, and visual quality in the Suburban Residential Landscape Unit. Figure 4.4-7 depicts the change in visual character and quality within the PEROW from the residential neighborhood northeast of the Paramount/Rosecrans station. Figure 4.4-8 depicts the change in visual character and quality within the PEROW at Bellflower Boulevard. Figure 4.4-9 depicts the change in visual character and quality at Gridley Road/183rd Street. Figure 4.4-10 depicts the change in visual character and quality at Pioneer Station.

At residential areas, views of LPA components within the PEROW will either be obstructed by soundwalls (Mitigation Measure NOI-1 [Soundwalls]) or by existing walls that are currently located between the PEROW and residential properties. In areas where aerial structures will be located at the rear of residential properties and soundwalls will be less than 8 feet tall, vertical screening elements will limit views to and from LRVs on the aerial structures (Project Measure VA PM-8 [Residential Screening for Aerial Structures]). The soundwalls will also obstruct views of LPA components along some portions of the Bellflower Bike Trail. However, other portions of the Bellflower Bike Trail (such as around Bellflower Boulevard) will have views of LPA components.

Between Hegel Street to Ruth R. Caruthers Park, the Bellflower Bike Trail will share the PEROW with the alignment. Although LPA components will be visible along some portions of the Bellflower Bike Trail and at scenic resources, the realignment of the bike trail east of Bellflower Boulevard and potential removal of some landscaping associated with the bike trail will not degrade the visual character of the PEROW as the PEROW currently contains strips of unpaved land and/or remnants of railroad tracks. LPA components will not detract from views of the original Bellflower Pacific Electric Station. The Artesia Historic District Recreational Trails will share the PEROW with the alignment. Existing views of the PEROW along the Artesia Historic District Recreational Trails currently include wide strips of vacant land and remnants of railroad tracks. With implementation of the LPA, these current views will be replaced with views of LPA components, which include soundwalls, fences, OCS poles, overhead wires, and LRT tracks. The bike trail will remain in the same location as existing conditions.

LPA components will not detract from the visual character and quality of the Affected Area for visual. The level of lighting and glare in the Affected Area for visual will not significantly increase, and the effects of glare will be similar to existing conditions. With the exception of the portion of the landscape unit at Woodruff Avenue/Flora Vista Street, the change in visual quality in this landscape unit will be neutral since LPA components will be compatible with the visual character of the Affected Area for visual and viewer groups in this landscape unit will have little to no reaction to visual changes associated with the LPA components. Additionally, LPA components will not change the natural topography of the Affected Area for visual. Viewer sensitivity to the changes associated with LPA components, bike trail realignment, and potential landscape removal within the PEROW will be low. The LPA components will not detract from the visual character and quality of the Affected Area for visual.

Table 4.4.7. LPA Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential Landscape Unit

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Station Areas ▪ Paramount/Rosecrans Station (Figure 4.4-7) ▪ Bellflower Station (Figure 4.4-8) ▪ Pioneer Station (Figure 4.4-10)	**Compatible.** ▪ Located in an area with low-rise structures; Consistent and fit with character and context of Affected Area for visual; will not detract from visual character of Affected Area for visual. ▪ Design to be sensitive to specific urban context at each station and pedestrian-oriented. ▪ Station design, including signage, will follow MRDC or equivalent, Metro's *Systemwide Station Design Standards*, and Standard/Directive Drawings. ▪ Public art will be integrated into station design to improve visual character per MRDC or equivalent, Metro Systemwide Station Design Standards, and Metro *Art Program Policy*. ▪ Station amenities and signages will be designed and made of materials that deter graffiti. ▪ Signage will include station identification signs, wayfinding signs, and electronic signs that provide real-time arrival information. Signs will be integrated into the station design, canopies, and other structures or elements that are part of the LPA. Signage is not expected to degrade the visual character of the Affected Area for visual. **<u>Paramount/Rosecrans Station:</u>** ▪ Aerial station height not to exceed 47 feet (includes station canopy); will be consistent with scale and massing of surrounding uses. Figure 4.4-7 shows view of aerial station from McClure Ave cul-de-sac in the residential neighborhood north of Rosecrans Ave. Vertical screening element on top of soundwall (Project Measure VA PM-8) will obstruct views of the PEROW from the rear yards of adjacent residential units. See discussion of "Aerial Structure."	**Low.** ▪ Visible in foreground; will be at a similar scale as surrounding structures; will not detract from visual character and quality of Affected Area for visual. ▪ Viewer groups will have little to no reaction to visual changes as station areas will be located in existing rail corridor. **Scenic Resources:** Views of scenic resources will not be obstructed; will remain available to sensitive viewers. **Lighting:** Type and level of lighting at station areas will be similar to those currently present in the Affected Area for visual. Per MRDC, all light sources at station areas will be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses. **Glare:** Station elements will be treated so that new sources of glare are not created and will not affect viewer sensitivity.	**Neutral.** ▪ Compatible with visual character and quality of Affected Area for visual; will not include features that will detract from visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the changes. ▪ Lighting will be directed away from light-sensitive uses. ▪ No new sources of glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Bellflower and Pioneer **Station:** ▪ Height of station canopies and OCS poles not to exceed 20 feet and will be consistent with scale and massing of Affected Area for visual. Figure 4.4-10 shows view of Pioneer Station looking southwest from Pioneer Blvd. **Scenic Resources:** Station elements will not alter the visual character of scenic resources. **Lighting:** Lighting is not expected to extend beyond station areas. Type and level of lighting will be comparable to that currently present in the Affected Area for visual and will not affect visual character. **Glare:** LPA components will not create new sources of glare and will not affect the visual character around the station areas. Stainless steel for certain station elements (e.g., columns, railings, and walls), glass panels, and glass canopies will be used. Glass canopies will be placed horizontally above the station, and canopy angles are not expected to create new sources of glare or affect the visual character around the station areas. Vertical stainless-steel elements and glass panels will be dulled so that new sources of glare will not be created. Materials used for signs will not cast glare.		
Parking Facilities ▪ Paramount/Rosecrans Station ▪ Bellflower Station ▪ Pioneer Station	**Compatible.** ▪ No visually prominent features for parking facilities; landscaping will be designed to improve visual quality of parking facilities. **Paramount/Rosecrans Station:** ▪ Removal of existing industrial structures for surface parking lot will provide views of aerial structure for Paramount Station within PEROW; will fit with character and context of Affected Area for visual. ▪ Aerial structure will be set back farther from Rosecrans Ave than existing industrial structures on the parking site; surface parking lot will reduce	**Low.** ▪ Visible in the foreground. ▪ Viewer groups will have little to no reaction to changes since similar visual elements exist in Affected Area for visual and the parking facilities will fit with the character and context of the Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed; will remain available to sensitive viewers.	**Neutral.** ▪ Compatible with visual character and scale of Affected Area for visual. ▪ Viewers will have little to no reaction to changes. ▪ Lighting levels and effects of glare will be similar to existing conditions and will not affect viewer sensitivity.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	the scale and massing of aerial structure and station. **Bellflower Station:** ▪ Located in commercial area used for automobile auctions that consists of a surface parking lot and low-rise structures; surface parking lot will fit with context of surrounding commercial area. **Pioneer Station:** ▪ Industrial, commercial, and residential structures will be removed and 188th St will be closed to build a five-story parking structure. The parking structure will be taller than the one- to three-story commercial and multifamily residential development along Pioneer Boulevard in the Affected Area for visual but will not be substantially taller and will fit with the character and context of surrounding residential, commercial, and industrial uses (Figure 4.4-10). **Scenic Resources:** LPA component will not alter the visual character of scenic resources. **Lighting:** Lighting will be designed per MRDC or equivalent and will not be expected to extend beyond parking facilities. Type and level of lighting will be similar to that currently present in the Affected Area for visual and will not affect visual character. **Glare:** Sources of glare (e.g., parked vehicles) will be similar to existing conditions and will not be expected to alter visual character.	**Lighting:** Type and level of lighting at parking facilities will be similar to that currently present in the Affected Area for visual. Per MRDC, all light sources at surface parking lots will be directed downward and toward parking lots to minimize potential spillover onto surrounding properties, including light-sensitive uses. **Glare:** Sources of glare (e.g., parked vehicles) will be similar to existing conditions and will not affect viewer sensitivity.	
LRT Tracks, OCS Poles and Overhead Wires, and Utility Poles	**Compatible.** ▪ Scale and form consistent with existing freight tracks, utility poles, and wires; will not conflict with visual character of Affected Area for visual. Similar visual elements along and across street rights-of-way and rail ROWs in Affected Area for visual. ▪ South of Somerset Blvd, new LRT tracks will be installed within PEROW; will be consistent with existing visual character of the PEROW, which	**Low.** ▪ Visible in foreground; viewer groups will have little to no reaction to visual changes due to similar visual elements in the Affected Area for visual. **Scenic Resources:** ▪ Views of scenic resources will not be obstructed.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not change; similar visual elements exist in Affected Area for visual.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	currently consists of remnants of freight tracks in some areas and wide strips of unpaved land. **Scenic Resources:** ▪ LPA component will not alter the visual character of scenic resources. ▪ LPA components will be new visual elements but views of the original Bellflower Pacific Electric Station will remain available north and south of PEROW and along Bellflower Bike Trail; will not detract from or obstruct north- and south-facing views of original Bellflower Pacific Electric Station. Similar visual elements are in the Affected Area for visual (e.g., utility poles and lines, traffic signals, buses and other vehicles, and fencing). Additional landscaping will be installed along the Bellflower Bike Trail, which will enhance views in this area. ▪ Located behind 10040 Flora Vista St, Rosewood Park, Artesia Historical Museum, and Old Station #30 and will not obstruct views of these scenic resources. Existing wall along southerly perimeter of Rosewood Park blocks views of PEROW from park. **Lighting:** ▪ No lighting for OCS poles and overhead wires. If utility poles associated with the LRT have lights, the light intensity will be comparable to lighting levels of the surrounding area. ▪ LRVs will be a new source of light since the PEROW does not have any existing transportation-related lighting (e.g., freight trains and LRVs); light intensity from LRVs and utility poles will be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along surrounding streets, which currently produce transportation-related light.	▪ Views of original Bellflower Pacific Electric Station, 10040 Flora Vista St, Artesia Historical Museum, and Old Station #30 will remain available. **Lighting:** Lighting from LRVs traveling along LRT tracks and utility poles will be directed away from residential uses and other light-sensitive uses; LRV lighting and lighting from utility poles will not affect light-sensitive viewers. **Glare:** Materials to be used will not create new sources of glare.	▪ Viewers will have little to no reaction to the change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Glare: LRVs along tracks will not be a substantial source of glare. Materials to be used for LPA components will not create new sources of glare.		
Fences and Retaining Walls Along at-grade portions that parallel a street ROW	**Compatible.** ▪ Similar visual elements in area; properties facing PEROW currently have fences or walls along property lines. Fences along rail ROW will be 6 feet tall; will be consistent and fit with visual character of Affected Area for visual. ▪ Per MRDC, retaining walls will be treated to prevent defacement and landscaping will be provided where feasible as a long-term deterrent to graffiti. When plantings on walls are precluded, architectural treatments, such as bas-relief and decorative form-liners, will be used. **Scenic Resources:** Fences and retaining walls will not obstruct views of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not degrade overall visual character and quality of Affected Area for visual as similar visual elements exist in Affected Area for visual. ▪ Viewer groups will have little to no reaction to visual changes. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not change; similar visual elements and lighting levels exist in Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ No new sources of light and glare will be created.
Soundwalls & Vertical Screening Elements ▪ 4-foot-tall soundwalls – On aerial structure from east of Civic Center Dr to Woodruff Ave – City of Bellflower ▪ 6-foot tall soundwalls – On aerial structure from north of Racine Ave to Paramount Blvd/Rosecrans Ave – City of Paramount	**Compatible.** ▪ Soundwalls and vertical screening elements will not detract with overall visual character of Affected Area for visual. Height of aerial structure with soundwall will be approximately 36 feet to 44 feet tall; height of aerial structure with soundwall will be consistent with scale and massing of surrounding low-rise structures. ▪ At-grade soundwalls along perimeter of San Pedro Subdivision ROW and PEROW will obstruct views of rail ROW. Soundwalls will be of similar height as surrounding low-rise structures and walls along rear of properties facing rail ROWs. ▪ Views of LPA components within PEROW will be limited along portions of the existing Bellflower Bike Trail and/or its surrounding area; views of existing Bellflower Bike Trail will no longer be	**Low.** ▪ Visible in foreground; views of scenic resources will remain available. ▪ Viewer groups will have little to no reaction to visual changes as soundwalls will be consistent with low-rise structures in Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light along the rail ROWs from spilling over onto areas with light-sensitive users.	**Neutral.** ▪ Visual character and quality of the Affected Area for visual will not change as similar visual elements exist in Affected Area for visual. ▪ Soundwalls and vertical screening elements will be at similar scale as surrounding structures and will limit amount of LRV light that spills over onto adjacent properties. ▪ Viewers will have little to no reaction to the change.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
▪ 8-foot-tall soundwalls – At-grade from Alondra Blvd to Bellflower Blvd – City of Bellflower – At-grade at and east of Civic Center Dr, on aerial structure east of Civic Center Dr – City of Bellflower – On aerial structure from Happy St to north of Racine Ave – City of Paramount – On aerial structure east of Civic Center Dr – City of Bellflower – On aerial structure east of 186th St to South St – Cities of Artesia and Cerritos ▪ 8- and 10-foot tall soundwalls – On aerial structure from Woodruff Ave to California Ave/Walnut St – City of Bellflower ▪ 10-foot tall soundwall – At-grade from Clark Ave to	available along some areas; however, scale and massing of at-grade soundwalls will be consistent with surrounding low-rise structure and soundwalls. ▪ Where aerial structure will be situated to the rear of residential properties, vertical screening element will be placed on top of soundwall to obstruct views of LRV vehicles from the residences; height of aerial structure with vertical screening element on top of soundwall will be approximately 40 feet tall; height of aerial structure with vertical screening element on top of soundwall will be consistent with scale and massing of surrounding low-rise structures. ▪ Per MRDC, soundwalls will be landscaped, as appropriate, for graffiti management. ▪ Figure 4.4-7 shows view of soundwall and vertical screening element looking south from McClure Ave cul-de-sac. **Scenic Resources:** Soundwalls will not alter visual character of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare; walls will limit the amount of light from LRVs that will spill over onto adjacent properties.		▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Alondra Blvd – City of Bellflower – At-grade from California Ave/Walnut St to San Gabriel River – City of Bellflower – On aerial structure and at-grade from Harvest Ave to east of 186th St – Cities of Cerritos and Artesia ▪ 12-foot tall soundwall – At-grade from Hegel St to Clark Ave – City of Bellflower – At-grade from Bellflower Blvd to Civic Center Dr – City of Bellflower – On aerial structure west of Harvest Ave – City of Cerritos ▪ 12- to 16-foot tall soundwalls – At-grade for freight tracks (between Century Freeway-Transitway Historic District and Paramount Blvd/Rosecrans Ave) – City of Paramount			

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
▪ Vertical screening element where aerial structure faces backyards of residential properties and soundwalls are less than 8 feet tall; combined height of vertical screening element and soundwall will be 8 feet – North of Racine Ave to Paramount Blvd/Rosecrans Ave – City of Paramount – Flora Vista Dr from Flower St to Woodruff Ave – City of Bellflower ▪ See Section 4.7.4, Mitigation Measure NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls) ▪ See Project Measure VA PM-8 (Residential Screening for Aerial Structures)			

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
TC&C Houses	**Compatible.** ▪ TC&C houses will be small buildings; compatible with surrounding low-rise structures. **Scenic Resources:** LPA component will not alter visual character of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will be similar in scale as surrounding low-rise structures. ▪ Viewer groups will have little to no reaction. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.
TPSS	**Compatible.** ▪ Scale, height, massing, and form consistent with low-rise residential character of Affected Area for visual; will not degrade overall visual character and quality of area. ▪ Per MRDC, TPSS site will be landscaped if in residential area or will incorporate design features to screen or improve appearance of the structure; local ordinances for screening will be followed; not expected to contrast with existing visual character and quality of surrounding residential neighborhood. **Scenic Resources:** LPA component will not alter visual character of scenic resources. **Lighting and Glare:** No lighting for structures. Materials to be used will not create new sources of glare.	**Low.** ▪ Visible in foreground; will not detract from character and quality of Affected Area for visual. ▪ Located in rail ROW, rear of MSF site, adjacent to PEROW, at parking facility for Bellflower Station, or on vacant properties. ▪ Landscaping to be incorporated if TPSS is in residential area. ▪ Viewer groups will have little to no reaction to TPSS; consistent with the scale of uses in the Affected Area for visual. **Scenic Resources:** Views of scenic resources will not be obstructed. **Lighting and Glare:** LPA component will not create new sources of light and glare. Viewer sensitivity will not be altered.	**Neutral.** ▪ Consistent and will not degrade overall visual character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Radio Antennas	**Compatible.** ▪ Similar components (utility poles) located in Affected Area for visual; next to Paramount Station parking structure. ▪ 35-foot-tall radio antennas will be consistent with scale of low-rise structures. 60-foot-tall radio antennas will be taller than structures in the Affected Area for visual but will not degrade overall visual character and quality of Affected Area for visual since similar components (utility poles) located in Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Low.** ▪ Visible in foreground; will not detract from visual character and quality of Affected Area for visual. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting and Glare:** LPA component will not create new sources of light and glare.	**Neutral.** ▪ Character and quality of the Affected Area for visual will not change. ▪ Viewer groups will have little to no reaction to the change. ▪ No new sources of light and glare will be created.
Aerial Structures ~ 32 feet height (~36 feet with soundwall ▪ East of Civic Center Dr to Flower St – City of Bellflower ~32 feet height (up to ~40 feet with soundwall or vertical screening element on top of soundwall) ▪ Happy St to Paramount Blvd/Rosecrans Ave – City of Paramount ▪ Woodruff Ave/Flower St/Flora Vista St –City of Bellflower ~32 feet height (up to ~42 feet with soundwall)	**Incompatible (Without Mitigation); Compatible (With Mitigation).** ▪ No scenic views located in Affected Area for visual for aerial structures. ▪ Aerial structures will be new visual element. **<u>Happy St to Paramount Blvd/Rosecrans Ave (including Paramount/Rosecrans Station) – City of Paramount:</u>** ▪ New visual element; will be visible along commercial area around Paramount Blvd/Rosecrans Ave intersection (particularly with the removal of industrial structures for the parking facility), at cul-de-sacs and at Arthur Ave/Rose St, and at cul-de-sacs in residential neighborhood north of Rosecrans Ave. Will also be visible from backyards of adjacent residential properties. Vertical screening element (Project Measure VA PM-8) will block views of LRT vehicles on aerial structures from rear yards of adjacent residential properties (Figure 4.4-7). Residential structures limit views of aerial structure from public ROW since aerial structure is situated between the rear of	**Moderate (Without Mitigation); Low (With Mitigation)** ▪ Visible in foreground; will not detract from character and quality of Affected Area for visual around aerial structures; where soundwalls will be less than 8-feet tall; Project Measure VA PM-8 will provide vertical screening elements on top of soundwalls to block the line-of-sight between LRT vehicles on aerial structures and the rear yards of adjacent residential properties. ▪ Soundwalls and/or vertical screening elements on top of soundwalls will limit views of LPA components on the aerial structures at residential backyards. **<u>Happy St to Paramount Blvd/Rosecrans Ave (including</u>**	**Adverse (Before Mitigation); Neutral (After Mitigation)** ▪ Located within PEROW; will not degrade visual character and quality of rail ROWs and Affected Area for visual. ▪ Removal of "Belle" will not detract from visual character and quality of PEROW and viewers generally will not be sensitive to the change, but statue has aesthetic value to City of Bellflower. ▪ "Belle" will be relocated to a different location with implementation of Mitigation Measure VA-2 (Relocation of "Belle") and City of Bellflower will be able preserve public

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
▪ Woodruff Ave to California Ave/Walnut St – City of Bellflower ▪ Gridley Rd/183rd St – Cities of Cerritos and Artesia ~32 feet height (~47 feet to top of station canopy) ▪ Paramount/Rosecrans Station – City of Paramount	adjacent residential properties; views of aerial structure will be mostly blocked by walls and structures on adjacent residential properties. ▪ Aerial structures primarily supported by columns at and northwest of the Paramount Blvd/Rosecrans Ave intersection. Paramount/Rosecrans Station platform and as it crosses over Rosecrans Ave/Paramount Blvd. Straddle bents where alignment turns from San Pedro Subdivision ROW to PEROW. ▪ Consistent with surrounding one- and two-story structures; fit with character and context of existing area. ▪ See "Parking Facilities" for further discussion. **East of Civic Center Dr to California Ave/Walnut St – City of Bellflower:** ▪ New visual element in area with low-rise commercial and residential structures; scale consistent with surrounding low-rise structures. ▪ Aerial structure will be visible along Bellflower Bike Trail, Flora Vista St, Flower St, and Woodruff Ave as well as in the residential backyards of adjacent residential properties. Soundwalls (Mitigation Measure NOI-1) or vertical screening elements on top of soundwalls (Project Measure VA PM-8) will block views of LRT vehicles on aerial structures from rear yards of adjacent residential properties; primarily supported by retaining walls and will be supported on columns between Flower St and Woodruff Ave. ▪ Landscaping at Bellflower Bike Trail within PEROW will be removed to accommodate aerial structure; landscaping outside of the work limits will remain. Users of bike trail and residents facing alignment (along Flora Vista St) will see a retaining wall within PEROW.	**Paramount/Rosecrans Station) – City of Paramount:** ▪ Retaining wall and columns that support the aerial structure will be new visual elements. ▪ Where soundwalls will be less than 8-feet tall, Project Measure VA PM-8 will provide vertical screening elements on top of soundwalls to block views of LRT vehicles on aerial structures from residential backyards. ▪ Viewer groups will have little to no reaction to visual change as aerial structures will be compatible with the surrounding area and soundwalls and/or vertical screening elements will be provided to obstruct views of LPA components to and from the residential backyards. **East of Civic Center Dr to California/Walnut St – City of Bellflower – City of Bellflower:** ▪ Retaining wall and columns that support the aerial structure will be new visual elements. Visible from residences south of PEROW (primarily from second-story windows) and along north side of Flora Vista St. ▪ Aerial structure may be visible from residential backyards that adjoin the PEROW, and residential backyards may be visible from the top of the aerial structure.	art at a city-approved location. ▪ LRV lighting will not alter visual character and will not adversely affect sensitive viewers. ▪ LPA component will not create new sources of glare.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Gridley Rd/183rd St – Cities of Cerritos and Artesia: ▪ New visual element (Figure 4.4-9); will be visible at Gridley Rd/183rd St and at the residential backyards of adjacent residential properties northwest and southeast of the intersection. Soundwalls (Mitigation Measure NOI-1) will block views of LRT vehicles on aerial structures from rear yards of adjacent residential properties. Scale and massing consistent with surrounding one- and two-story structures and fit with character and context of area. ▪ No scenic resources in the area. ▪ Soundwalls will block views of LRT vehicles on aerial structures from rear yards of adjacent residential properties. **Scenic Resources:** ▪ "Belle" public art cow statue in PEROW near Woodruff Ave/Flower St/Flora Vista St will be removed; will not detract from or conflict with visual character of area as statue is in PEROW, which has been historically used as a rail corridor and contains remnants of railroad tracks. ▪ Although removal of "Belle" will not conflict with visual character of the ROW, the public art statue has aesthetic value to the city and, thus, removal of statue will have an adverse effect. Mitigation Measure VA-2 (Relocation of "Belle") will reduce LPA-related effects on "Belle." **Lighting:** No lighting for aerial structures. Lighting will primarily emanate from LRVs and is not expected to extend beyond aerial structures. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	▪ Residents will have little to no reaction to change as the aerial structure will be compatible with the surrounding area; soundwalls and/or vertical screening elements on top of soundwalls will obstruct views of LPA components to and from the residential backyards. **Gridley Rd/183rd St– Cities of Cerritos and Artesia:** ▪ Views of retaining walls primarily obstructed by landscaping and/or walls that surround residential properties; some views of aerial structure will be visible at residential properties (including residential backyards) (Figure 4.4-9). ▪ Aerial structure may be visible from residential backyards that adjoin the PEROW. ▪ Residents will have little to no reaction to change as the aerial structure will be compatible with the surrounding area and soundwalls will obstruct views of LPA component to and from the residential backyards; aerial structure and screening elements will not obstruct any scenic views and scenic resources. **Scenic Resources:** ▪ Residents will have little to no reaction to removal of "Belle" as existing residential views of	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
		statute is limited due to angled views at residential properties. ▪ View of "Belle" at existing location from the bike trail will be gone; however, users of Bellflower Bike Trail generally do not access bike trail for purpose of viewing the statue and the statue is located within a rail corridor with remnants of railroad tracks that are visible in surrounding area. ▪ Mitigation Measure VA-2 (Relocation of "Belle") will relocate "Belle" to a city-approved location where residents can continue to view the statue. **Lighting:** No lighting for LPA component. See LRV lighting discussion under "LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles." **Glare:** Materials to be used will not create new sources of glare.	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Undercrossing ▪ SR-91 – City of Bellflower	**Compatible** ▪ No tunnels or new undercrossing under SR-91. LRVs will travel under SR-91 using the existing passageway. **Scenic Resources:** LPA component not within viewshed of scenic resources. **Lighting:** Lighting will not extend beyond undercrossing and will be consistent with character of Affected Area for visual. **Glare:** Materials to be used will not create new sources of glare.	**Low** ▪ Limited views of PEROW at SR-91 freeway; PEROW situated below SR-91 freeway and between rear of Ruth R. Caruthers Park and residential properties. ▪ Landscaping around undercrossing limits views from park and residential area; viewer groups will have little to no reaction to change. **Scenic Resources**: LPA component not within viewshed of scenic resources. **Lighting:** No sensitive viewers in Affected Area for visual. Lighting will not extend beyond undercrossing and will not affect viewer sensitivity. **Glare:** Materials to be used will not create new sources of glare.	**Neutral** ▪ Viewer groups will have little to no reaction to changes in visual character and quality. ▪ Consistent with character of Affected Area for visual; will not degrade overall visual character and quality of Affected Area for visual. ▪ Lighting will not alter visual character and will not adversely affect viewer sensitivity. ▪ LPA component will not create new sources of glare.
Landscape and Billboard Removal	**Compatible.** **<u>Landscaping:</u>** ▪ Where landscaped medians intersecting PEROW, and vegetation and decorative lighting within PEROW to be removed; landscaping outside of work limits to be retained. Landscaping will be replaced in residential areas if adequate space available. ▪ Existing landscaping, street amenities, fences, bollards, and billboards to be removed for installation of railroad tracks and other grade-crossing components. Vegetation removal will modify streetscape character at streets that intersect with PEROW but not expected to degrade visual quality of affected streets. ▪ Removal of vegetation on south side of Century Freeway-Transitway Historic District between San	**Low.** ▪ Changes to landscaping and billboard removal will not detract from visual character and quality of Affected Area for visual; changes located in existing rail ROW or on a strip of land between Century Freeway-Transitway Historic District and residential properties are currently blocked by fences. ▪ Viewers will have little to no reaction to the change as landscape and billboard removal will only occur within LPA work limits, which primarily consist of rail ROW and adjacent properties	**Neutral.** ▪ Landscaping will be replaced in residential areas if adequate space available; landscape removal not expected to degrade visual character and quality of Affected Area for visual; landscaping within work limits of rail ROWs is limited. ▪ Viewers will have little to no reaction to the change. ▪ No new sources of light and glare will be created.

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
	Pedro Subdivision ROW and Arthur Ave to accommodate a new sidewalk will not adversely affect visual character because views of this area are currently blocked by fences. ▪ Landscaping on Bellflower Bike Trail between Flower St and Woodruff Ave will be removed to accommodate support columns for the aerial structure; will not change character of Bellflower Bike Trail since existing landscaping and design of the bike trail characterizes the PEROW as a rail transit corridor. Landscape removal not expected to degrade visual quality of Affected Area for visual and Bellflower Bike Trail. ▪ Landscaping to be installed along the LPA will follow the MRDC, which requires landscape design to minimize maintenance requirements. Landscaping that requires intensive maintenance will not be used, and plants that attract rodents and "nuisance" insects, such as white flies, stain pavement or produce excessive litter, will be avoided. **Billboard:** Billboards within rail ROWs will be removed; will not adversely affect visual character of area (Figure 4.4-8). **Scenic Resources:** LPA components will not alter visual character of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	that will be acquired for LPA component. **Scenic Resources:** LPA components will not alter views of scenic resources. **Lighting and Glare:** LPA components will not create new sources of light and glare.	

LPA Components	Visual Character	Viewer Sensitivity	Change in Visual Quality[1]
Grade Crossing Modifications	**Compatible.** ▪ Although grade crossings will be new visual element at some street rights-of-way (e.g., street rights-of-ways south of the SR-91 freeway), grade-crossing elements will be consistent with scale and visual character of the street rights-of-way as transportation corridors (Figure 4.4-8 and Figure 4.4-10). ▪ Closure of 187th Street at the PEROW will introduce new curbs, signs, walls, fences, or other barriers into the street ROW; these new elements will be consistent with the scale, massing, and form of the Affected Area for visual. **Scenic Resources:** Unobstructed north-facing views of original Bellflower Pacific Electric Station will remain available south of PEROW and along Bellflower Bike Trail (Figure 4.4-8). **Lighting:** Type and level of lighting will be consistent with those present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect visual character. **Glare:** LPA components will not create new sources of glare.	**Low.** ▪ Visible in foreground; grade-crossing modifications will not detract from character and quality of Affected Area for visual. ▪ Viewers will have little to no reaction to the change as grade crossings will be consistent with scale of Affected Area for visual and visual character of street rights-of-way. **Scenic Resources:** LPA component will not obstruct or alter views of scenic resources. **Lighting:** Type and level of lighting will be similar to those currently present in the surrounding street rights-of-way and existing grade crossings. Lighting will not affect viewer sensitivity. **Glare:** LPA components will not create new sources of light and glare.	**Neutral.** ▪ Visual character and quality of Affected Area for visual will not be altered. ▪ Viewers will have little to no reaction to change. ▪ Lighting will be consistent with existing visual character of Affected Area for visual, and viewer groups will have little to no reaction to changes in lighting. ▪ No new sources of glare will be created.
Pedestrian Bridges, Bridges, and Tunnels. None will be located in this landscape unit.			

Source: Metro 2024o

Notes:

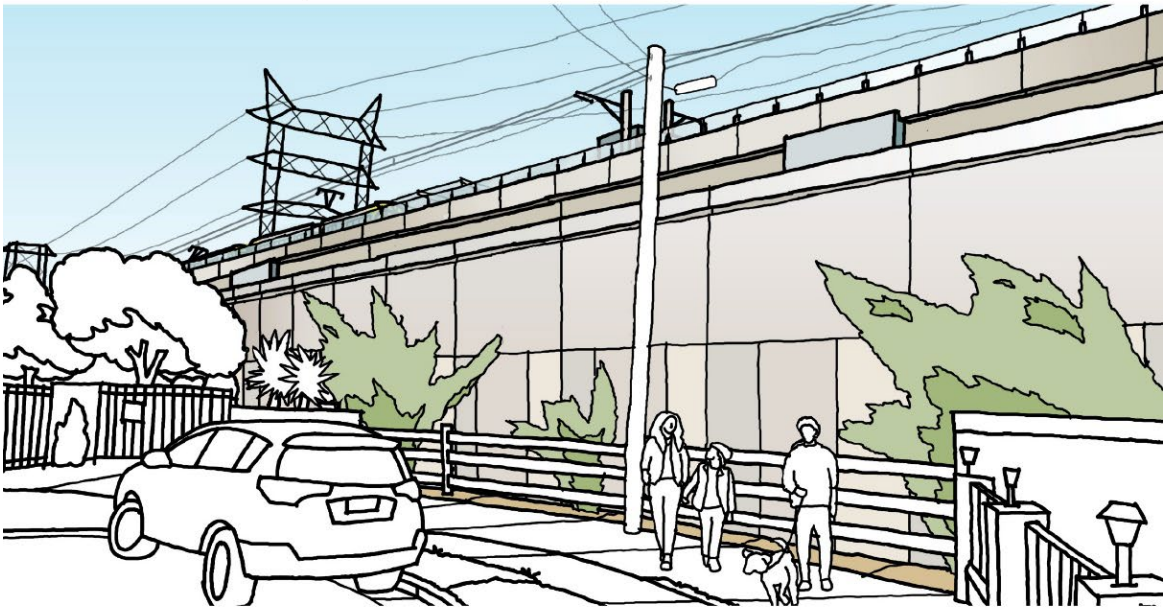
[1] Overall change in visual quality is determined based on 1) whether LPA components will be visually compatible with the visual character of the Affected Area for visual, and 2) viewer sensitivity associated with the visual changes of the LPA components.

LPA = Locally Preferred Alternative; LRT = light rail transit; LRV = light rail vehicle; MRDC = Metro Rail Design Criteria; MSF = maintenance and storage facility; OCS = overhead catenary system; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substation

Figure 4.4-7. Existing and Proposed Views of Paramount/Rosecrans Station at McClure Avenue, looking South

Existing Rail ROW at Paramount/Rosecrans Station

Proposed Rail ROW at Paramount/Rosecrans Station



Source: Prepared for Metro by Cityworks Design in 2023

Figure 4.4-8. Existing and Proposed Views of Bellflower Boulevard, looking East from Bellflower Bike Trail

Existing Bellflower Boulevard

Proposed Bellflower Boulevard

Source: Prepared for Metro by Cityworks Design in 2023

Figure 4.4-9. Existing and Proposed Views at Gridley Road, looking South towards Aerial Structure

Existing Gridley Road

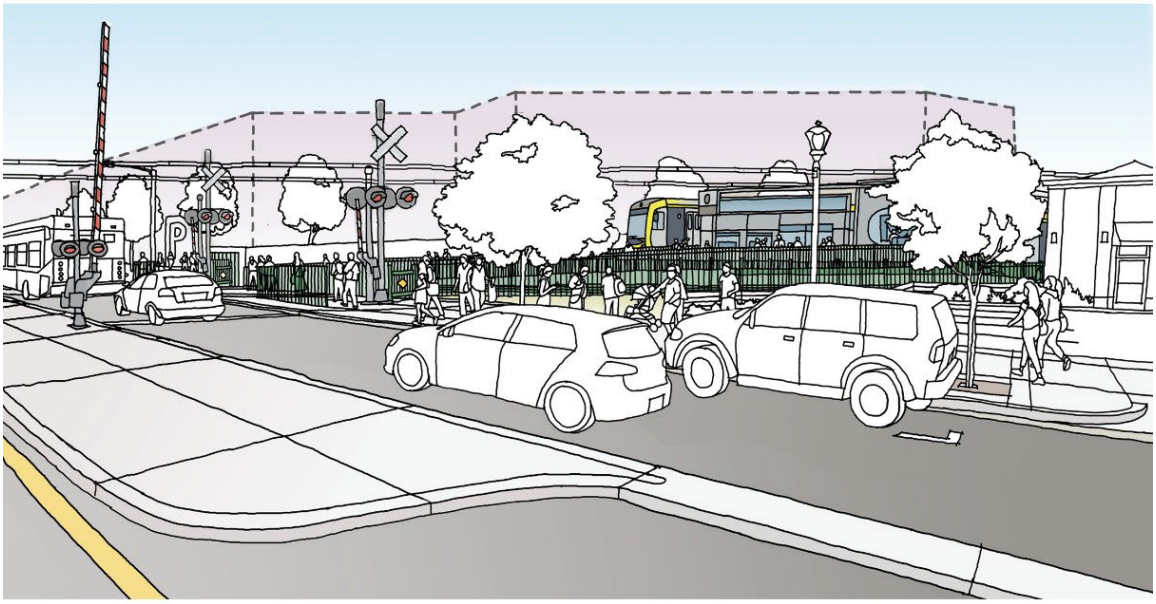
Proposed Gridley Road

Source: Prepared for Metro by Cityworks Design 2023

Figure 4.4-10. Existing and Proposed Views at Pioneer Boulevard, looking Southwest toward Pioneer Station Area

Existing Pioneer Boulevard

Proposed Pioneer Boulevard



Source: Prepared for Metro by Cityworks Design 2023

At Woodruff Avenue/Flora Vista Street, "Belle," a bronze public art cow statue at the southeast corner of Woodruff Avenue/Flora Vista Street, will be removed to accommodate the retaining walls for the aerial structure. The statue area has limited aesthetic value since the PEROW consists of primarily a wide strip of dirt land, a patch of grass on which the statue is situated, and remnants of a railroad track. The removal of "Belle" will not conflict with or detract from the visual character of the Affected Area for visual; however, the statue is a piece of public art that has aesthetic value to the City of Bellflower; therefore, removal of the statue will be considered an adverse effect to the visual environment. However, with implementation of Mitigation Measure VA-2 (Relocation of "Belle"), "Belle" will be relocated in coordination with the City of Bellflower, and no adverse effect will occur.

Summary of Visual Quality for LPA: The LPA will not change the natural topography of the Affected Area for visual and will not obstruct views of or alter the visual character and quality of scenic resources. No scenic vistas are available in the Affected Area for visual. The level of lighting and glare in the Affected Area for visual will not significantly increase, and the effects of glare will be similar to existing conditions. At Somerset Boulevard, the existing landscaping and decorative wall on the south side of the World Energy storage tracks (east of the LRT tracks) could be removed, which will make the refinery storage tank cars more visible to sensitive viewers (residents). Views of the storage tank cars will not be visually compatible with the surrounding residential area, and residents will be sensitive to the change in visual character. While the LPA will not adversely affect views of several scenic resources, the "Belle" public art cow statue, which has aesthetic value to the City of Bellflower, will be removed. Therefore, adverse visual effects will occur with the removal of the "Belle" public art cow statue and the decorative wall and landscaping at Somerset Boulevard. With implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle), no adverse effects will occur. Under NEPA, with the implementation of mitigation, the LPA will not result in adverse effects related to visual character and quality.

4.4.3.3 Design Option: Close 186th Street

The design option to close 186th Street and keep the 187th Street grade crossing open in the City of Artesia would be in the Suburban Residential Landscape Unit. No scenic vistas are available in the Affected Area for visual. The closure of 186th Street at the PEROW would not degrade the visual character of the Affected Area for visual because the scale, massing, and form of the Affected Area for visual would remain similar to existing conditions. The changes associated with the street closure would be similar in character as the existing 186th Street right-of-way as a transportation corridor. No new lighting is proposed for this design option. Lighting levels would be similar to existing conditions and would not affect the visual character of the Affected Area for visual. No new sources of glare would be created. The design option would not degrade the visual character of the Affected Area for visual. Sensitive viewers (residents) would have little to no reaction to the changes associated with this design option. Changes to visual quality are expected to be neutral because the visual character of the design option would be similar to the visual character of the existing street right-of-way as a transportation corridor. Viewer sensitivity to the changes would be low. Effects for the LPA with the design option would be similar to those for the LPA without the design option. Therefore, no adverse effects would occur for this design option.

4.4.3.4 Maintenance and Storage Facility

No scenic vistas, unique visual elements, landforms, or topographic features are present in the Affected Area for visual for the MSF site. The MSF site will introduce low-rise structures, storage tracks, a radio antenna, and other industrial-related features to the Affected Area for visual. Security lighting for all buildings and areas within the MSF site will be provided. Lead tracks will be installed within the PEROW south of the MSF site. The scale and massing of the structures and other elements associated with the MSF site will be consistent with the low-rise commercial, industrial, and residential structures surrounding the MSF site. The lead tracks will not detract from the visual character of the PEROW immediately south of the MSF site, which currently contains the Bellflower Bike Trail, its associated landscaping, and a wide strip of unpaved land. A radio antenna will be placed to the rear of the MSF site, near the PEROW, and will not be visible at the surrounding residential areas.

Lighting is not expected to spill over outside of the MSF site boundaries since light sources will be shielded so that nighttime lighting is focused on the MSF site. Additionally, the MSF site does not include the use of materials that will be a substantial source of glare. Nighttime lighting levels will be consistent with the visual character of the Affected Area for visual, and no sensitive viewers will be affected by lighting and glare.

Tall trees and vines along the easterly perimeter of the MSF site currently obstruct views of the site from a residential neighborhood. Existing vegetation along the northerly and southerly perimeters of the MSF site (along Somerset Boulevard and the PEROW, respectively) partially obstruct views of the MSF site. The existing landscaping and barriers along the perimeter of the MSF site will either remain or be replaced with other types of landscaping and barriers that will obstruct views of this MSF site from the surrounding residential uses. As a result, viewer groups will have little to no reaction to changes associated with the MSF site. Changes in visual quality will be neutral since the visual character of the area, nighttime lighting levels, and sources of glare will be consistent and compatible with the existing visual character of the Affected Area for visual, and viewer groups will have little to no reaction to the changes due to the mixed commercial, industrial, and residential character of the Affected Area for visual, as well as the landscaping and barriers that obstruct views of the MSF site. The landscaping and barriers will also limit the amount of light that will spill over onto nearby properties. Development of the MSF site will not result in the visual degradation of the area. Under NEPA, the MSF site will not result in adverse effects related to visual character and quality.

4.4.3.5 U.S. Army Corps of Engineers Facilities

The LPA will cross three USACE facilities: the concrete-lined Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel. The Los Angeles River channel is in the Suburban Residential and Industrial Landscape Unit. The Rio Hondo channel and San Gabriel River channel are in the Industrial Landscape Unit. An existing freight bridge is located over each of the three river channels. The truss bridge over the Los Angeles River channel, the Rio Hondo channel, and the San Gabriel River channel are considered scenic resources. At the Los Angeles River channel and Rio Hondo channel, a new bridge for the LRT tracks will be constructed at the northeast side of the existing freight bridges. A 6- to 8-foot-tall soundwall will be placed on the new bridge for the LRT tracks over the Los Angeles River channel. At the San Gabriel River channel, the existing freight bridge will be removed and replaced with a new bridge for the LRT tracks. A 10-foot-tall soundwall will be placed on the new bridge over the San Gabriel River channel. The effects of the new LRT bridge at the

Los Angeles River channel on visual character, viewer sensitivity, and visual quality are described in Table 4.4.6 under "Bridges." The effects of the new LRT bridges at the Rio Hondo channel and San Gabriel River channel are described in Table 4.4.4 under "Bridges." As described in the two tables, the scale and massing for the three bridges will be larger than the existing freight bridges. However, the new LRT bridges will be compatible and fit with the visual character and context of the concrete-lined flood-control channels and will be consistent with the visual character of the existing freight bridges. Additionally, the new LRT bridges will be at a similar location and height as the existing freight bridges. The new LRT bridges will not degrade the overall visual character and quality of the concrete-lined river channels.

Viewer groups of the Affected Area for visual at the Los Angeles River and San Gabriel River channels include residents to the west of the Los Angeles River and San Gabriel River channels, users of the Los Angeles River Bike Path, users of the San Gabriel River Trail, and motorists on nearby roadways. Viewer groups of the Affected Area for visual at the Rio Hondo channel consist of users of the Rio Hondo River Trail and motorists on nearby roadways. Residents west of the Los Angeles River and San Gabriel River channels and motorists will have angled views of the bridges. Motorists will have little to no reaction to the new LRT bridges at the Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel since views of the bridges will be fleeting and viewers' attention will be focused on the road. At the residential area between Southern Avenue and the Los Angeles River, the new LRT bridge and soundwalls will be located behind the Los Angeles River truss bridge and will not obstruct views of the Los Angeles River truss bridge. Views of the Los Angeles River channel will remain available and the visual character of the Los Angeles River channel will not be altered. Existing angled views of the Los Angeles River truss bridge will continue to be available at the residential area. The new LRT bridge also will not obstruct views of the Los Angeles River truss bridge from the I-710 freeway but will obstruct views from Firestone Boulevard and along the Los Angeles River Bike Path north of the bridge. The I-710 freeway and Firestone Boulevard in the immediate area do not have any stationary viewing areas available to view the Los Angeles River truss bridge. Although access to the Los Angeles River Bike Path is available on Firestone Boulevard, the area surrounding the Los Angeles River channel is heavily industrialized and lacks public parking and stopover points, making it difficult to access the Los Angeles River Bike Path for the purpose of viewing the truss bridge. Similarly, some residents have views of the San Gabriel River channel through their rear yards. Users of the Rio Hondo River Trail and San Gabriel River Trail also have views of the Rio Hondo channel and San Gabriel River channel, respectively. Views of the Rio Hondo channel and San Gabriel River channel will remain available, and the visual character of the two river channels will not be altered by the LPA.

Viewer sensitivity in the Affected Area for visual associated with the Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel will be low due to the angled views of the bridges over the Los Angeles River and San Gabriel River channels at the residences and nearby roadways, the lack of sensitive viewers at the Rio Hondo channel, the mixed industrial and residential character of the area surrounding the Los Angeles River channel, and the industrialized character of the area surrounding the Rio Hondo and San Gabriel River channels.

No lighting will be within the rail ROWs at these three river channels. Lighting will primarily emanate from LRVs and is not expected to extend beyond the rail ROWs. Additionally, the LRT bridges do not involve the use of any materials that will create new sources of glare. The

level of nighttime lighting and the effects of glare in the Affected Area for visual will not significantly increase. The existing visual quality of the three river channels is low, and the introduction of the LRT bridges at these river channels will not further degrade the visual quality of the Los Angeles River, Rio Hondo channel, and San Gabriel River. Therefore, adverse visual effects are not expected.

4.4.4 Project Measures and Mitigation Measures

4.4.4.1 Project Measures

This section describes the project measures that will be implemented as part of the LPA. Project Measure VA PM-1 will require that LPA components maintain a consistent visual appearance throughout the alignment and will also require that LPA components near residential properties are designed to maintain the visual character of the residential area. Project Measure VA PM-2 will contribute to the aesthetics of the station areas. Project Measures VA PM-3 through VA PM-5 will soften the appearance of the LPA components along the rail ROWs and at TPSS sites in residential areas. Project Measure VA PM-6 will ensure that project elements outside of the rail ROW and public rights-of-way are designed in a manner that are consistent with the surrounding land uses, which are required to comply with the local zoning ordinances. Project Measure VA PM-7 will ensure that lighting will not substantially alter the existing lighting levels of the surrounding properties. Project Measure PM-8 will provide a vertical screening element on aerial structures to limit views of LRVs from the backyards of residential properties in locations where soundwalls are not sufficiently tall to provide screening.

VA PM-1 **Design Standards.** LPA components, including but not limited to track alignment, auxiliary facilities, parking facilities, and MSF site options, will be designed per MRDC, Metro's *Systemwide Station Design Standards*, and Standard/Directive Drawings, or equivalent.

VA PM-2 **Public Art.** Public art will be installed at station areas and will follow MRDC or equivalent, Metro's *Systemwide Station Design Standards,* and *Metro Art Program Policy*.

VA PM-3 **Landscaping.** New landscaping will be installed consistent with MRDC and *Systemwide Station Design Standards,* or equivalent.

VA PM-4 **Landscaping Screening.** TPSSs in residential areas will be landscaped or incorporate design features to screen or improve the appearance of structures.

VA PM-5 **Landscaping at MSF Site.** At the MSF site, existing landscaping and barriers facing residential areas will either remain in place or will be replaced with other types of landscaping and barriers that will obstruct views of the MSF site from residential areas.

VA PM-6 **Local Zoning Ordinances.** LPA elements that are located on properties outside of the rail ROW and public ROW will adhere to local zoning ordinances as they pertain to scenic quality.

VA PM-7 **Lighting.** Operational lighting will be consistent with MRDC or equivalent. Lighting will be directed away from surrounding properties.

VA PM-8 **Residential Screening for Aerial Structures.** Where aerial structures will be situated adjacent to the rear of residential properties in the Cities of Paramount, Bellflower, Cerritos, and Artesia and the height of the soundwalls (Mitigation Measure NOI-1) on top of the aerial structures will be less than eight feet, a vertical screening element will be placed at the top of the soundwalls on the aerial structures to block the line-of-sight between the LRT vehicles on the aerial structures and the rear yards of adjacent residential properties. The combined height of the vertical screening element and soundwall will be at least eight feet.

4.4.4.2 Mitigation Measures

The following mitigation measures will be implemented for the LPA to minimize adverse effects related to visual character and quality at Somerset Boulevard, associated with the "Belle" public art cow statute, and where aerial structures are adjacent to the rear of residential properties:

VA-1 Screening at Somerset Boulevard. The existing World Energy landscaping and decorative wall north of Somerset Boulevard and east of the light rail transit tracks will remain in place with the exception of a segment parallel to the storage tracks. If segments of the existing decorative screening wall and/or landscaping directly south of the World Energy storage tracks and east of the light rail transit tracks are removed, these screening elements will be replaced with a new screening wall and/or landscaping that are at least as decorative in terms of design, materials, and screening height as the existing wall and landscaping. A decorative screening wall and/or landscaping will be placed within the Pacific Electric Right-of-Way between the light rail transit tracks and storage tracks at a length and height capable of screening the refinery storage track from views on Somerset Boulevard.

VA-2 Relocation of "Belle." Metro will provide relocation site alternatives to determine the best possible location to relocate the public art statue, "Belle," in its existing condition, subject to a condition assessment detailing the current physical condition of the artwork. The site will be subject to approval by the City of Bellflower.

Refer also to Mitigation Measure NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls) in Section 4.7.4.2, Noise and Vibration.

4.4.5 California Environmental Quality Act Determination

4.4.5.1 Threshold VIS-1: Would the Project have a substantial adverse effect on a scenic vista?

No Project Alternative

No scenic vistas are present in the Affected Area for visual. Therefore, no impact is expected for scenic vistas and mitigation would not be required.

Locally Preferred Alternative

No scenic vistas are present in the Affected Area for visual. As such, the LPA is not expected to adversely affect scenic vistas. None of the views in the Affected Area for visual are

considered unique or of aesthetic significance. Although distant north-facing views of the mountains are available at a few locations, the built-out urban landscape (e.g., intervening structures, trees, and utility poles) prevent clear views of the mountains. Thus, no impacts on scenic vistas will occur and mitigation is not required.

Design Option: Close 186th Street

No scenic vistas are located in the Affected Area for visual. Therefore, no impacts on scenic vistas would occur and mitigation is not required.

Maintenance and Storage Facility

No scenic vistas are located in the Affected Area for visual. Therefore, no impacts on scenic vistas will occur and mitigation is not required.

4.4.5.2 Threshold VIS-2: Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Project Alternative

No state scenic highways are located within the Affected Area for visual. Therefore, no scenic resources within a state scenic highway would be affected. No impact would occur and mitigation is not required.

Locally Preferred Alternative

No state scenic highways are located within the Affected Area for visual. Therefore, no scenic resources within a state scenic highway will be affected. No impact will occur and mitigation is not required.

Design Option: Close 186th Street

No state scenic highways are located within the Affected Area for visual. Therefore, no scenic resources within a state scenic highway would be affected. No impact would occur and mitigation is not required.

Maintenance and Storage Facility

No state scenic highways are located within the Affected Area for visual. Therefore, no scenic resources within a state scenic highway will be affected. No impact will occur and mitigation is not required.

4.4.5.3 Threshold VIS-3: In nonurbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

No Project Alternative

Under the No Project Alternative, the visual character and quality of the Affected Area for visual would remain similar to existing conditions. Therefore, no impact is expected under the No Project Alternative and mitigation is not required.

Locally Preferred Alternative

Figure 4.4-2 through Figure 4.4-10 show existing and LPA-related changes in visual character and quality at various locations within the Affected Area for visual. As discussed in Section 4.4.1.2, the jurisdictions within the Affected Area for visual are considered urbanized areas in accordance with *CEQA Guidelines* Section 15387. Since the LPA will occur in an urbanized area, a significant impact will occur if the LPA conflicts with applicable zoning and other regulations governing scenic quality. While each jurisdiction within the Affected Area for visual has a zoning ordinance that regulates scenic quality of development projects, the zoning ordinances do not directly regulate the design of transportation infrastructure elements, including LRT. Additionally, Metro projects are not required to adhere to local zoning ordinances. However, certain LPA elements that will be located on properties outside of the rail ROWs and public street rights-of-way (such as station entrances and TPSSs) will comply with local zoning ordinances as they pertain to scenic quality.

The LPA will remove the existing decorative wall and landscaping on the south side of the World Energy storage tracks (east of the LRT tracks) in the City of Paramount and the "Belle" public art cow statue in the City of Bellflower. The decorative wall and landscaping that will be removed, as well as the "Belle" public art cow statue, are within the PEROW. Removal of the decorative wall and landscaping on the south side of the World Energy storage tracks (east of the LRT tracks) will make the refinery storage tank cars within the PEROW more apparent along Somerset Boulevard and will not comply with Section 44.82(53) of the City of Paramount Municipal Code, which requires open storage or outdoor uses be concealed from view from nearby streets and adjoining property by buildings or solid masonry walls not less than 6 feet in height. Mitigation Measure VA-1 (Screening at Somerset Boulevard) will be implemented so that the LPA will comply with Section 44.82(53) of the City of Paramount Municipal Code, and views of the World Energy storage tracks will continue to be blocked by a decorative screening wall and landscaping.

The "Belle" public art cow statue was installed as part of the City of Bellflower's public arts program (codified in City of Bellflower Municipal Code Chapter 3.32) and has aesthetic value to the city. With the removal of the "Belle" public art cow statue, the LPA will be inconsistent with the program's intent of promoting visual arts in the city. So that the city will not lose one of its permanent outdoor artworks, Mitigation Measure VA-2 (Relocation of "Belle") will require Metro to coordinate with the city to relocate the "Belle" public art cow statue so that the public art cow statue will continue to be displayed in the city.

The LPA will follow the MRDC or equivalent, *Metro Art Program Policy* (Metro 2020g), *Systemwide Station Design Standards* (Metro 2018e), and *Standard/Directive Drawings* (Metro 2017d). MRDC provides a uniform basis for the design of light rail projects; *Metro Art Program Policy* (Metro 2020g) allocates a minimum 0.5% of capital project construction costs for public art; the *Systemwide Station Design Standards Policy* (Metro 2018e) provides a consistent, streamlined systemwide design approach for Metro stations that includes sustainable design features and sustainable landscaping; and Metro requires its rail projects to incorporate architectural directive and standard drawings based on lessons learned from past rail projects completed by Metro (*Standard/Directive Drawings*).

As the LPA will conflict with the City of Paramount Municipal Code requirement to conceal views of open storage areas and the City of Bellflower's public arts program, significant impacts on visual character and quality will occur without implementation of mitigation

measures. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle") will be required to reduce impacts to less than significant levels.

Mitigation Measures: Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle").

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Design Option: Close 186th Street

The design option would be in the City of Artesia, which is considered an urbanized area under *CEQA Guidelines* Section 15387. The proposed street closure at 186th Street would occur within the public street right-of-way. The City of Artesia Municipal Code does not include regulations that govern the scenic quality of public street rights-of-way. The proposed street closure at 186th Street would be designed to maintain the existing visual character of the street right-of-way and its surroundings. It would not substantially degrade the existing visual character of the area and its surroundings. Therefore, impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

The MSF site will be located in the City of Bellflower, which is considered an urbanized area under CEQA Guidelines Section 15387. The MSF site will follow MRDC or equivalent and Metro's Standard/Directive Drawings (Metro 2017d). Activities occurring within the MSF site will also adhere to the City of Bellflower zoning ordinances and other city regulations governing scenic quality, where applicable. Therefore, impacts will be less than significant and mitigation will not be required.

4.4.5.4 Threshold VIS-4: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Project Alternative

Under the No Project Alternative, lighting levels and sources of light and glare would remain similar to existing conditions. Existing lighting from the Metro A (Blue) Line LRVs and freight trains traveling within the rail ROWs would not change. Light and glare effects in year 2042 would remain similar to existing conditions. Therefore, no impact on light and glare would occur and mitigation is not required.

Locally Preferred Alternative

LPA-related lighting will primarily emanate from LRVs and station areas (including at-grade and above-grade station platforms and parking facilities). LPA-related lighting will primarily occur along the rail ROW, street rights-of-way, and/or new parking facilities. Lighting will be designed per MRDC or equivalent and will be directed toward the rail ROWs, street rights-of-way, and/or new parking facilities. Light emanating from aerial structures will be directed away from adjacent residential uses and other light-sensitive use. Lighting from LRVs (on at-grade tracks and on aerial structures) is not expected to extend beyond the rail ROWs or public street rights-of-way. Per MRDC, all light sources at the surface parking lots and stations will be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses. Light intensity from LRVs is expected to be comparable to lighting from existing buildings, vehicles, LRVs from the existing Metro A

(Blue) Line (along the Wilmington Branch ROW), freight trains along the rail ROWs, and the Paramount Bike Trail.

South of Somerset Boulevard, LRVs will be a new source of light within the Affected Area for visual since the PEROW south of Somerset Boulevard does not have any existing transportation-related lighting (e.g., freight trains and LRVs). However, light intensity from the LRVs south of Somerset Boulevard will be consistent with vehicle lights along surrounding streets, which currently produce transportation-related light. LRV lighting will also be consistent with existing lighting levels along the Bellflower Bike Trail and Artesia Historic District Recreational Trails.

Existing walls that separate adjacent properties from the PEROW will limit the amount of light along the PEROW from spilling over onto adjacent properties in the portions of the rail ROWs that are between the rears of properties on both sides (e.g., from Randolph Street to Gage Street, Atlantic Avenue to Southern Avenue, Los Angeles River to Meadow Road, Imperial Highway to Virginia Avenue, Bellflower Boulevard to Cornuta Avenue, and Flora Vista Park to South Street).

None of the LPA components are expected to be a substantial source of glare. Station areas will follow the MRDC or equivalent, Metro's *Systemwide Station Design Standards*, and Standard/ Directive Drawings. Metro's *Systemwide Station Design Standards* include the use of stainless steel for certain station elements (such as columns, railings, and walls), glass panels, and glass canopy. The glass canopy will be placed horizontally above the stations. The angle in which the canopy will be placed is not expected to create new sources of glare around the station areas. Vertical stainless-steel elements and glass panels could create new sources of glare; however, based on Metro design criteria and standards, the station elements that will use stainless steel materials will be dulled so that new sources of glare are not created.

The LPA components are not expected to result in a substantial change in existing light and glare in the Affected Area for visual. Therefore, impacts will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

The design option would not create new sources of substantial light and glare and would not increase the amount of light and glare in the Affected Area for visual. Lighting from vehicles traveling 186th Street and other streets in the surrounding area would stay within the public street rights-of-way, where similar light sources and levels currently exist. The proposed street closure would not cause lighting from vehicles to be directed toward properties and would not cause vehicles to cast glare toward the surrounding properties. Effects with the design option would be similar to the LPA without the design option. Therefore, impacts related to light and glare would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

The MSF site will include security lighting for all buildings and areas within the MSF site. Per MRDC, lighting at the MSF site is required to provide sufficient illumination to permit operating and maintenance activities to be performed safely on a 24-hour basis. These requirements include maintaining a minimum illumination of average-maintained one-foot candle in all areas; requiring yard lights to be mounted on buildings or other structures whenever it is possible to minimize the need for separate yard lighting support structures; and designing and locating lights to maximize maintenance accessibility, minimize shadows,

minimize light pollution, and avoid interference with operations. Lighting is not expected to spillover or create glare outside of the MSF site boundaries since light sources will be shielded so that nighttime lighting is focused on the MSF site. Additionally, the MSF site does not include the use of materials that will be a substantial source of glare. Thus, impacts on light and glare will be less than significant and mitigation will not be required.

4.5 Air Quality

This section summarizes the existing air quality conditions in the Affected Area for air quality, daily air pollutant emissions under the No Build Alternative and the LPA, including the design option and MSF, and evaluates the potential adverse effects and impacts on air quality. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Air Quality Impact Analysis Report* (Metro 2024i).

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA and design option. Specifically, comments were received regarding the versions of the California Emissions Estimator Model (CalEEMod) published by the California Air Pollution Control Officer's Association (CAPCOA) and the California Air Resources Board (CARB) EMission FACtor (EMFAC) mobile source emissions inventory model used to complete the air quality analysis for the Draft EIS/EIR. The Draft EIS/EIR used CalEEMod Version 2016.3.2 and EMFAC2017 to estimate pollutant emissions during construction and operation. The analysis for the Final EIS/EIR is updated using versions CalEEMod 2020.4.0 (CAPCOA 2021) and EMFAC2021 (CARB 2022c) of these modeling tools. CalEEMod Version 2022.1 is currently available through a web platform but is still in final development and not available for use in the Final EIS/EIR analysis. CalEEMod 2020.4.0 is used to estimate operational emissions at the MSF, as well as in the construction analysis that is documented in detail in Section 4.19.3.5 (Construction-related Air Quality) of this Final EIS/EIR. EMFAC2021 is used to estimate the daily emissions generated by regional on-road vehicle travel for existing conditions, the No Build Alternative in 2042, and the LPA in 2042.

Comments were also received related to recent state regulations requiring the elimination of sales of new fossil-fuel-powered vehicles statewide by the year 2035 (codified under the CARB Advanced Clean Cars II Regulations – Resolution 22-12 [CARB 2022d]), and whether these regulatory developments were accounted for in the Draft EIS/EIR analysis. The operational on-road mobile source emissions analysis disclosed in the Draft EIS/EIR used the EMFAC2017 version of the CARB mobile source emissions inventory application to estimate operational mobile source air pollutant emissions. This version of the EMFAC tool was released prior to adoption of the Advanced Clean Cars II Regulation and did not account for the new accelerated timeline for phasing out sales of new vehicles powered by fossil fuels. The Final EIS/EIR analysis uses the EMFAC2021 version of the application, which accounts for the implementation of the Advanced Clear Cars II Regulation. This adjustment within the EMFAC database results in greater reductions in emissions on aggregate average throughout the on-road vehicle fleet between 2017 and 2042. Therefore, compared to existing conditions, the reduction in criteria pollutant and ozone precursor emissions associated with changes in on-road vehicle travel is greater in the Final EIS/EIR analysis than the reduction disclosed in the Draft EIS/EIR. However, the emissions reduction for the LPA is of lesser magnitude when compared to the No Build Alternative in 2042, as the emissions analyzed for the No Build Alternative also account for implementation of the Advanced Clean Cars II Regulations.

Additionally, this section has been updated to include the evaluation of compatibility with the most current air quality regulations, plans, and policies, including the South Coast Air Quality Management District (SCAQMD) 2022 Air Quality Management Plan (AQMP). Due to the availability of newer data published in the CARB and the SCAQMD air monitoring databases, local air quality data based on concentrations of pollutants measured at air monitoring sites within the Affected Area for air quality have been updated to include data from 2018 and 2019. The air quality impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. No mitigation measures are required.

4.5.1 Regulatory Setting and Methodology

4.5.1.1 Regulatory Setting

The applicable federal, state, regional, and local air quality regulatory framework includes, but is not limited to, the federal Clean Air Act (CAA), California Clean Air Act (CCAA), SCAQMD AQMP (SCAQMD 2022), SCAG 2016-2040 RTP/SCS (SCAG 2016a) and 2020-2045 RTP/SCS(SCAG 2020), and the Metro *Green Construction Policy* (Metro 2011b) and *Moving Beyond Sustainability Strategic Plan (*Metro 2019). The Transportation Conformity requirements are based on CAA Section 176, which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the State Implementation Plan (SIP) for attaining the National Ambient Air Quality Standards (NAAQS). Transportation Conformity applies to highway and transit projects and is enforced at both the regional and project level. A project must conform at both levels to receive federal funds.

Regulated Air Pollutants

Air pollution is defined as any discharge, release, or other propagation into the atmosphere, and includes, but is not limited to, smoke, charred paper, dust, soot, grime, carbon, fumes, gases, odors, particulate matter (PM), acids, or any combination thereof (California Health and Safety Code, Chapter 2, Section 39013). Sources of air pollution can be classified as stationary sources (e.g., industrial processes, generators), mobile sources (e.g., automobiles, trucks), or area sources (e.g., residential water heaters).

Criteria air pollutants are pollutants for which the federal and state governments have established ambient air quality standards (AAQS) to protect public health and welfare. Criteria air pollutants regulated by the federal and state governments include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter 10 microns or less in diameter (PM_{10}), fine particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and lead (Pb). Table 4.5.1 summarizes the properties and associated health effects of exposure to these pollutants, in addition to ultrafine PM, diesel PM, and toxic air contaminants.

Table 4.5.1. Criteria Air Pollutants and Characteristics

Pollutant	Characteristics
Carbon Monoxide (CO)	▪ Colorless, odorless gas formed by incomplete combustion of fossil fuels (e.g., motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains). ▪ Excess exposure can reduce the blood's ability to transport oxygen, causing dizziness, fatigue, and impairment of central nervous system functions.
Ozone (O_3)	▪ Colorless gas and secondary pollutant formed by complex atmospheric interactions between two or more reactive organic gas compounds (including VOC and NO_X) in the presence of ultraviolet sunlight. Automobile travel and industrial sources are the greatest source of atmospheric O_3 formation. ▪ Short-term exposure (lasting for a few hours) to O_3 levels typically in Southern California can result in breathing pattern changes, restricted breathing, increased susceptibility to infections, inflammation of lung tissue, and immunological changes.
Nitrogen Dioxide (NO_2)	▪ Formed in the atmosphere through chemical reaction between NO and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to O_3 formation and contribute to the formation of PM_{10}. ▪ High concentrations can cause breathing difficulties, are linked to chronic pulmonary fibrosis, an increase of bronchitis in children (two and three years old), and result in a brownish-red cast to the atmosphere with reduced visibility.
Respirable Particulate Matter (PM_{10})	▪ Comprised of airborne liquid and solid particles (e.g., smoke, soot, dust, salts, acids, and metals) formed by atmospheric chemical reactions of gases emitted from industrial and motor vehicles. ▪ Results from crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. ▪ Collects in the upper portion of the respiratory system and can increase the number and severity of asthma, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.
Fine Particulate Matter ($PM_{2.5}$)	▪ Formed in the atmosphere from gases (i.e., SO_2, NO_X, and VOC) and results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities); residential fireplaces, and wood stoves. ▪ Inhalation (i.e., Pb, sulfates, nitrates, chlorides, ammonia) can be absorbed into the bloodstream and damage human organs, tissues, and cells throughout the body. Suspended $PM_{2.5}$ can damage and discolor surfaces and produce haze and reduce regional visibility.
Ultrafine Particulate Matter (PM)	▪ Results from engine combustion and post-combustion atmospheric interactions. ▪ Includes internal combustion engines. Particles emitted from gasoline-powered engines are less than 80 nm (0.08 µm) in diameter; particles from engines fueled by compressed natural gas are between 20 nm and 60 nm (0.02 µm – 0.06 µm). ▪ Can rapidly penetrate organs, tissues, cells, and subcellular organelles, where they induce structural damage.

Pollutant	Characteristics
Sulfur Dioxide (SO_2)	▪ Refers to any compounds of sulfur and oxygen. A colorless, pungent gas that forms primarily through the combustion of sulfur-containing coal and oil. ▪ Stringent controls placed on stationary SO_2 emissions and limits on sulfur content of fuels have reduced atmospheric SO_2 concentrations. Highest levels of SO_2 are found near large industrial complexes (e.g., power plants) and can harm plant leaves and erode iron and steel. ▪ An irritant gas that attacks the throat and lungs; can cause acute respiratory symptoms and diminished lung function in children.
Lead (Pb)	▪ Occurs in atmosphere as PM emitted from leaded gasoline combustion; manufacture of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelting facilities. ▪ Phased-out leaded gasoline reduced overall airborne Pb by 95% between 1978 and 1987. Current emission sources of greater concern include lead smelters, battery recycling, and manufacturing facilities. ▪ Prolonged exposure can lead to serious threats to human health (i.e., gastrointestinal disturbances, anemia, kidney disease, and neuromuscular and neurological dysfunction). Infancy and childhood exposure can impair neurobehavioral performance.
Toxic Air Contaminants (TACs)	▪ Can exist as PM_{10} and $PM_{2.5}$ or as vapors (gases), metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources; no corresponding ambient air quality standard. ▪ Emitted by a variety of industrial processes (e.g., petroleum refining, electric utility and chrome plating operations, gasoline stations, dry cleaners, and motor vehicle exhaust). ▪ May increase a person's risk of developing cancer and/or other serious health effects; does not automatically create a health hazard.
Diesel Exhaust	▪ Emitted from a broad range of diesel engines; on-road diesel engines (e.g., trucks, buses, and cars); off-road diesel engines (e.g., locomotives, marine vessels, and heavy-duty equipment). ▪ Causes health effects from both short-term (acute) exposures and long-term (chronic) exposures; nature and severity of health effects depends upon several factors (i.e., dose and duration of exposure). ▪ Acute exposure may irritate eyes, nose, throat, and lungs; neurological effects (e.g., lightheadedness); elicit cough or nausea; or exacerbate asthma. Chronic inhalation exposure is likely a carcinogen and may lead to increased lung cancer rates in occupational settings.

Source: CARB, 2018
Notes: µm = micrometers; nm = nanometers; NO = nitric oxide; NOx = nitrogen oxide; VOC = volatile organic compounds

Ambient Air Quality Standards

The U.S. Environmental Protection Agency (USEPA) is authorized to establish NAAQS that set protective limits on concentrations of air pollutants in ambient air. As required by the CAA, NAAQS have been established for CO, O_3, NO_2, PM_{10}, $PM_{2.5}$, SO_2, and Pb. The CCAA is administered by the CARB at the state level and the Air Quality Management District at the regional and local levels. The CCAA requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest feasible date. The NAAQS and CAAQS are summarized in Table 4.5.2.

Table 4.5.2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	CAAQS
Ozone (O_3)	1 Hour	—	0.09 ppm (180 µg/m^3)
	8 Hour	0.07 ppm (137 µg/m^3)	0.07 ppm (137 µg/m^3)
Carbon Monoxide (CO)	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
	8 Hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.10 ppm (188 µg/m^3)	0.18 ppm (339 µg/m^3)
	Annual Average	0.053 ppm (100 µg/m^3)	0.030 ppm (57 µg/m^3)
Sulfur Dioxide (SO_2)	1 Hour	0.075 ppm (196 µg/m^3)	0.25 ppm (655 µg/m^3)
	24 Hour	0.14 ppm (180 µg/m^3)	0.04 ppm (105 µg/m^3)
Respirable Particulate Matter (PM_{10})	24 Hour	150 µg/m^3	50 µg/m^3
	Annual Average	—	20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	35 µg/m^3	—
	Annual Average	12 µg/m^3	12 µg/m^3
Lead (Pb)	30-Day Average	—	—
	3-Month Average	0.15 µg/m^3	—
Visibility Reducing Particles	8 Hour	—	Extinct 0.23/km
Sulfates	24 Hour	—	25 µg/m^3
Hydrogen Sulfide	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride	24 Hour	—	0.01 ppm (26 µg/m^3)

Source: CARB 2018
Notes: CAAQS = California Ambient Air Quality Standards; km = kilometer; NAAQS = National Ambient Air Quality Standards; ppm = parts per million; µg/m^3 = micrograms per cubic meter; "—" = not available

4.5.1.2 Methodology

The Affected Area for air quality is located within the LA County portion of the South Coast Air Basin (Basin). The Basin represents the Affected Area for air quality at the regional scale because all sources of emissions associated with construction and operations will be located within it, and the attainment status of the LA County portion is most representative of regional air quality conditions. Under NEPA and CEQA, air quality impacts are typically characterized by estimates of air pollutant emissions within the Affected Area for air quality that are assessed on daily timescales in terms of pounds per day (lbs/day) of pollutants emitted. Defining a baseline for emissions comparisons differs under NEPA and CEQA. The NEPA

assessment evaluates daily air pollutant emissions from direct and indirect sources that will be generated by the LPA—including induced changes in regional on-road vehicle emissions due to transportation mode shift—in the horizon year of 2042 relative to Existing Conditions and the future No Build Alternative. Existing Conditions represent a baseline year of 2017 based on the CEQA Notice of Preparation date. The CEQA assessment evaluates direct and indirect sources of emissions that will be generated by the LPA if operational in 2017 relative to Existing Conditions, and qualitatively considers induced changes to daily regional on-road vehicle travel under the Existing plus Project condition for the LPA.

The direct sources of operational air pollutant emissions associated with the LPA will be Metro employee vehicle and vendor trips and area/energy sources associated with operation of the rail system and the MSF, which represent relatively minor sources of emissions in terms of Metro systemwide air pollutant emissions (a vast majority of which are attributed to the bus fleet). Operation of the MSF will create employee and vendor vehicle trips, and area and energy source emissions associated with landscaping and facility upkeep. The California Emissions Estimator Model (CalEEMod, version 2020.4.0) produces emissions estimates using widely accepted methodologies and data, including, but not limited to, USEPA AP-42 emission factors, CARB vehicle emissions models, and local air district data. CalEEMod was used to estimate air pollutant emissions associated with MSF operations in 2017 and 2042 based on proposed preliminary site plans for the MSF. As the MSF site is a component of the LPA, operational emissions associated with the MSF are accounted for in the air quality impact discussions for the LPA.

As a transit project, the effects that project implementation will have on regional air quality are represented in terms of long-term changes in regional transportation emissions from vehicles traveling on the roadway network within the Affected Area for air quality. The LPA will induce transportation mode shift throughout the region by replacing vehicle trips with transit ridership. Table 4.5.3 presents the daily on-road vehicle miles traveled (VMT) occurring throughout the Affected Area for air quality under Existing Conditions, with implementation of the LPA if operational in 2017, the 2042 No Build Alternative, and 2042 with implementation of the LPA. Results of the transportation modeling forecast that regional VMT will decrease by 0.016 percent in 2017. By 2042, the LPA will reduce daily VMT within the Affected Area for air quality by approximately 0.022 percent relative to the No Build Alternative. The 2042 analysis represents a characterization of the holistic, long-term benefits of the Project as TOD expands within the Affected Area for air quality around the LPA stations.

Table 4.5.3. Affected Area Daily Vehicle Miles Traveled – 2017 Existing and 2042 Scenarios

	2017 Existing Conditions	2017 Existing + Locally Preferred Alternative	2042 No Build Alternative	2042 Locally Preferred Alternative
Locally Preferred Alternative	463,245,820	463,173,975	606,329,911	606,199,041
Change vs. Existing		**(71,845)**	**143,084,090**	**142,953,220**
% Change vs. Existing		**(0.016%)**	**30.89%**	**30.86%**
			Change vs. No Build Alternative	**(130,870)**
			% Change vs. No Build Alternative	**(0.022%)**

Source: Metro 2024i

CARB maintains a statewide mobile source emissions inventory, which is accessible through the mobile source EMFAC model interface. The mobile source emissions inventory is CARB's tool for assessing the populations, activities, and emissions from mobile sources throughout California. The EMFAC model is developed and used by CARB to assess emissions from on-road vehicles, including cars, trucks, and buses in California, and to support CARB's regulatory and air quality planning efforts to meet the FHWA transportation planning requirements. USEPA approves EMFAC for use in State Implementation Plan and Transportation Conformity analyses; the most recently approved version of the model is EMFAC2021. To robustly assess long-term direct and indirect air quality impacts of the Project, emissions from daily regional VMT presented in Table 4.5.3 under the No Build Alternative and the LPA in 2042 were estimated using EMFAC2021 and combined with operational emissions associated with the MSF analyzed in CalEEMod. The EMFAC2021 model produces factors for air pollutant emissions per VMT that correspond to specific areas of California for various vehicle types in desired analysis years. The regional vehicle fleet in the Affected Area for air quality was estimated to be approximately 7 percent trucks using regional transportation modeling, and emissions were estimated for each of the VMT datasets presented in Table 4.5.3.

SCAQMD established mass daily thresholds for emissions during operation of CEQA projects. Under CEQA, a significant regional air quality impact may occur if incremental increases in daily emissions exceed any of the threshold values presented in Table 4.5.4.

Table 4.5.4. SCAQMD Air Quality Significance Thresholds – Operation Mass Daily Thresholds

Pollutant	Threshold Value (lbs/day)
Volatile Organic Compounds (VOC)	55
Nitrogen Oxides (NO_X)	55
Carbon Monoxide (CO)	550
Sulfur Oxides (SO_X)	150
Respirable Particulate Matter (PM_{10})	150
Fine Particulate Matter ($PM_{2.5}$)	55
Lead (Pb)	3

Source: SCAQMD 2019
Note: lbs/day = pounds per day; SCAQMD = South Coast Air Quality Management District

Potential impacts related to localized CO hot-spot emissions are evaluated following the methodology prescribed in the *Transportation Project-Level Carbon Monoxide Protocol* (Caltrans 2010) developed for Caltrans by the Institute of Transportation Studies. Potential impacts related to localized PM were evaluated using the USEPA and FHWA guidance manual, *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (USEPA and FHWA 2015). Mobile source air toxics (MSAT) emissions were evaluated using the FHWA *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* (FHWA 2016). Regional conformity was analyzed by comparing the Project's design, concept, and scope to its description in the 2020-2045 SCAG RTP/SCS and associated air quality analyses.

4.5.2 Affected Environment/Existing Conditions

4.5.2.1 Regional Air Quality Conditions

The CAA grants the USEPA authority to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether representative pollutant concentrations within the area have consistently been measured below the NAAQS. The Basin represents the Affected Area for air quality at the regional scale because all sources of emissions associated with construction and operations will be located within it, and the designation status of the LA County portion is most representative of regional air quality conditions. As shown in Table 4.5.5, the USEPA has classified the LA County portion of the Basin as a nonattainment area for O_3, $PM_{2.5}$ and Pb and a maintenance area for PM_{10} and CO. The Los Angeles County portion of the Basin has been designated in attainment of the NO_2 NAAQS since 1998 and attainment of the SO_2 NAAQS since the 1990 Clean Air Act Amendments.

Table 4.5.5. National and State Attainment Status for Criteria Pollutant Standards – Los Angeles County

Pollutant	Averaging Time	NAAQS Status	CAAQS Status
Ozone (O_3)	1 Hour	Revoked – Not Applicable	Nonattainment
	8 Hour	Nonattainment (Extreme)	Nonattainment
Carbon Monoxide (CO)	1 Hour	Attainment (Maintenance)	Attainment
	8 Hour	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Unclassifiable/Attainment	Attainment
	Annual Average	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2)	1 Hour	Unclassifiable/Attainment	Attainment
	24 Hour	Unclassifiable/Attainment	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	Attainment (Maintenance)	Nonattainment
	Annual Average	No Federal Standard	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	Nonattainment (Serious)	No State Standard
	Annual Average	Nonattainment (Moderate)	Nonattainment
Lead (Pb)	30 Day Average	No Federal Standard	Attainment
	3 Month Average	Nonattainment (Partial)	Attainment

Source: SCAQMD 2022
Notes: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards

Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. The LA County portion of the Basin is designated as a CAAQS nonattainment area for O_3, $PM_{2.5}$ and PM_{10}. Additionally, LA County is in attainment of the CAAQS for sulfates and hydrogen sulfide, although that is not presented in Table 4.5.5.

4.5.2.2 Local Air Quality Conditions

The attainment status designations are based on concentrations of air pollutants measured at air monitoring sites throughout the Basin. SCAQMD operates 43 air monitoring sites used to characterize air quality within the 38 subdivided Source/Receptor Areas (SRAs) of the Basin. The geographic boundaries of each SRA are determined by the proximity to the nearest air

monitoring station and local topography and meteorological patterns. The LPA transects portions of SRA 1 (Central Los Angeles County), SRA 12 (South Central Los Angeles County), SRA 5 (Southeast Los Angeles County), and SRA 4 (South Coastal Los Angeles County). The following discussions address pollutant concentrations measured at stations along the LPA alignment.

The northern terminus of the LPA at the Slauson/A Line Station site will span across the boundary between SRA 1 (Central Los Angeles County)—which includes all of downtown Los Angeles and extends southward to Slauson Avenue and eastward to I-710—and SRA 12 (South Central Los Angeles County). Air quality conditions in SRA 1 are characterized by concentrations of air pollutants measured at the Los Angeles – North Main Street (LA-NMS) monitoring site located in downtown Los Angeles. The LA-NMS site actively measures and records concentrations of O_3, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. Table 4.5.6 summarizes the air quality data recorded at the LA-NMS monitoring site between 2015 and 2019. Concentrations of O_3, PM_{10}, and $PM_{2.5}$ measured at the LA-NMS site exceeded applicable state and federal AAQS. The monitoring data are consistent with the LA County attainment status.

Table 4.5.6. SRA 1 Los Angeles – North Main Street Station Monitoring Data (2015 – 2019)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards				
		2015	2016	2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration	0.104	0.103	0.116	0.098	0.093
	Days >0.09 ppm (CAAQS)	2	2	6	2	1
	Maximum 8-Hour Concentration	0.074	0.078	0.086	0.073	0.080
	Days >0.070 ppm (NAAQS/CAAQS)	6	4	16	4	2
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	3.2	1.9	N/A	2.0	2.0
	Days >20 ppm (CAAQS)	0	0	0	0	0
	Maximum 8-Hour Concentration	1.8	1.4	N/A	1.7	1.6
	Days >9.0 ppm (NAAQS/CAAQS)	0	0	0	0	0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration	0.079	0.065	0.081	0.070	0.070
	Days > 0.10 ppm (NAAQS)	0	0	0	0	0
	Annual Average	0.022	0.021	0.020	0.018	0.018
	>0.030 ppm (CAAQS)	No	No	No	No	No
Sulfur Dioxide (SO_2)	Maximum 1-Hour Concentration	0.013	0.013	N/A	0.018	0.010
	Days >0.075 ppm (NAAQS)	0	0	0	0	0
	Maximum 24-Hour Concentration	N/A	N/A	N/A	N/A	N/A
	Days >0.040 ppm (CAAQS)	0	0	0	0	0
Respirable Particulate Matter (PM_{10})	Maximum 24-Hour Concentration	88.0	67.0	96.2	81.2	93.9
	Days >50 µg/m^3 (CAAQS)	26	18	40	31	15
	Annual Average Concentration	33.1	32.4	N/A	34.0	25.4
	>20 µg/m^3 (CAAQS)	Yes	Yes	0	Yes	Yes
	Maximum 24-Hour Concentration	56.4	44.4	54.9	61.4	43.5

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards				
		2015	2016	2017	2018	2019
Fine Particulate Matter ($PM_{2.5}$)	Days >35 µg/m³ (NAAQS)	7	2	6	6	1
	Annual Average Concentration	12.4	11.8	16.3	12.8	10.9
	>12 µg/m³ (NAAQS/CAAQS)	Yes	No	Yes	Yes	No

Source: CARB 2018
Notes: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; N/A = not available; ppm = parts per million; µg/m³ = microgram per cubic meter

South of the Slauson/A Line Station, the LPA alignment is predominantly situated within SRA 12 (South Central Los Angeles County), SRA 5 (Southeast Los Angeles County), and SRA 4 (South Coastal Los Angeles County). SRA 12 extends southward from Slauson Avenue to SR-91 and is bordered by I-110 on the western edge and I-710 on the eastern edge. SRA 12 encompasses portions of the Cities of Huntington Park, Bell, Cudahy, South Gate, and Downey. Air quality conditions in SRA 12 are characterized by concentrations of air pollutants measured at the Compton monitoring site at 700 N. Bullis Road, which measures and records concentrations of O_3, CO, NO_2, and $PM_{2.5}$. Table 4.5.7 summarizes the air quality data recorded at the Compton monitoring site between 2015 and 2019. Concentrations of O_3 and $PM_{2.5}$ measured at the Compton site exceeded applicable state and federal AAQS from 2015 to 2019. The air monitoring data are consistent with the attainment status designations for LA County.

Table 4.5.7. SRA 12 and SRA 5 – Compton Monitoring Station Data (2015 – 2019)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards				
		2015	2016	2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration	0.091	0.098	0.092	0.075	0.100
	Days >0.09 ppm (CAAQS)	1	1	1	0	1
	Maximum 8-Hour Concentration	0.072	0.071	0.076	0.063	0.079
	Days >0.070 ppm (NAAQS/CAAQS)	1	1	6	0	1
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	4.4	4.4	N/A	4.7	3.8
	Days >20 ppm (CAAQS)	No	No	0	0	0
	Maximum 8-Hour Concentration	3.3	3.9	N/A	3.5	3.2
	Days >9.0 ppm (NAAQS/CAAQS)	0	0	0	0	0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration	0.074	0.064	0.099	0.068	0.070
	Days >0.10 ppm (NAAQS)	0	0	0	0	0
	Annual Average	0.017	0.016	0.016	0.015	0.014
	>0.030 ppm (CAAQS)	No	No	No	No	No

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards				
		2015	2016	2017	2018	2019
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-Hour Concentration	41.3	36.4	66.7	43.0	39.5
	Days >35 µg/m³ (NAAQS)	3	3	5	1	1
	Annual Average Concentration	11.8	11.1	13.2	13.0	10.9
	>12 µg/m³ (NAAQS/CAAQS)	No	No	Yes	Yes	No

Source: SCAQMD 2016, 2017, 2018, 2019, 2020
Note: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; N/A = not available; ppm = parts per million; µg/m³ = microgram per cubic meter

SRA 5 (Southeast Los Angeles County) is bounded by I-710 on the west, Whittier Boulevard (SR-72) on the north and northeast, the LA County line on the east and southeast, and Artesia Freeway (SR-91) on the south. There are no active monitoring stations within SRA 5 operated by SCAQMD, CARB, or USEPA. Existing ambient air quality conditions within the portion of SRA 5 transected by the LPA are best characterized by the concentrations of pollutants measured at the Compton monitoring station shown in Table 4.5.7. Within SRA 5, the LPA alignment runs between approximately 2.4 and 5.8 miles from the Compton monitoring station, and the topography and land use patterns along the LPA alignment in SRA 5 are generally consistent with those surrounding the Compton monitoring station. The proximity of the Compton station and lack of topographical features that would disrupt local meteorological patterns make the data obtained there a reasonable characterization of ambient air quality conditions along the LPA alignment in SRA 5.

Air quality conditions in SRA 4 (South Coastal Los Angeles County) are characterized by concentrations of air pollutants measured at three monitoring sites in the greater Long Beach area:

- Long Beach – Hudson (LB-H): Located at 2425 Webster Street, approximately 8.5 miles southwest of the Pioneer Station southern terminus; continuously recorded O_3, CO, NO_2, SO_2, and PM_{10} concentrations between 2013 and 2015 (decommissioned in 2015)
- Long Beach North (LBN): Located at 3648 N. Long Beach Boulevard, approximately 6.3 miles west–southwest of the Pioneer Station southern terminus; monitored concentrations of $PM_{2.5}$ since 2014
- Long Beach – I-710 Near Road (LB-NR): Located at 5895 Long Beach Boulevard, approximately 6.2 miles west of the Pioneer Station southern terminus; monitored NO_2 and $PM_{2.5}$ since being activated in 2015 (replaced LB-H monitoring site)

Table 4.5.8 summarizes the air quality data recorded at the nearest SRA 4 active site to the Affected Area for air quality for each pollutant between 2015 and 2019. The monitoring stations recorded several concentrations of O_3, PM_{10}, and $PM_{2.5}$ exceeding applicable air quality standards during this timeframe, with PM being the primary pollutant of concern for the area. The air monitoring data are consistent with the nonattainment status designations for the LA County portion of the Basin.

Table 4.5.8. SRA 4 – South Coastal Los Angeles County Monitoring Station Data (2015 – 2019)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards				
		2015	2016	2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration	0.104	0.079	0.082	0.074	0.074
	Days > 0.09 ppm (CAAQS)	2	0	0	0	0
	Maximum 8-Hour Concentration)	0.074	0.059	0.069	0.063	0.064
	Days > 0.070 ppm (NAAQS/CAAQS)	6	0	0	0	0
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	3.3	3.3	N/A	4.7	3.0
	Days > 20 ppm (CAAQS)	0	0	0	0	0
	Maximum 8-Hour Concentration	2.2	2.2	N/A	2.1	2.1
	Days > 9.0 ppm (NAAQS/CAAQS)	0	0	0	0	0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration	0.095	0.076	0.116	0.085	0.072
	Days > 0.10 ppm (NAAQS)	0	0	1	0	0
	Annual Average	0.020	0.019	0.025	0.017	0.016
	> 0.030 ppm (CAAQS)	No	No	No	No	No
Sulfur Dioxide (SO_2)	Maximum 1-Hour Concentration	0.038	0.018	N/A	0.011	0.009
	Days > 0.075 ppm (NAAQS)	0	0	0	0	0
	Maximum 24-Hour Concentration	N/A	N/A	N/A	N/A	N/A
	Days > 0.040 ppm (CAAQS)	0	0	0	0	0
Respirable Particulate Matter (PM_{10})	Maximum 24-Hour Concentration	80.0	75.0	N/A	84.0	60.0
	Days > 50 µg/m^3 (CAAQS)	6	8	0	4	3
	Annual Average Concentration	31.5	32.0	N/A	32.3	26.9
	> 20 µg/m^3 (CAAQS)	Yes	Yes	0	Yes	Yes
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-Hour Concentration	48.8	29.4	85.4	47.1	36.7
	Days > 35 µg/m^3 (NAAQS)	7	0	8	2	1
	Annual Average Concentration	12.9	12.0	12.8	11.2	11.0
	> 12 µg/m^3 (NAAQS/CAAQS)	Yes	Yes	Yes	No	No

Source: SCAQMD 2018, 2019, 2020, and 2021
Note: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; N/A = not available; ppm = parts per million; µg/m^3 = microgram per cubic meter

4.5.3 Environmental Consequences/Environmental Impacts

4.5.3.1 No Build Alternative

Under the No Build Alternative, regional and local projects would continue to be built. The operational air quality benefits resulting from transportation mode shift attributed to implementation of the LPA would not materialize, and population growth within the region would increase VMT on the existing roadway network relative to Existing Conditions. On-road motor vehicle emissions would continue to be controlled by mandatory emissions standards set by the USEPA and the CARB.

Criteria Pollutant and Ozone Precursor Emissions

The No Build Alternative accounts for general population growth that would lead to increased vehicle use and associated pollutant emissions, as well as planned transportation projects throughout the region that would be completed by 2042. Annual VMT in the region would increase from approximately 463.25 million VMT (2017) to approximately 606.33 million VMT (2042). Table 4.5.9 shows the regional air pollutant emissions associated with on-road VMT for the existing condition and the No Build Alternative based on the regional VMT.

Table 4.5.9. Daily Operational Emissions—Existing Conditions (2017) and No Build Alternative (2042)

Scenario	Emissions (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing (2017)	62,663	419,790	1,749,768	4,303	85,518	22,511
No Build Alternative (2042)	14,257	100,851	746,111	3,888	104,667	21,948
Net Change	**(48,406)**	**(318,940)**	**(1,003,658)**	**(416)**	**19,149**	**(563)**
Percent Change	(77%)	(76%)	(57%)	(9%)	22%	(2%)

Source: Metro 2024i

Notes: The differences between the daily emissions shown in this table compared to the corresponding table in the Draft EIS/EIR (Table 4.5.9) is attributable to the use of the most recent CARB EMFAC (EMFAC2021) in this Final EIS/EIR compared to the data derived from EMFAC2017 in the Draft EIS/EIR.

lbs/day = pounds per day; CO = carbon monoxide; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; ROG = reactive organic gases; SO_x = sulfur oxides; ( ) = decrease

Emission reductions between Existing Conditions (2017) and the No Build Alternative in the horizon year of 2042 are attributed to alternative-fueled passenger vehicles (i.e., electric and natural gas) added to the vehicle fleet, continued improvements in fuel efficiency, and the phasing out of older vehicles over time. For example, the CARB EMFAC2021 mobile source emissions inventory estimated that approximately 1 percent of all light- and medium-duty VMT within Los Angeles County were powered by electricity in 2017, and that proportion is forecasted to rise to 9.4 percent in 2042. The incremental increases in particulate matter emissions relative to Existing Conditions are solely attributed to ambient regional population growth spurring additional regional VMT and associated road dust and break and tire wear. As regional air quality continues to improve in the future, the deposition of dust on roads will be reduced.

Mobile Source Air Toxics

Federal and state regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. An analysis of national trends with the USEPA MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 and VMT is projected to increase by over 100 percent.

The No Build Alternative would reduce emissions relative to the Existing Conditions due to the addition of alternative-fueled passenger vehicles (i.e., electric and natural gas) to the vehicle fleet and continued improvements in fuel efficiency. These conditions are supported by CARB in the publication of EMFAC2021. The No Build Alternative would not reduce regional VMT as is the case with the LPA. Under NEPA, the No Build Alternative would not result in an adverse effect related to operational emissions.

4.5.3.2 Locally Preferred Alternative

The LPA will not introduce a new substantial direct source of air pollutant emissions into the Affected Area for air quality. The primary direct source of emissions associated with the LPA will be operation of the MSF, which will introduce new minor sources of air pollutant emissions generated by the use of landscaping and consumer products (e.g., cleaners and architectural coatings), as well as new employee and supply delivery trips constituting mobile source emissions. Additional minor stationary sources will be associated with the use of landscaping equipment and the application of architectural coatings at the aerial and at-grade stations and parking facilities. Indirectly, regional emission levels within the Affected Area for air quality will be influenced by changes in on-road traffic patterns resulting from induced transportation mode shift, as well as improvements in fuel efficiency and engine technologies that are accounted for in the regulatory emissions model. Indirect criteria pollutant and O_3 precursor emissions will be generated through energy use (e.g., LRT propulsion, lighting, and accessory equipment at station platforms, and MSF operations).

The LPA will induce changes in regional transportation patterns by replacing vehicle trips with transit ridership. Every displaced vehicle and VMT induced by project implementation will indirectly reduce regional emissions related to transportation. As shown in Table 4.5.3, the LPA (if operational in 2017) would reduce daily VMT within the Affected Area for air quality by approximately 71,845 vehicle miles relative to Existing Conditions. By 2042, the transportation modeling results in Table 4.5.3 demonstrate that the LPA will reduce daily VMT by approximately 130,870 vehicle miles compared to the No Build Alternative. The LPA will improve regional air quality by taking passenger vehicle trips off the roadway network and encouraging alternative and active modes of transportation. The expansion of LRT infrastructure and the displacement of VMT are critical components of regional transportation planning initiatives to improve air quality and public health.

Criteria Pollutant and Ozone Precursor Emissions

The LPA will affect regional air pollutant emissions primarily through changes in regional transportation patterns due to mode shift and increased Metro ridership, which will decrease regional VMT throughout the Affected Area for air quality relative to the No Build Alternative. Additionally, the MSF will introduce new minor sources of air pollutant emissions generated by landscaping, consumer product use, and employee and supply delivery trips. Table 4.5.10 presents the results of the daily operational emissions modeling for the LPA and the relative change from the No Build Alternative in the horizon year of 2042.

The LPA will decrease daily regional air pollutant emissions compared to the No Build Alternative in 2042. As emissions decrease, there is no potential for LPA operations to cause a new NAAQS or CAAQS violation or exacerbate an existing NAAQS or CAAQS violation. Under NEPA, long-term LPA operations will not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.10. Daily Operational Emissions—No Build Alternative and LPA (2042)

Scenario/Source	Daily Criteria Pollutant and Ozone Precursor Emissions (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
LPA – Regional VMT	14,254	100,838	746,004	3,887	104,646	21,944
LPA – MSF	4	1	8	<1	3	1
LPA Total	**14,258**	**100,839**	**746,012**	**3,887**	**104,649**	**21,944**
No Build Alternative Regional VMT	14,257	100,851	746,111	3,888	104,667	21,947
Net Daily Change	**1**	**(12)**	**(99)**	**(1)**	**(18)**	**(3)**
SCAQMD Threshold	55	550	55	150	150	55

Source: Metro 2024i, SCAQMD 2015
Notes: The differences between the daily operational emission estimates shown in this table compared to the corresponding table in the Draft EIS/EIR (Table 4.5.12) is attributable to the use of the most recent CARB EMFAC model (EMFAC2021) in this Final EIS/EIR.
lbs/day = pounds per day; LPA = Locally Preferred Alternative; MSF = maintenance and storage facility; VMT = vehicle miles traveled; SCAQMD = South Coast Air Quality Management District; ROG = reactive organic gases; CO = carbon monoxide; NO_X = nitrogen oxides; SO_X = sulfur oxides; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; ( ) = reduction/decrease.

Mobile Source Air Toxics

MSAT emissions are directly correlated to VMT; therefore, reductions in daily MSAT emissions will result through implementation of the LPA. In 2042, LPA operations will reduce daily regional VMT by 130,870 vehicle miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air quality. Under NEPA, the LPA will not result in adverse effects related to MSAT emissions.

Transportation Conformity

Regional Transportation Conformity: The LPA is included in the SCAG 2020-2045 RTP/SCS Transportation System Financially Constrained Project List as a LA County transit project under the RTP ID 1TR1011. The LPA is described as follows: "West Santa Ana Branch Transit Corridor LRT." The FHWA and FTA determined that the SCAG 2020-2045 RTP/SCS and the accompanying conformity analysis satisfied all air quality conformity requirements, documented in a letter to SCAG on June 5, 2020. The RTP entry for the LPA was updated within Draft Amendment #3 to the 2020–2045 RTP/SCS, with changes comprising an update of the opening year from 2028 to 2035 and a decrease to the project cost associated with the length of the LPA alignment relative to other alternatives assessed in the Draft EIS/EIR.

Additionally, the LPA is listed in the 2023 FTIP (FTIP ID is LA0G1094), programmed as a Project Study. The FHWA and FTA determined that the SCAG 2023 FTIP and accompanying conformity analysis satisfied all air quality conformity requirements in a letter on December 16, 2022. The Project is accurately programmed (for study only) in both the SCAG 2020–2045 RTP/SCS and the 2023 FTIP; therefore, the LPA will satisfy the Regional Transportation Conformity requirements. The 2023 FTIP Consistency Amendment #23-03 was approved by the FHWA and FTA on June 9, 2023, in conjunction with the Connect SoCal Amendment #3 approval and transportation conformity determination. Conformity documentation is included in Appendix B to the Air Quality Impact Analysis Report.

Project-Level Transportation Conformity: Project-level conformity requires that the LPA will not result in a new local CO, PM_{10}, or $PM_{2.5}$ air quality standard violation or worsen existing violations. Regarding CO hot spots, although the Basin is designated as a maintenance area for CO, it is no longer a pollutant of concern in the region. According to CARB, the NAAQS for CO was last exceeded in 2002 (SCAQMD 2016). The SCAQMD last published data for 2021 included maximum 1- and 8-hour concentrations of 4.3 and 3.7 parts per million (ppm). These concentrations were below the 1- and 8-hour NAAQS of 20 and 9 ppm, respectively. The LPA is planned to begin revenue service in 2035. As indicated in the CARB EMFAC model, CO emission rates will be substantially less in opening year 2035 and in horizon year 2042 than in 2003 when CO attainment was demonstrated in the AQMP. Therefore, the LPA will not generate a CO hot-spot.

Regarding PM hot spots, the LPA is within a nonattainment area for the federal $PM_{2.5}$ NAAQS and a maintenance area for the PM_{10} NAAQS. Therefore, pursuant to 40 CFR 93, project-level $PM_{2.5}$ and PM_{10} Interagency Consultation and/or analyses are required for conformity purposes. A quantitative hot-spot analysis is required only for a project that has been identified as a Project of Air Quality Concern, as defined in 40 CFR 93.123(b)(1).

The LPA is an electrically powered transit project that will not directly increase diesel truck traffic on the roadway network. Therefore, the LPA will not influence the level-of-service associated with increased traffic volumes from a significant number of diesel vehicles. In addition, the LPA is not identified as including possible violation sites in the $PM_{2.5}$ Implementation Plan or PM_{10} Implementation Plan or any other SIP submission. Metro presented the LPA to SCAG's Transportation Conformity Working Group (TCWG) to obtain a project-level conformity determination at the January 26, 2021, TCWG meeting. The members of the TCWG concurred that the LPA will not be a Project of Air Quality Concern, thereby establishing that PM emissions from diesel trucks will not present localized air quality concerns along roadways affected by the LPA. Under NEPA, the LPA will not result in adverse effects related to worsening existing, or contributing to new localized, PM hot spots and will satisfy all transportation conformity requirements.

4.5.3.3 Design Option: Close 186th Street

Criteria Pollutant and Ozone Precursor Emissions

Implementation of the LPA with the design option would result in similar regional air quality effects as the LPA without the design option. The LPA with the design option would not introduce a new substantial source of criteria pollutant and/or ozone precursor emissions to the Affected Area for air quality. The induced change in VMT on the regional roadway network resulting from increased transit ridership would be equivalent to the change in VMT determined for the LPA without the design option. The LPA with the design option would not alter ridership on the Project and would displace the same amount of vehicle trips and VMT as the LPA. The LPA with the design option would result in similar emissions of criteria pollutants and ozone precursors to the LPA without the design option and would not produce new or exacerbated adverse effects related to air quality.

Mobile Source Air Toxics

MSAT effects of the LPA with the design option would be the same as for the LPA without the design option. The LPA with the design option would not result in adverse air quality effects related to MSAT emissions. The closing of 186th Street in lieu of 187th Street would

not substantively change regional traffic circulation patterns and would not cause atypically high concentrations of MSAT pollutants near sensitive receptors. The LPA with the design option would not result in new or exacerbated adverse air quality effects related to MSAT emissions and concentrations.

Transportation Conformity

The discussion of transportation conformity requirements is the same for the LPA with the design option as that presented above for the LPA without the design option. The design option would not alter the regional and project-level conformity determinations described above and is consistent with the project programmed in the 2020–2045 RTP/SCS and the 2023 FTIP. Therefore, the LPA with the design option would satisfy transportation conformity requirements and would not result in new or exacerbated adverse air quality effects.

4.5.3.4 Maintenance and Storage Facility

The MSF is an integral component of the LPA and will not operate independently of the LPA being implemented. Air pollutant emissions that will be generated by operation of the MSF were estimated using CalEEMod and are accounted for in the analyses of the LPA. Operation of the MSF will result in emissions associated with vehicle trips to and from the site, natural gas use, and the use of consumer products such as cleaners and solvents. SCAQMD guidance requires that all project components be considered in a comprehensive emissions analysis. The MSF will be a requisite component of the LPA and will not operate independently. The analysis of operational emissions generated by the MSF is therefore incorporated with the LPA analysis. Implementation of the MSF as a component of the LPA will not result in adverse air quality effects.

4.5.3.5 U.S. Army Corps of Engineers Facilities

Operation of the LPA at the USACE facilities will not generate air pollutant emissions that will adversely affect local air quality. Implementation of the LPA will introduce a new LRT line to the region that will be powered by electric propulsion and will not involve a substantial stationary or mobile source of emissions in the vicinity of USACE facilities. Therefore, no adverse air quality effects will occur during operation of the LPA at the USACE facilities.

4.5.4 Project Measures and Mitigation Measures

No project or mitigation measures are required.

4.5.5 California Environmental Quality Act Determination

4.5.5.1 Threshold AQ-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The applicable air quality plan is the SCAQMD 2022 AQMP, which is prepared to support the SIP and was approved by the CARB in January 2023. The 2022 AQMP incorporates regional growth projections from the SCAG 2020–2045 RTP/SCS, and the two plans are heavily interrelated. In accordance with the procedures established in the SCAQMD's *CEQA*

Air Quality Handbook (SCAQMD 1993), the following criteria are required to be addressed to determine the consistency with applicable SCAQMD and SCAG policies:

- Would the project result in any of the following?
  - An increase in the frequency or severity of existing air quality violations;
  - Cause or contribute to new air quality violations; or
  - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- Would the project exceed the assumptions utilized in preparing the AQMP?
  - Is the project consistent with the population and employment growth projections upon which AQMP forecasted emission levels are based?
  - Does the project include air quality mitigation measures? or
  - To what extent is project development consistent with the AQMP land use policies?

The LPA is included in the 2020-2045 RTP/SCS under Project ID 1TR1011, and an updated entry for the LPA is included in Draft Amendment #3 that reflects the revised project scope and cost. On June 5, 2020, FHWA and FTA determined that the 2020-2045 RTP/SCS is in conformity with the SIP. Amendment #3 to the 2020–2045 RTP/SCS was approved in June of 2023. Demonstrating conformity with the SIP is a crucial element of transportation planning, as it ensures that the projects approved for implementation will not create emissions of air pollutants that will impede or delay improvements in regional air quality achieved by various control strategies. The expansion of LRT infrastructure and the displacement of VMT are critical components of regional transportation planning initiatives to improve air quality and public health. The Governor's Office of Planning and Research recommends streamlining the environmental analyses of transit and active transportation projects that reduce VMT, as decreasing vehicle travel is widely acknowledged to directly correlate with improving air quality.

In response to SB 743, OPR and Caltrans have collaboratively and separately developed guidance for analyzing induced changes to transportation patterns and the associated air pollutant emissions. Caltrans is finalizing guidance related to analyzing transportation impacts from state highway projects, asserting in the draft documentation that the appropriate CEQA analysis for induced changes to on-road VMT be assessed in the design or horizon year of a proposed project relative to the No Project Alternative. Taking into consideration these recent developments in transportation planning approach, the most appropriate holistic comparison of the LPA operational emissions is to those of the No Project Alternative in 2042, as presented in Table 4.5.10.

No Project Alternative

Under the No Project Alternative, no new sources of air pollutant emissions would be introduced to the Affected Area for air quality, and no new growth would be introduced to the County in terms of population, housing, or employment. Metro systemwide operations would not include the LPA and its benefits related to VMT displacement, reducing vehicle trips, encouraging active transportation, and other proven strategies that enhance regional air quality.

As part of its initiative to minimize the environmental consequences of its operations, Metro has committed to implementing a cleaner fleet of buses and service vehicles that reduce air pollution. Between 2012 and 2017, Metro reduced its systemwide NO_X emissions by 40 percent and reduced its systemwide hydrocarbon and particulate matter emissions by over 50

percent; and in 2017 alone Metro reduced NO_X emissions from service vehicles by 26 percent. These benefits are consistent with regional emission reduction strategies incorporated into the AQMP. On July 27, 2017, the Metro Board of Directors unanimously voted to transition the entire Metro bus fleet to zero-emission vehicles by 2030. The No Project Alternative would not interfere with Metro's efforts to reduce its systemwide air pollutant emissions and would not conflict with implementation of the 2022 AQMP. Therefore, no impact on regional air quality would occur under the No Project Alternative and mitigation would not be required.

Locally Preferred Alternative

The LPA will not introduce new population or housing growth into Los Angeles County, and the expansion of Metro operations will represent a negligible increase in regional employment compared to the 1.35 million jobs that are anticipated to be created in Los Angeles County between 2015–2040. As such, the Project is consistent with the objectives and assumptions of the 2022 AQMP, and thus will not interfere with the region's ability to attain the air quality standards on the designated schedule.

The LPA will improve regional connectivity and encourage transit ridership, and will induce changes in regional transportation patterns by replacing vehicle trips with transit ridership. Every displaced vehicle ignition that is started up and VMT induced by project implementation will indirectly reduce regional emissions related to transportation. As shown in Table 4.5.3, the LPA (if operational in 2017) would have reduced daily VMT within the Affected Area for air quality by approximately 71,845 vehicle miles relative to Existing Conditions. By 2042, the LPA will reduce daily VMT by approximately 130,870 vehicle miles compared to the No Project Alternative.

The VMT displacement will reduce emissions associated with vehicle exhaust and road dust from passenger vehicle trips that will not occur with implementation of the Project. The displacement of 71,845 daily regional on-road VMT will more than offset the increase in Metro vehicle activities. The changes in emissions associated with VMT displacement are induced, indirect air quality benefits. Daily operational emissions will remain below applicable SCAQMD thresholds for all criteria pollutants and ozone precursors and will not contribute to an increase in the frequency or severity of air quality violations in the context of Existing Conditions.

The LPA will reduce emissions of criteria pollutants and ozone precursors relative to the No Project Alternative, with the exception of a minor increase in ROG emissions associated with MSF operations. The incremental increase in ROG emissions is below the regional screening threshold and will not cause a significant impact. Therefore, the LPA will provide environmental benefits related to air quality and emissions of nonattainment pollutants and will result in a less than significant impact related to conflicts with the 2022 AQMP. Mitigation will not be required.

Design Option: Close 186th Street

With implementation of the design option, 187th Street would remain open but 186th Street would be closed. Additionally, Corby Avenue would become a cul-de-sac with an access driveway for the existing business. These differences compared to the LPA without the design option would not alter the analysis of operational air pollutant emissions presented for the LPA without the design option. The LPA with the design option would involve the same sources of emissions

as the LPA without the design option with regard to the MSF and would indirectly induce the same effect on regional on-road VMT emissions through increased transit ridership and corresponding passenger vehicle trip displacement. The emissions analysis presented in Table 4.5.10 reflects the long-term effects of the LPA with the design option on regional air quality. Long-term operation of the LPA with the design option would not conflict with or obstruct implementation of the AQMP and would contribute to environmental benefits of regional LRT operations reducing air pollutant emissions. Consistent with the analysis for the LPA without the design option, the LPA with the design option would result in less than significant impacts related to AQMP consistency and air quality violations.

Maintenance and Storage Facility

The MSF will be located in Bellflower and will be the predominant source of direct and indirect air pollutant emissions introduced to the SCAQMD jurisdiction during future LPA operations, generating up to approximately 250 additional vehicle trips per day. The AQMP consistency analyses for the LPA considers the MSF as a component of the Project, as the MSF will not function independently of the LRT. Table 4.5.11 presents operational emissions associated with the MSF in 2017 and compares them to the SCAQMD mass daily air quality significance thresholds at the regional and localized levels.

Table 4.5.11. MSF Daily Regional Operational Emissions (2017)

Source	Emissions (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Off-Site Mobile Trips	1	2	15	<1	3	1
On-Site Area Sources	4	<1	<1	<1	<1	<1
On-Site Energy Consumption	<1	<1	<1	<1	<1	<1
Total Regional Emissions	5	3	16	<1	3	1
SCAQMD Regional Threshold	55	550	55	150	150	55
Regional Threshold Exceeded?	No	No	No	No	No	No
Total On-Site Emissions	3.3	<1	<1	<1	<1	<1
SRA 5 LST Value	—	1,480	172	—	4	2
Localized Threshold Exceeded?	—	No	No	—	No	No

Source: Metro 2024i, SCAQMD 2023, SCAQMD 2009
Notes:
lbs/day = pounds per day; LST = Localized Significance Threshold; MSF = maintenance and storage facility; SRA = Source/Receptor Areas; ROG = reactive organic gases; CO = carbon monoxide; NO_X = nitrogen oxide; SO_X = sulfur oxides; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; SCAQMD = South Coast Air Quality Management District

As shown in Table 4.5.1, daily emissions of criteria pollutants and ozone precursors will remain below applicable thresholds at both levels of analysis in this 2017 scenario. Due to improvements in engine technologies, fuel efficiency, and more stringent regulations, operational emissions for the MSF will be lower in 2042 than in 2017. Therefore, the MSF will result in a less than significant impact related to AQMP consistency for the LPA, and mitigation will not be required.

4.5.5.2 Threshold AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant under an applicable federal or state ambient air quality standard?

The Basin is the Affected Area for air quality for evaluation of cumulative impacts for air quality. The Basin is currently designated as in nonattainment of the federal and/or state AAQS for O_3, PM_{10}, and $PM_{2.5}$. Therefore, there is an ongoing cumulative impact associated with these air pollutants. The potential for the LPA to contribute to a permanent cumulative impact is assessed through consistency with air quality plans. The SCAQMD has promulgated guidance related to cumulative emissions, stating that if daily emissions associated with implementation of a project do not exceed any applicable regional or localized threshold values, those emissions would not be considered cumulatively significant. Daily air pollutant emissions that would be generated by the No Project Alternative and the LPA and design option are evaluated in the context of the SCAQMD Air Quality Significance Thresholds.

No Project Alternative

As previously described in Section 4.5.5.1 under the No Project Alternative, the LPA alignment and components would not be developed, and the associated project corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air quality that could contribute to a cumulatively considerable increase in emissions of pollutants for which the region is designated in nonattainment. The No Project Alternative would not result in regional air quality impacts related to cumulatively considerable increases in nonattainment pollutant emissions, and mitigation would not be required.

Locally Preferred Alternative

As discussed in Section 4.5.5.1, the LPA is listed in the region's currently conforming 2020-2045 RTP/SCS. Furthermore, as shown in Table 4.5.10, the LPA will not result in an incremental increase in daily emissions that will exceed any applicable SCAQMD threshold. The LPA will decrease regional air pollutant emissions associated with on-road regional VMT within the Affected Area for air quality in the horizon year of 2042. Permanent emissions associated with the LPA emissions will not be cumulatively considerable; this impact will be less than significant; and mitigation will not be required.

Design Option: Close 186th Street

The LPA with the design option would not alter air pollutant emissions from future operations relative to the LPA without the design option. The LPA with the design option would involve the same sources of emissions as the LPA without the design option with regard to the MSF and would indirectly induce the same effect on regional on-road VMT emissions through increased transit ridership and corresponding passenger vehicle trip displacement. Long-term operation of the LPA with the design option would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold, as evidenced by the analysis presented in Table 4.5.10. Consistent with the analysis for the LPA without the design option, the design option would result in less than significant impacts related to AQMP consistency and air quality violations.

Maintenance and Storage Facility

The MSF is an integral component in the LPA assessment of the potential for a cumulatively considerable net increase in criteria pollutant emissions analysis. Based on the assessment

for the LPA and the emissions presented in Table 4.5.11, the MSF will not contribute to a cumulatively considerable impact, and mitigation will not be required.

4.5.5.3 Threshold AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

No Project Alternative

Under the No Project Alternative, the LPA alignment and components would not be developed, and the associated project corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air quality that could expose sensitive receptors to substantial pollutant concentrations. The No Project Alternative would not result in regional air quality impacts related to the exposure of sensitive receptors to substantial pollutant concentrations, and mitigation would not be required.

Locally Preferred Alternative

The LPA will not introduce a new land use development that will constitute a substantial direct source of air pollutant emissions to the Affected Area for air quality during operation. Permanent sources of operational emissions associated with the LPA will include LRT operations and maintenance activities at the MSF. The MSF site will constitute the only permanent, stationary source of direct emissions associated with the long-term operation of the LPA. No direct source of air pollutant emissions along the LPA alignment will occur as the LRVs are powered by electrical propulsion. Future operation of the LPA will result in a net decrease in particulate matter and dust emissions at the regional scale relative to the No Build Alternative, as shown in Table 4.5.10.

The LPA will require freight track relocations in certain segments of the alignment. Regarding particulate emissions from freight train movements, the LPA will not increase freight train activities at any location along the LRT alignment. Existing particulate matter emissions and dust deposition are not related to the environmental effects of the Project itself. Review of observational counts taken at various points along the ROW indicate that existing average daily train pass-bys are only one or two per day. Any increases in freight activity would be separate from and independent of the LPA. Furthermore, relocation of the existing train tracks by a distance of 15 to 20 feet will not increase particulate emissions from freight train movements and will not substantially alter dust deposition patterns from those movements. Additionally, ambient particulate matter concentrations and resulting dust deposition are anticipated to decrease between the existing environmental setting (2017) and the horizon year of LPA operations (2042) as a result of future implementation of control strategies outlined in the SCAQMD AQMP.

The LPA will introduce a new LRT line within the Affected Area for air quality analysis. The LPA will be propelled by electricity, which produces negligible emissions of particulate matter compared to diesel-powered freight trains as there is no source of combustion emissions. The only source of particulate emissions associated with LPA operations within the corridor will be associated with brake dust resulting from frictional contact between the rail car wheels and the tracks since the cars will be powered by electric propulsion and not diesel-fueled internal combustion engines. Emissions of brake friction dust are reduced relative to diesel-powered trains because primary braking is regenerative through the electric motors of the LRT vehicles, and these emissions will be extremely minor. Therefore, operation of the LPA will not expose sensitive receptors to substantial pollutant concentrations; impacts will be less than significant; and mitigation will not be required.

Design Option: Close 186th Street

The analysis of potential impacts related to substantial pollutant concentrations affecting sensitive receptors for the design option would be the same as the analysis presented for the LPA without the design option. The LPA with the design option would involve the same sources of emissions as the LPA without the design option with regard to the MSF and would indirectly induce the same effect on regional on-road VMT emissions through increased transit ridership and corresponding passenger vehicle trip displacement. Consistent with the analysis for the LPA without the design option, the LPA with the design option would result in less than significant impacts related to sensitive receptor exposures to pollutant concentrations.

Maintenance and Storage Facility

Operation of the MSF will not constitute a substantial source of pollutant emissions within the Affected Area for air quality. Primary emissions sources at the MSF during operation will be consumer product use (e.g., solvents and cleaners) and ancillary activities (i.e., landscaping and building upkeep). Table 4.5.11 presents the operational emissions that will be generated by the MSF and compares the localized emissions to the applicable SCAQMD Localized Significance Threshold values for SRA 5 (Southeast Los Angeles County). On-site operational emissions will be approximately 3.3 pounds per day of ROG, less than 0.5 pound per day of CO and NO_X, and less than 0.1 pound per day of SO_X, PM_{10}, and $PM_{2.5}$. Emissions will remain substantially below the applicable SCAQMD Localized Significance Threshold values for SRA 5 under this hypothetical scenario that represents a more conservative evaluation of MSF operational emissions than those that will occur in 2042. Operation of the MSF will not expose sensitive receptors to substantial pollutant concentrations; impacts will be less than significant; and mitigation will not be required.

4.5.5.4 Threshold AQ-4: Would the Project result in other emissions (such as those leading to odors or dust) adversely affecting a substantial number of people?

No Project Alternative

Under the No Project Alternative, the LPA alignment and components would not be developed, and the associated project corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air quality that could expose sensitive receptors to substantial pollutant concentrations. The No Project Alternative would have no impact on regional air quality related to public nuisance, and mitigation would not be required.

Locally Preferred Alternative

The LPA will not generate a substantial source of operational odors. Land uses and industrial operations commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Any unpleasant odors from transit operations will be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance), which prevents nuisance odor conditions. All trash receptacles at Metro station locations will be subject to regular servicing and maintenance to ensure that unpleasant odors do not emanate from waste bins and present unpleasant conditions to patrons. As a result, the LPA will have a minor, if any, impact with respect to odors. Therefore, the LPA will result in a less than significant impact related to operational odors.

Furthermore, operation of the LPA will not introduce a new substantial source of dust emissions to the Affected Area for air quality. As shown in Table 4.5.3, the Existing + LPA scenario (if operational in 2017) would reduce daily VMT by 71,845 vehicle miles, which would reduce regional mobile source emissions associated with both vehicle exhaust and re-entrained dust on the roadways. By 2042, the LPA will reduce daily VMT by approximately 130,870 vehicle miles compared to the No Project Alternative. As such, the LPA will decrease road dust emissions in direct correlation with VMT reduction. Therefore, the LPA will result in a less than significant impact related to operational odors and dust, and mitigation will not be required.

Design Option: Close 186th Street

The analysis of potential impacts related to emissions that could cause public nuisances for the LPA with the design option would be the same as the analysis presented for the LPA without the design option. Any unpleasant odors from transit operations will be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance), which prevents nuisance odor conditions. All trash receptacles at Metro station locations will be subject to regular servicing and maintenance to ensure that unpleasant odors do not emanate from waste bins and present unpleasant conditions to patrons. As a result, operation of the LPA with the design option would have a minor, if any, impact with respect to odors. Consistent with the analysis for the LPA without the design option, the LPA with the design option would result in less than significant impacts related to emissions of odorous compounds and other pollutants that could cause public nuisances.

Maintenance and Storage Facility

The MSF will be located in the City of Bellflower. The MSF will not generate a substantial source of operational odors. Operational activities at the MSF will include the use of common household cleaners that generate localized odors that are not anticipated to be detectable beyond the MSF property line. Therefore, the MSF will result in a less than significant impact related to operational odors.

Furthermore, operation of the MSF will not introduce a new substantial source of dust emissions to the Affected Area for air quality. Primary sources of operational emissions at the MSF include mobile vehicle trips to and from the site, as well as area source emissions from consumer products and ancillary activities such as landscaping. The MSF site will be paved and will not involve large aggregate storage piles or other sources of fugitive dust emissions. Operation of the MSF will be subject to adherence to the SCAQMD rules controlling fugitive dust emissions (Rule 401 Visible Emissions, Rule 402 Nuisance, and Rule 403 Fugitive Dust). As no sources of fugitive dust emissions will be present on the MSF site, operation of the MSF will result in a less than significant impact related to dust emissions, and mitigation will not be required.

4.6 Greenhouse Gas Emissions

This section summarizes the existing greenhouse gas (GHG) emissions in the Affected Area for GHG and evaluates the potential adverse effects and impacts as a result of the No Build Alternative and the LPA, design option, and MSF. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Greenhouse Gas Emissions Final Impact Analysis Report* (Metro 2024f).

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, including refinements to the LPA. Similar to updates made

for the air quality analysis (as summarized in Section 4.5, Air Quality), the GHG analysis was updated to use versions CalEEMod 2020.4.0 (CAPCOA 2021) and EMFAC2021 (CARB 2022c) of these modeling tools rather than CalEEMod Version 2016.3.2 and EMFAC2017 that were used in the Draft EIS/EIR analysis. CalEEMod 2020.4.0 is used to estimate operational electricity at LPA stations and parking facilities and the associated indirect GHG emissions. CalEEMod 2020.4.0 was also used to estimate construction GHG emissions, which are discussed in greater detail in Section 4.19.3.6 (Construction-related Greenhouse Gas Emissions) of this Final EIS/EIR.

As stated in Section 4.5, comments were received related to recent state regulations requiring the elimination of sales of new fossil-fuel-powered vehicles statewide by the year 2035 (codified under the CARB Advanced Clear Cars II Regulations – Resolution 22-12 [CARB 2022d]), and whether these regulatory developments were accounted for in the Draft EIS/EIR analysis. The operational on-road mobile source emissions analysis disclosed in the Draft EIS/EIR used the EMFAC2017 version of the CARB mobile source emissions inventory application to estimate GHG emissions, which was released prior to adoption of the Advanced Clean Cars II Regulation and did not account for the new accelerated timeline for phasing out sales of new vehicles powered by fossil fuels. The Final EIS/EIR analysis uses the EMFAC2021 version of the application, which accounts for the implementation of the Advanced Clear Cars II Regulation. This adjustment within the EMFAC database is reflected in the 2042 emission factors produced by the model and results in greater reductions in GHG emissions on aggregate average (i.e., per VMT) throughout the on-road vehicle fleet between 2017 and 2042 for both the No Build Alternative and the LPA. Therefore, the reduction in GHG emissions associated with changes in on-road vehicle travel between the 2017 Existing Conditions analysis and the 2042 No Build Alternative/LPA analysis is of greater magnitude in the Final EIS/EIR analysis than the reduction disclosed in the Draft EIS/EIR.

Comments were received regarding the methodology for estimating and disclosing indirect GHG emissions that would be generated through the consumption of electricity to power the LRVs traversing the LRT alignment. The Draft EIS/EIR methodology relied on average Metro systemwide energy consumption per vehicle revenue mile to estimate indirect GHG emissions attributed to rail propulsion. The GHG methodology in the Final EIS/EIR is updated to first estimate the specific electricity consumption of LPA rail propulsion, and then quantify the GHG emissions using the estimated electricity consumption and a carbon intensity factor for electricity supplied and delivered by Southern California Edison (SCE) in the operational design year of 2042. Use of the updated methodology results in overall higher energy consumption for LPA operations. However, the associated GHG emissions are still reduced due to the availability of newer SCE delivered power carbon intensity factors available in the CalEEMod default data appendix (CAPCOA 2023).

For completeness, the Final EIS/EIR characterization of existing conditions is updated to include more recent data pertaining to the statewide GHG emissions inventory that is compiled by CARB. Table 4.6.4 in the Draft EIS/EIR is updated to include emissions data through 2020 (as shown in Table 4.6.4). Additionally, the discussion of Metro system GHG emissions is updated to reflect data collected after the established environmental analyses existing conditions year of 2017 up through 2019.

The GHG emissions impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. The LPA, including with the

MSF, will reduce regional GHG emissions relative to the No Build Alternative in the horizon year of 2042, resulting in a net environmental benefit to the Affected Area. The updated analysis for the Final EIS/EIR determined that the environmental benefit related to GHG emissions reductions will be even greater than those disclosed for Alternative 3 in the Draft EIS/EIR using the updated methodology developed in response to comments submitted on the Draft EIS/EIR and best available data and tools. The LPA with the design option would not change GHG emissions compared to the LPA without the design option. Therefore, the LPA will not result in adverse effects related to the consumption of GHG emissions, and no minimization or mitigation measures will be required.

4.6.1 Regulatory Setting and Methodology

4.6.1.1 Regulatory Setting

The regulations summarized below represent those that are most directly relevant to the LPA in the context of GHG emissions and climate change. The list provided is not exhaustive of all regulations involving GHG emissions and transportation projects.

Federal

Federal Clean Air Act: The CAA is the law that defines the USEPA responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The United States Supreme Court ruled in *Massachusetts v. Environmental Protection Agency* (2007), *127 S.Ct. 1438,* that the USEPA has the authority to regulate CO_2 and other GHGs are pollutants under the federal CAA.

United States Department of Transportation Climate Action Plan: The 2021 Climate Action Plan contains actions and goals to address the resilience of the nation's transportation infrastructure to future effects of climate change, including incorporating resilience into U.S. Department of Transportation (USDOT) Grant and Loan Programs, enhancing resilience throughout project planning and development, ensuring resiliency of USDOT facilities and operational assets, ensuring climate-ready services and supplies, and improving climate education and research on resilience.

Federal Transit Administration Climate Change Adaptation Initiative: The FTA Climate Change Adaptation Initiative program conducted seven climate adaptation pilot studies to increase knowledge of how transit agencies can adapt to climate change, advance the state of the practice in adapting transit assets and operations to the impacts of climate change, and build strategic partnerships between transit agencies and climate adaptation experts. Metro was selected as one of the pilot study transit systems, and its *Climate Change Adaptation Pilot Project Report* (USDOT and FTA 2013) was prepared to analyze climate adaptation opportunities.

Council on Environmental Quality NEPA Guidance: The Council on Environmental Quality (CEQ) issued interim *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* in January 2023 to provide a framework of the analytical approach for NEPA practitioners and agencies to evaluate GHG emissions (CEQ 2023).

American Public Transportation Association (APTA): The APTA prepared *Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit* (APTA 2018), which provides guidance to transit agencies for quantifying GHG emissions generated by transit and the

potential reduction of emissions. The document was designed to ensure that agencies can provide an accurate public record of emissions and was intended to help agencies comply with future state and federal legal requirements and potentially gain credit for their early actions to reduce emissions.

State

Assembly Bill (AB) 32, Senate Bill (SB) 32, and the Climate Change Scoping Plan: AB 32 created a comprehensive, multi-year program to reduce GHG emissions in California and required CARB to develop a scoping plan to reduce GHGs and emissions to 1990 levels by 2020.

SB 32 codifies the 2030 emissions reduction goal of Executive Order (EO) B-30-15 by requiring a reduction goal of 40 percent below 1990 levels by 2030. CARB's *2017 Climate Change Scoping Plan* (2017 Scoping Plan) (CARB 2017) describes California's strategy for achieving the 2030 GHG emissions reduction target established by SB 32. The 2017 Scoping Plan also recognized the critical and complementary role of local government in achieving the state's climate goals. CARB's *Mobile Source Strategy* (CARB 2016b) describes California's strategy for containing air pollutant emissions from vehicles and quantifies growth in VMT that is compatible with achieving state climate targets.

In December 2022, CARB approved the *2022 Scoping Plan for Achieving Carbon Neutrality* (CARB 2022a), which assesses progress toward the statutory 2030 target while laying out a technologically feasible, cost-effective, and equity-focused path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update sets a target of reducing statewide GHG emissions by 85 percent by 2045 to achieve its ambitious goals. Additionally, CARB forecasts that effective implementation of the 2022 Scoping Plan will reduce statewide demand for petroleum by 94 percent and cut air pollution by 71 percent by the 2045 horizon year. The 2022 Scoping Plan includes a commitment to build no new fossil gas-fired power plants and increases support for mass transit.

AB 1493: AB 1493 amended the Clean Car Standards (Chapter 200, Statutes of 2002) that require reductions in GHG emissions in new passenger vehicles from 2009 through 2016. The Advanced Clean Cars program extends AB 1493 for model years 2017 to 2025. This program promotes clean fuel technologies (i.e., plug-in hybrids, battery electric vehicles, compressed natural gas vehicles, and hydrogen powered vehicles), reduces smog, and provides fuel saving costs.

SB 375: SB 375 reduces GHG emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. Metropolitan planning organizations are also required to incorporate sustainable community strategies as an element of the regional transportation plan.

SB 100: SB 100 establishes a state goal of 100 percent clean electricity by 2045 and advances the Renewables Portfolio Standard to 50 percent by 2025 and 60 percent by 2030.

SB 97: Enacted in 2007, SB 97 recognized the need to analyze GHG emissions as part of the CEQA process and requires the OPR to develop, and the natural resources agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions.

SB 743: SB 743 encourages land use and transportation planning decisions and investments that reduce VMT that contribute to GHG emissions, as required by AB 32. SB 743 required OPR to

develop revisions to the *CEQA Guidelines* and establish criteria to determine the significance of transportation impacts of projects within transit-priority areas.

Climate Change Executive Orders – EO S-3-05, EO B-16-12, EO B-30-2015, EO B-55-18, EO N-19-19, and EO N-79-20: EO S-3-05 established state GHG emission targets of 1990 levels by 2020 and 80 percent below 1990 levels by 2050. EO-B-16-12 specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation. EO B-30-2015 extends the goal of AB 23 and sets a GHG emission reduction goal of 40 percent below 1990 levels by 2030, addresses the need for climate adaptation, and directs the state government to undertake a number of actions. EO B-55-18 directs the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter. EO N-19-19 calls for multiple state agencies, including the California State Transportation Agency (CalSTA), to pursue strategic endeavors to reduce GHG emissions and mitigate impacts of climate change. EO N-79-20 established a target to make all vehicles in the state emission free—cars and passenger trucks by 2035, medium and heavy-duty trucks by 2045.

California State Transportation Agency Climate Action Plan for Transportation Infrastructure: In response to EO's N-19-19 and N-79-20, CalSTA published the Climate Action Plan for Transportation Infrastructure (CAPTI) in 2021 to outline strategies and actions that will advance more sustainable, equitable, and healthy modes of transportation—such as walking, biking, transit, and rail—as well as accelerate the transition to ZEV technologies. The CAPTI framework is built on guiding principles to achieve its goals for a more integrated, sustainable, equitable, and compact transportation network by 2050.

California Green Building Standards Code (CALGreen): The California Building Standards Commission adopted the statewide mandatory CALGreen Part 11 of Title 24, CCR, requiring energy-saving measures to be applied to planning, design, operation, construction, use, and occupancy of newly constructed buildings or structures.

Regional

SCAG RTP/SCS (SCAG 2016a, SCAG 2020): On April 7, 2016, SCAG adopted the SCAG 2016-2040 RTP/SCS, which includes a commitment to reduce emissions from transportation sources to comply with SB 375. The 2016-2040 RTP/SCS states that the region will meet or exceed the SB 375 per capita targets, lowering regional per capita GHG emissions (below 2005 levels) by 8 percent by 2020, 18 percent by 2035, and 22 percent by 2040. The RTP/SCS is updated every four years. On September 3, 2020, SCAG approved the 2020-2045 RTP/SCS, also known as Connect SoCal. The 2020-2045 RTP/SCS builds upon and expands the transportation and land use strategies established over several planning cycles to increase mobility options, achieve a more sustainable pattern of growth, and reach the regionals GHG reduction goals. Refer to the introduction of Chapter 4, Affected Environment and Environmental Consequences, of this Final EIS/EIR for a comparison of the 2016-2040 RTP/SCS and 2020-2045 RTP/SCS.

Policy on Global Warming and Stratospheric Ozone Depletion: This policy commits SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. SCAQMD has yet to adopt a GHG significance threshold for land use development or transportation projects and has formed a GHG CEQA Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

Metro Countywide Sustainability Planning Program: Metro has developed policies directed toward controlling GHG emissions, enhancing sustainability, and adapting to the effects of climate change, including, but not limited to, the Metro *Moving Beyond Sustainability Strategic Plan 2020* (Metro 2020f), the *Metro Countywide Sustainability Planning Policy & Implementation Plan* (Metro 2012c), the *Climate Action and Adaptation Plan* (Metro 2019e), the *Energy Conservation and Management Plan* (ECMP) (Metro 2011a), the *Green Construction Policy* (Metro 2011b), and the *Resiliency Indicator Framework Report* (Metro 2015c).

Local

The Cities of Los Angeles, Cudahy, South Gate, Downey, Paramount, Bellflower, and Artesia have adopted and implemented community-level plans and programs to address GHG emissions and climate change.

The City of Los Angeles has issued policy guidance promoting green building development and other planning strategies to reduce GHG emissions. These include *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming* (City of Los Angeles 2007), *ClimateLA* (City of Los Angeles 2008), *Sustainable City pLAn* (City of Los Angeles 2015), *LA's Green New Deal* (City of Los Angeles 2019b), and *Zero Emissions 2028 Roadmap* (Los Angeles Cleantech Incubator 2019).

The Cities of Cudahy, South Gate, Downey, Bellflower, and Artesia have policies, programs, and strategies related to climate change contained in their general plan, air quality element, climate change element, or climate action plan.

4.6.1.2 Methodology

The Affected Area for the GHG emissions analysis is the six-county geographic region under SCAG jurisdiction. Environmental impacts and consequences resulting from the generation of GHG emissions were analyzed for the No Build Alternative and the LPA, design option, and MSF. In accordance with technical advisory guidance from OPR and CARB, transit projects that substantially reduce VMT qualify for streamlined environmental assessments related to GHG emissions. Operational GHG emission sources will include induced changes in on-road vehicular traffic patterns along the LRT corridor resulting from transportation mode shift reflected in roadway network VMT, GHG emissions through consumption of electricity for rail system propulsion, and sources associated with MSF operations such as employee and service vehicle trips and energy consumption. GHG emissions associated with operation of the LPA were quantified using CalEEMod Version 2020.4.0 (CAPCOA 2021) and the EMFAC2021 mobile source emissions model.

Regional On-Road Vehicle Miles Traveled

According to CARB, transportation sources are responsible for approximately half of statewide GHG emissions. GHG emissions are released through the exhaust of combusted engine fuel when vehicles travel along the roadway network. Table 4.6.1 presents the annual roadway network VMT for Existing Conditions and the LPA in 2017 in millions of miles per year and the annual roadway network VMT for the No Build Alternative and the LPA in 2042. The CARB EMFAC2021 mobile source emissions model was used to estimate VMT emissions.

Table 4.6.1. Affected Area Annual Vehicle Miles Traveled (in Millions) – 2017 and 2042

Scenario	2017 Existing Annual Total[1]	2017 vs. Existing Condition[2]		2042 No Build Alternative Annual Total[3]	2042 vs. No Build Alternative[4]	
		Change	%		Change	%
Existing 2017	160,746	—	—	—	—	—
No Build Alternative	—	—	—	210,396	—	—
Locally Preferred Alternative	160,721	(25)	(0.016%)	210,351	(45)	(0.022%)

Source: Metro 2024f
Notes: VMT is rounded to the nearest million; VMT = vehicle miles traveled; ( ) = decrease; "—" = not applicable
[1] "2017 Existing Annual Total" evaluates "Existing 2017 + Build Alternative")
[2] "2017 vs. Existing Condition": Difference between the LPA and 2017 Existing Scenario
[3] "2042 No Build Alternative Annual Total" evaluates the LPA in year 2042
[4] "2042 vs. No Build Alternative": Difference between the 2042 LPA and No Build Alternative

Rail System Electricity

Implementation of the LPA will generate indirect GHG emissions through the consumption of electricity required for rail propulsion throughout the LPA alignment. Under Existing Conditions and the No Build Alternative, there would be no additional LRT system revenue service miles. The term "revenue service miles" refers to total miles traveled by transit vehicles while in active revenue service. The GHG emissions analysis for the Final EIS/EIR is updated based on comments received on the Draft EIS/EIR to quantify and disclose the amount of electricity consumption that will be associated with rail propulsion. Table 4.6.2 presents the annual LRV revenue miles accounted for in the operational GHG emissions analysis for the LPA and the corresponding annual electricity consumption that will be required (provided by SCE). The values presented account for a 5 percent buffer corresponding to non-revenue miles that would occur during out-of-service hours.

Table 4.6.2. Annual Light Rail Vehicle Revenue Miles – No Build and Locally Preferred Alternatives

Scenario	Annual LRV Revenue Miles[1] (VRM/year)	Annual Electricity Consumption[2] (MWh/year)
No Build Alternative (2042)	—	—
Locally Preferred Alternative (2042)	1,604,323	15,098

Source: Metro 2024f
Notes: LRV = light rail vehicle VRM = vehicle revenue miles; MWh/year = megawatt-hours per year light rail vehicle
[1] Rounded to nearest hundred
[2] Based on Metro rail electricity consumption factor of 9.41 kilowatt hours (kWh) per rail mile traveled.

Maintenance and Storage Facility Operations

Operation of an MSF will result in GHG emissions associated with vehicle trips to and from the facilities, electricity and natural gas usage, water and wastewater conveyance, and solid waste disposal. These emissions for the Final EIS/EIR are quantified using CalEEMod Version 2020.4.0 (CAPCOA 2021). Sources of emissions related to MSF operation are accounted for in the analysis of the LPA and are shown in the corresponding emissions tables under each impact criterion. The MSF is a critical component of the LPA that will provide essential infrastructure and services to Metro operations; however, it would not be constructed or operated under the No Build Alternative. Therefore, GHG emissions that will

be generated by the MSF are analyzed cumulatively with the entirety of the LPA. GHG emissions that will be generated by construction of the MSF site were also estimated using CalEEMod and included in the GHG analysis for the LPA.

4.6.2 Affected Environment/Existing Conditions

The Affected Area for the GHG emissions analysis is the six-county geographic region under SCAG jurisdiction. GHG refers to a group of chemical compounds believed to affect global climate conditions. The "greenhouse effect" is a process by which certain atmospheric gases absorb energy from sunlight within the Earth's atmosphere and prevent it from being released back into space, resulting in a warm, habitable environment on the planet's surface. The GHGs most prominently associated with man-made sources include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The global warming potential (GWP) is a metric that indicates the relative climate-forcing effect of a kilogram of emissions when averaged over the period of interest. Table 4.6.3 shows 20-year and 100-year horizons used for the GWPs. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2 (CO_2e).

Table 4.6.3. Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (years)	Global Warming Potential (20-Year)	Global Warming Potential (100-Year)
Carbon dioxide (CO_2)	100	1	1
Nitrous oxide (N_2O)	121	264	265
Methane (CH_4)	12	84	28

Source: Intergovernmental Panel on Climate Change 2014

Long-term and irrevocable shifts in weather, including changes in temperature, precipitation, and seasonal patterns, are referred to as climate change. According to *Global Warming Potential Values* (Intergovernmental Panel on Climate Change 2014), anticipated effects of climate change caused by GHG emissions include sea-level rise, climate-related hazards, extinction of species, species migration, reduced food production, exacerbated health problems, slower economic growth, and displacement of people. Possible effects of climate change along the California Coast include:

- Sea-level rise that threatens coastal wetlands, infrastructure, and property
- Increased storm activity, together with sea-level rise, that increase beach erosion and cliff undercutting
- Warmer temperatures and more frequent storms due to El Niño that bring more rain instead of snow to the Sierra Nevada Mountains, reducing the supply of water for summer needs
- Decreased summer runoff and warming ocean temperatures that affect salinity, water circulation, and nutrients in the Pacific Ocean, possibly leading to complex changes in marine life

The largest source of California GHG emissions is attributed to passenger vehicle exhaust associated with the transportation sector, including public and private vehicles and accounting for 94 million metric tons of CO_2e ($MMTCO_2e$) in 2020. For comparison, heavy-duty vehicles produced approximately 32 $MMTCO_2e$ in 2020 As shown in Table 4.6.4, transportation emissions remained fairly stable between 2011–2019, averaging approximately 161 $MMTCO_2e$, despite population growth and increases in statewide on-road VMT during that period. The steep decline in transportation sector emissions in 2020 resulted from the COVID-19 pandemic.

Table 4.6.4. California GHG Emissions Inventory

Sector	Annual Emissions ($MMTCO_2e$)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Transportation	160	157	157	158	162	165	167	165	162	136
Industrial	86	81	83	85	83	82	82	82	80	73
Electric Power	89	99	93	90	86	70	64	65	60	60
Commercial/Residential	46	39	39	36	36	37	38	37	41	39
Agriculture	34	35	34	34	33	32	32	32	31	32
High-GWP	15	16	17	18	19	19	20	21	21	21
Recycling and Waste	8	8	8	8	8	9	9	9	9	9
Emissions Total	**437**	**435**	**432**	**428**	**427**	**415**	**411**	**411**	**404**	**369**

Source: CARB 2022b
Notes: The emission total may slightly vary within the years due to rounding of the CARB emissions inventory.
GHG = greenhouse gas; $MMTCO_2e$ = million metric tons of CO_2e

Notably, between October 2015 and February 2016, an exceptional natural gas leak event occurred at the Aliso Canyon natural gas storage facility that resulted in unexpected GHG emissions of considerable magnitude. The exceptional incident released approximately 109,000 metric tons of methane, which equated to approximately 1.96 $MMTCO_2e$ of unanticipated emissions in 2015 and an additional 0.52 $MMTCO_2e$ in 2016 (CARB 2016a).

The occurrence of unexpected incidents such as the Aliso Canyon natural gas leak and the exacerbated severity of drought and wildfires throughout the state are impossible to predict and present additional challenges in reducing statewide GHG emissions. While the GHG emissions produced by these atypical circumstances are not included in the state routine inventory emissions, ultimately California must account for and mitigate the emissions to achieve its climate goals.

At the regional scale, based on SCAG's estimated regional transportation GHG emissions presented in the 2016-2040 RTP/SCS, approximately 185,519 tons per day of regional transportation-related CO_2 emissions would occur in 2040. Los Angeles County, the largest county in the SCAG region, represents 78,831 tons per day of transportation emissions (50 percent of the regional transportation total).

Regarding Metro's GHG emissions inventory, the single largest contributor to Metro GHG emissions is the directly operated bus fleet that accounts for approximately 57 percent of Metro transportation and transit emissions that total 416,000 $MTCO_2e$ in 2017 (Metro 2024f).

However, the Metro transit network offsets considerably more emissions than it generates. In 2017, Metro's net GHG emissions benefit was approximately 605,000 $MTCO_2e$ due to displacement of on-road vehicle trips and land use benefits. In 2019, the combination of transportation mode shift associated with operation of the Metro transit system and land use planning resulted in a net operational reduction in GHG emissions of 591,123 metric tons per year. New fleet technologies powered by renewable energy and reduced building energy usage can reduce Metro's emissions over the long term. Through implementation of the *Climate Action and Adaptation Plan* (Metro 2019e), Metro is committed to reducing systemwide GHG emissions by 79 percent by 2030 relative to the 2017 baseline.

4.6.3 Environmental Consequences/Environmental Impacts

4.6.3.1 No Build Alternative

Under the No Build Alternative, projects identified in the 2016-2040 RTP/SCS, Metro's 2009 LRTP, and Measure M, as well as local projects, would continue to be built. The No Build Alternative excludes the facilities and infrastructure of the LPA that would increase GHG emissions. The No Build Alternative would not reduce regional GHG emissions to the same degree as the LPA. The reduction in regional GHG emissions under the No Build Alternative is attributed to improvements in fuel and engine technologies mandated by regulatory programs that are built into the emissions modeling software. Under NEPA, the No Build Alternative would not result in an adverse effect related to GHG emissions.

4.6.3.2 Locally Preferred Alternative

Implementation of the LPA will introduce a new LRT alignment that will provide an alternative mode of transportation to automobile use, which will spur transportation mode shift and ultimately reduce on-road VMT, as demonstrated in Table 4.6.1. The results of the emissions analysis presented in Table 4.6.5 demonstrate that the LPA will reduce regional GHG emissions by approximately 8,202 $MTCO_2e$ annually (a 0.013 percent decrease) relative to the No Build Alternative in the operational year of 2042. The GHG emissions for the LPA include emissions from construction of the LRT alignment and all support infrastructure and facilities amortized over a 30-year operational lifetime.

The GHG emissions assessment presented in the Draft EIS/EIR disclosed that implementation of Alternative 3 would reduce annual GHG emissions by 1,681 $MTCO_2e$ in 2042, and that indirect emissions generated at SCE facilities to supply electricity to the LRT system and ancillary facilities would be 6,633 $MTCO_2e$ annually. Updates to the methodology, as described in Section 4.6.1.2 (i.e., quantifying rail propulsion electricity and availability of more recently published carbon intensity factors for SCE-delivered electricity) are responsible for these differences. An updated SCE carbon intensity factor from the CalEEMod appendix (CAPCOA 2023) is used in this Final EIS/EIR analysis—263 lbs. CO_2e/MWh compared to 705 lbs. CO_2e/MWh in the Draft EIS/EIR—resulting in the total indirect emissions for LRT propulsion, stations, and parking decreasing to 2,296 $MTCO_2e$ (CAPCOA 2023). This carbon intensity factor was also applied to electricity that will be used at the MSF, resulting in a decrease relative to the Draft EIS/EIR analysis.

Table 4.6.5. Operational GHG Emissions

Emissions Source	Annual Greenhouse Gas Emissions ($MTCO_2e$/year)		
	Existing (2017)	No Build Alternative (2042)	Locally Preferred Alternative (2042)
Regional On-Road VMT	69,522,545	62,843,002	62,830,852
LRT Vehicle Propulsion (Indirect)	–	–	1,800
Stations and Parking Energy (Indirect)			496
Amortized Alignment Construction[1]	–	–	858
MSF Operations	–	–	712
Amortized MSF Construction[1]	–	–	82
Total Emissions	**69,522,545**	**62,843,002**	**62,834,800**
Change from No Build Alternative	**–**	**–**	**(8,202)**
Percent Change from No Build Alternative	**–**	**–**	**(0.013%)**

Source: Metro 2024f

Notes [1] Per SCAQMD guidance (2008), construction emissions are averaged over a 30-year operational lifetime and assessed in combination with emissions associated with project operations; the total amortized construction emissions include 82 $MTCO_2e$ that will be generated by construction of the MSF.

Notes: GHG = greenhouse gas; LRT = light rail transit; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons of CO_2e; VMT = vehicle miles traveled; ( ) = decrease/reduction

The traffic data summarized in Table 4.6.1 indicated that the LPA will result in a reduction of approximately 45 million VMT annually compared to the No Build Alternative for the 2042 transportation modeling scenario year. Transportation planning initiatives have determined that displacing on-road VMT through public transit is critical to improving regional transportation and reducing GHG emissions from transportation sources. The decrease in annual operational GHG emissions relative to the No Build Alternative is attributed to increased Metro ridership and enhanced circulation patterns. GHG emissions modeling for the LPA is consistent with the conclusions of the FTA programmatic assessment for light rail projects demonstrating net reductions in GHG emissions for high-ridership LRT projects without diesel bus fleet components (FTA 2017). Under NEPA, the LPA will not result in an adverse effect related to GHG emissions.

4.6.3.3 Design Option: Close 186th Street

In terms of sources of GHG emissions, operation of the LPA with implementation of the design option would involve the same emissions sources as those described in Table 4.6.5 for the LPA without the design option. Implementation of the LPA with the design option would include the same number of aerial and at-grade stations as well as parking facilities and the same MSF design as the LPA without the design option. Operation of the LPA with the design option would also be characterized by the same annual LRT VMT as the LPA without the design option. Therefore, implementation of the design option would not create adverse effects related to GHG emissions and climate change.

4.6.3.4 Maintenance and Storage Facility

The MSF will result in the consumption of fuels and electricity. The MSF is a component of the LPA, as such, energy consumption is accounted for in the overall analysis of the LPA. Operation of the MSF will generate approximately 794 $MTCO_2e$ per year, including approximately 82 $MTCO_2e$ of amortized construction emissions and 712 $MTCO_2e$ of annual operating emissions. These quantities are lower than the emissions disclosed in the Draft EIS/EIR, which estimated that annual MSF emissions would be 1,834 $MTCO_2e$. As explained previously, this decrease reflects an updated SCE delivered electricity carbon intensity factor from the new CalEEMod appendix: 263 lbs CO_2e/MWh compared to 705 lbs CO_2e/MWh that was used in the Draft EIS/EIR. The conclusion of the analysis in this Final EIS/EIR is consistent with the Draft EIS/EIR that, even with the annual MSF construction and operating emissions, implementation of the LPA will provide environmental benefits through a net reduction in regional GHG emissions.

As shown in Table 4.6.5, annual operational emissions will be approximately 712 $MTCO_2e$ in 2035 following the completion of construction activities, and this estimate represents a conservative magnitude of emissions relative to what would be generated in 2042. The MSF site will comply with mandatory Title 24 and CALGreen Building Code requirements and will achieve a minimum Silver rating from the Leadership in Energy and Environmental Design (LEED) certification, as specified in the ECMP. The MSF will support an LRT system achieving a net GHG emissions reduction compared to the No Build Alternative. Therefore, development of the MSF site as a component of the LPA will not result in an adverse effect related to GHG emissions.

4.6.3.5 U.S. Army Corps of Engineers Facilities

Operation of the LPA on aerial structures over USACE facilities is substantially similar to operation of the LPA along other locations of the alignment. These aerial structures will be part of a transit system to serve residents, visitors, and employees of the surrounding communities and cities. As discussed in Section 4.6.3.2, the LPA will be generally consistent with regional transportation and land use planning documents and will provide environmental benefits through a net reduction in annual GHG emissions within the Affected Area for the GHG emissions analysis. Therefore, no effects related to GHG emissions and climate change will occur at the USACE facilities during operation of the LPA.

4.6.4 Project Measures and Mitigation Measures

No project or mitigation measures are required.

4.6.5 California Environmental Quality Act Determination

To satisfy CEQA requirements, impacts related to GHG emissions are analyzed in accordance with Appendix G of the *CEQA Guidelines*, discussed in this section. The state *CEQA Guidelines* recommend that the significance criteria established by the applicable air quality management district or air pollution control district be relied upon to make determinations of significant effect on the environment. Although SCAQMD has a regulatory role in the South Coast Air Basin, it has not adopted or proposed any quantitative thresholds that would be applicable to the proposed LRT corridor. Neither CARB, OPR, SCAQMD, nor Metro have officially promulgated specific thresholds for analyzing GHG emissions under CEQA. CARB and OPR acknowledge that transforming public transit systems and reducing VMT is an effective climate adaptation strategy. OPR recommends the

streamlining of GHG emissions impacts analyses for transit and active transportation projects because these projects reduce GHG emissions, increase multimodal transportation networks, and facilitate mixed-use development, which are crucial land use planning initiatives for climate adaptation. As such, project GHG emissions are assessed in the context of the existing GHG emissions inventory, the Metro systemwide GHG emissions displacement, and climate adaptation plans and policies.

4.6.5.1 Threshold GHG-1: Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

No Project Alternative

The No Project Alternative would not involve operation of any project-related facilities or infrastructure and would not introduce any new direct or indirect sources of GHG emissions into the region. Under the No Project Alternative, the LPA would not be constructed and the existing Metro LRT network would remain unchanged. Existing on-road VMT would not be reduced throughout the project corridor; energy consumption used to power the Metro LRT system would not increase; and sources of GHG emissions involved in MSF operations would not be present.

Climate change is a significant issue on multiple geographic levels, including regionally and statewide, and ongoing efforts to reduce emissions both locally and regionally would remain in place. Numerous GHG reduction plans and policies have been developed by local, regional, state, and national authorities to reduce emissions. These are discussed in Section 4.6.1. The No Project Alternative would neither contribute to nor interfere with ongoing endeavors to achieve the GHG emission reduction targets. Additionally, the No Project Alternative includes a wide range of transit projects designed to reduce VMT and regionally significant climate change effects. These projects are accounted for in the approved and adopted SCAG 2016–2040 RTP/SCS, the CARB Climate Change Scoping Plan, and other regional and state GHG reduction plans. Therefore, impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA will generate direct GHG emissions through operations at the MSF, and indirect GHG emissions will be generated through energy use (i.e., LRT propulsion, lighting and accessory equipment at station platforms, and MSF operations). GHG emissions from on-road motor vehicles will also be substantially affected through induced mode shift emissions displacement. The *2022 Climate Change Scoping Plan for Achieving Carbon Neutrality* (CARB 2022a) recognizes that managing total demand for transportation energy by reducing VMT will continue to play an indispensable role in achieving the state's GHG emissions reduction targets. Furthermore, Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 4.6.1, the LPA (if operational in 2017) will result in a reduction of approximately 25 million annual VMT compared to the Existing (No Project) Conditions. The VMT reduction in 2017 caused by the LPA will further contribute to the Metro transit system that displaced approximately 1,020,485 $MTCO_2e$ annually and achieved a net reduction of 604,613 $MTCO_2e$ in 2017 (Metro 2024f). The LPA will result in a reduction of approximately 45 million annual VMT in 2042 compared to the No Build Alternative (Table 4.6.1), and the GHG emissions impact will be less than significant in accordance with OPR and CARB guidance based on the decrease in VMT.

As demonstrated by the analysis in Table 4.6.5, the LPA will reduce regional emissions by 8,202 $MTCO_2e$ annually (0.013 percent decrease) in the operational horizon year of 2042. The LPA will constitute a regionally significant transit expansion that induces the displacement of on-road VMT and supports transportation planning efforts to reduce VMT and achieve GHG emissions reduction targets outlined in the CARB Climate Change Scoping Plan and the SCAG RTP/SCS. The LPA is consistent with the objectives of OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, the LPA will result in a less than significant impact related to the generation of GHG emissions, and mitigation will not be required.

Design Option: Close 186th Street

Implementation of the LPA with the design option would not alter the analysis or conclusions presented above for the LPA without the design option regarding GHG emissions and potentially adverse effects related to climate change. The LPA with the design option would involve the same LRT alignment and would operate with the same annual VMT as the LPA without the design option. The stations, parking facilities, and MSF would be in the same locations with implementation of the design option as with implementation of the LPA without the design option, and the same amount of forecasted ridership and vehicle trip displacement would be anticipated. The LPA with the design option would not introduce any sources of GHG emissions to the Affected Area for the GHG emissions analysis beyond what was analyzed and disclosed for the LPA without the design option. Therefore, the LPA with the design option would result in a less than significant impact related to the magnitude of long-term GHG emissions that would be generated directly and indirectly by its operation, and mitigation would not be required.

Maintenance and Storage Facility

The MSF site will result in the consumption of fuels and electricity and is a component of the LPA in which energy consumption is accounted for in the overall analysis of the LPA. The MSF site will generate approximately 794 $MTCO_2e$ per year in the horizon year of 2042, including approximately 82 $MTCO_2e$ of amortized construction emissions and 712 $MTCO_2e$ of operational emissions. These emissions estimates are provided in Table 4.6.5, with the amortized construction emissions being included as part of overall amortized LPA construction emissions. The MSF site will comply with mandatory Title 24 and CALGreen Building Code requirements, will achieve a minimum LEED Silver rating, and will contribute to a net GHG emissions reduction by contributing to implementation of the LRT and the associated VMT reductions. Therefore, the MSF site will result in a less than significant impact related to the generation of GHG emissions, and mitigation will not be required.

4.6.5.2 Threshold GHG-2: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

No Project Alternative

The No Project Alternative would not include the operation of any project-related facilities or infrastructure. Therefore, no significant impact would occur and mitigation is not required. The No Project Alternative would not reduce VMT and associated GHG emissions from transportation sources (Table 4.6.1).

Locally Preferred Alternative

No state, regional, or local GHG reduction plans promote increased passenger vehicles on the roadway network. As described in Section 4.6.5.1, reducing VMT is identified in the 2022 Climate Change Scoping Plan as an indispensable component of achieving the state's GHG emissions reduction targets. Implementation of the LPA will enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. The LPA is consistent with the objectives of OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips.

As shown in Table 4.6.1, the LPA will reduce annual on-road VMT by approximately 25 million if operational in 2017 and will reduce annual on-road VMT by approximately 45 million in 2042. Metro identifies transportation mode shift as the primary mechanism of GHG emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide and regional GHG emissions reduction strategies within long-range planning objectives. The LPA will be consistent with the 2022 Scoping Plan, the 2016-2040 RTP/SCS, and other relevant GHG reduction and conservation plans through achieving a net reduction in emissions, as presented in Table 4.6.5; this will further advance the Metro transit system's net displacement of GHG emissions. Therefore, the LPA will result in a less than significant impact related to GHG reduction plans, and mitigation will not be required.

Design Option: Close 186th Street

The analysis for the LPA with the design option as it relates to GHG emission reduction plans is similar to the discussion presented above for the LPA without the design option. The LPA with the design option would not alter the length or number of stations and parking facilities along the LRT alignment and would not introduce any new sources of GHG emissions to the Affected Area for the GHG emissions analysis beyond those analyzed for the LPA without the design option. Operation of the LPA with the design option would result in the same annual net reduction in regional GHG emissions (8,394 $MTCO_2e$) as the LPA without the design option in the horizon year of 2042, as presented in Table 4.6.5. Therefore, implementation of the LPA with the design option would result in less than significant impacts regarding consistency with GHG emission reduction plans, and mitigation will not be required.

Maintenance and Storage Facility

The MSF will be designed and constructed in compliance with mandatory Title 24 and CALGreen Building Code requirements and will achieve a minimum LEED Silver rating, as specified in the ECMP. The MSF is a necessary component of the LPA and will be consistent with applicable policies and plans designed to enhance sustainable development and reduce the regional GHG emissions inventory. Results of the emissions analysis determined that operation of the MSF will generate approximately 794 $MTCO_2e$ annually in the horizon year of 2042, of which 82 $MTCO_2e$ will be amortized construction emissions, and operations will produce 712 $MTCO_2e$, as summarized in Table 4.6.5. Construction GHG emissions are addressed in Section 4.19.3.6 of this Final EIS/EIR. However, the LPA will ultimately result in a substantial net reduction in regional GHG emissions. Therefore, the MSF will result in a less than significant impact related to GHG emission reduction plans, and mitigation will not be required.

4.7 Noise and Vibration

This section summarizes the existing noise and vibration environment and sensitive land uses that were used in the evaluation of the LPA, MSF, and design option, and the potential adverse effects and impacts on these resource areas. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Noise and Vibration Impact Analysis Report* (Metro 2024j).

Since completion of the Draft EIS/EIR, changes have been incorporated into the noise and vibration methodology and analysis. A detailed list of the methodology changes is included in Section 1.6 of the Noise and Vibration Impact Analysis Report. Modeling was updated to reflect refinements to the LPA, such as swapping the location of the LRT and freight tracks within the La Habra Branch, opening previously closed at-grade crossings, and closing previously open at-grade crossings. Mitigation Measures NOI-1 (Soundwalls) through NOI-5 (Freight Track Relocation Soundwalls) were updated as applicable. The changes also include removal of clusters that no longer have noise-sensitive uses, addition of noise clusters as a result of modeling refinements (i.e., the division of previously analyzed clusters to add more specificity to the analysis) or as a result of comments received on the Draft EIS/EIR, which identified newly constructed residential uses, updated operational information such as using operational speeds instead of design speeds, and refined design of soundwalls at at-grade crossings and taller soundwall heights at locations along the LPA. The soundwall design at at-grade crossings was refined to bring the edge of the soundwall to the pedestrian crossing to minimize the gap in the soundwall and increase noise-reduction benefits. Maximum soundwall heights considered in the Draft EIS/EIR were 4 feet for soundwalls on the aerial structure and 8 feet for soundwalls at-grade. The maximum soundwall heights considered for the LPA are 12 feet on the aerial structure and 16 feet at-grade.

The modeling refinements and increased soundwall heights were made in response to comments received regarding community concerns for residual noise impacts after implementation of mitigation identified in the Draft EIS/EIR. The audible warnings noise now assumes the minimum allowable bell noise level of 75 dBA, L_{max} at 10 feet, crossing signal bell shrouds, and a gate-down-bell-stop variance at crossings located near sensitive receivers. The measures are listed as Project Measure NOI PM-1 (Crossing Signal Bells) and NOI PM-2 (Gate-Down-Bell-Stop-Variance), which were included in the Draft EIS/EIR as Mitigation Measures NOI-4 and NOI-5 and would be equivalent to the mitigation measures included in the Draft EIS/EIR. The two mitigation measures were incorporated as project measures as a result of coordination with CPUC, which confirmed that they were feasible and are anticipated to be approved by CPUC. The two project measures will be installed at at-grade crossings with adjacent residential sensitive receptors once CPUC approval is obtained. Obtaining approval requires demonstrating to the CPUC that the safety measures in place at the crossing more than compensate for stopping the bell noise once the gates are in the horizontal position. Based on experience on previous Metro projects and input from CPUC, Project Measures NOI PM-1 (Crossing Signal Bells) and NOI PM-2 (Gate-Down-Bell-Stop-Variance) are anticipated to be approved and implemented.

Additional vibration analysis was completed for the Dante Valve Company and a water utility in the City of Bellflower in response to comments on the Draft EIS/EIR and one newly constructed residential building in the City of South Gate, and operational information was updated consistent with the noise analysis.

Overall, the refinements in noise modeling, including implementation of Project Measures NOI PM-1 (Crossing Signal Bells) and NOI PM-2 (Gate-Down-Bell-Stop-Variance) and refinements of the soundwall heights and locations, have reduced the number of residual impacts compared to the Alternative 3 residual impacts presented in the Draft EIS/EIR from 101 moderate impacts to 31 moderate impacts and from 59 severe impacts to 4 severe impacts for LRT noise without the design option. The LPA with design option would result in 33 moderate impacts and 2 severe impacts remaining. Regarding the sensitive uses affected by the combination of LRT noise with freight noise, the number of residual impacts compared to Alternative 3 will be reduced from 37 moderate impacts to 31 moderate impacts and 11 severe impacts to 1 severe impact.

The following background information is summarized from the FTA *Transit Noise and Vibration Assessment Manual* (FTA 2018). Sound is technically described in terms of the amplitude (loudness) and pitch (frequency) of the sound. Sound is transmitted as acoustic energy, which is vibration (sound waves) transmitted through various media. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The A-weighted scale (dBA) reflects the normal hearing sensitivity range of the human ear. Noise is generally defined as unwanted sound. The noise analysis discusses sound levels in terms of equivalent noise level (L_{eq}), day-night noise level (L_{dn}), sound exposure level (SEL), and maximum sound level (L_{max}). L_{eq} is the average noise level on an energy basis for any specific time period.

For the purposes of the operational noise impact analysis, the L_{eq} for one hour is the energy average noise level during the hour. An 8-hour L_{eq} is the energy average noise level during a time period of eight hours. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise that has the same energy content as the fluctuating noise level. The L_{eq} is expressed in units of dBA.

L_{dn} is a 24-hour L_{eq} with an adjustment to reflect the greater sensitivity of most people to nighttime noise. The adjustment is a 10-dBA penalty for all sound that occurs in the nighttime hours of 10:00 p.m. to 7:00 a.m. The effect of the penalty is that in the calculation of L_{dn}, any event that occurs during the nighttime hours is equivalent to 10 of the same events during the daytime hours. L_{max} is the maximum A-weighted sound level reached during a single noise event. However, L_{max} is not used as the descriptor for transit environmental noise impact assessment for several reasons. L_{max} ignores the number and duration of transit events, which are important to people's reaction to noise and cannot be totaled into a one-hour or a 24-hour cumulative measure of impact. For the purposes of this analysis, L_{max} was used to obtain SEL.

SEL is the cumulative noise exposure from a single noise event. The fact that SEL is a cumulative measure means that (1) louder events have greater SELs than do quieter ones, and (2) events that last longer in time have greater SELs than do shorter ones.

The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise as well as the amount of background noise present before the intruding noise and the nature of work or human activity that is exposed to the noise source. The health effects of noise-induced hearing loss are largely an occupational hazard and are not relevant to this analysis.

In addition to noise impacts, the analysis assesses groundborne vibration (GBV). Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment. According to the FTA, train wheels rolling on the rails create vibration energy that is transmitted through the track support system into the transit structure (FTA 2018).

The vibration analysis discusses vibration in terms of peak particle velocity (PPV) and root mean square (RMS) amplitude. PPV is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The RMS amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the square root of the average of the squared amplitude of the signal. Decibel notation (VdB) is used to report RMS particle velocity.

4.7.1 Regulatory Setting and Methodology

4.7.1.1 Regulatory Setting

Federal, state, regional, and local plans and regulations have been reviewed regarding the generation and control of noise that could adversely affect population and noise-sensitive land uses. FTA, in conjunction with the FHWA, has issued detailed regulations implementing NEPA for transit and highway projects. The regulations are codified in Part 771 of Title 23, CFR, and are titled Environmental Impact and Related Procedures.

The LPA will traverse multiple local jurisdictions with distinct noise regulations, plans, and policies, which are most relevant to stationary sources (e.g., TPSSs) and the compatibility of land uses with the existing noise levels.

4.7.1.2 Methodology

The following sections summarize the methodology used for the noise and vibration analysis. Additional information on the methodology is included in the Noise and Vibration Impact Analysis Report.

To satisfy NEPA requirements, the analysis used the guidance in the FTA's *Transit Noise and Vibration Impact Assessment Manual* for assessing operational noise and vibration associated with transit projects. Impacts are analyzed in accordance with the FTA noise and vibration impact criteria, as discussed in more detail below.

To satisfy CEQA requirements, noise and vibration impacts are generally analyzed in accordance with Appendix G of the *CEQA Guidelines* and based on the FTA noise and vibration impact criteria, identified in Section 4.7.5 of this Final EIS/EIR.

Noise

FTA published the *Transit Noise and Vibration Assessment Manual* (FTA 2018) to provide technical guidance for conducting noise and vibration analyses for transit projects, as well as direction regarding preparation of the information for FTA's environmental documents.

Operational sources of noise include train movements, audible warnings (crossing signal bells), station public address systems, special trackwork (turnouts and crossovers), wheel squeal,

ancillary facilities (TPSS and ventilation shafts), parking facilities, and MSF activity. A model was developed to estimate the project noise using SELs and calculation formulas provided in the FTA guidance document. The potential for noise impacts was analyzed using a series of steps provided in the FTA guidance, including identifying sensitive land uses, monitoring existing noise levels, estimating project noise from the source, propagating project noise to the land uses, comparing project noise to the FTA impact criteria, and identifying mitigation where necessary.

According to the FTA Guidance Manual, the appropriate screening distance to identify sensitive receivers for LRT facilities is 350 feet. Signalization of intersections, roadway re-striping, and minor roadway modifications would occur as part of the LPA. The Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (Caltrans 2013a) states that a doubling of traffic volumes would result in a perceptible increase of noise of 3 dBA. Vehicular trips will not double traffic volumes along any roadway, and the permanent increase in noise levels will be less than 3 dBA. As such, traffic noise has not been further assessed in this analysis.

The impact criteria follow a sliding scale dependent on the type of land use and existing noise levels. As the existing noise exposure increases, the amount of allowable increase in noise exposure from the LPA decreases. The FTA impact criteria were calculated for each cluster (group of sensitive land uses with similar existing noise conditions, distance to the alignment, and other similar conditions) based upon existing noise exposure using equations found within Table C-1 of the FTA *Transit Noise and Vibration Impact Assessment Manual* guidance. The future noise exposure would be the combination of the existing noise exposure and the additional noise exposure caused by the LPA. Noise clusters are shown in Figure 4.7-5 through Figure 4.7-12. Vibration clusters with remaining impacts are shown in Figure 4.7-13 and Figure 4.7-14. Sensitive land uses along the alignment were categorized using the FTA Land Use Categories of 1, 2, or 3. The category definitions are as follows:

- **Category 1 (High Sensitivity)** – Buildings where quiet is an essential element of their purpose (e.g., recording studios, concert halls, and theaters)
- **Category 2 (Residential) –** Residences and buildings where people normally sleep (e.g., hospitals and hotels) and where nighttime sensitivity is assumed to be of utmost importance
- **Category 3 (Institutional)** – Institutional land uses with primarily daytime use that depend on quiet as an important part of operations (e.g., schools, libraries, and churches)

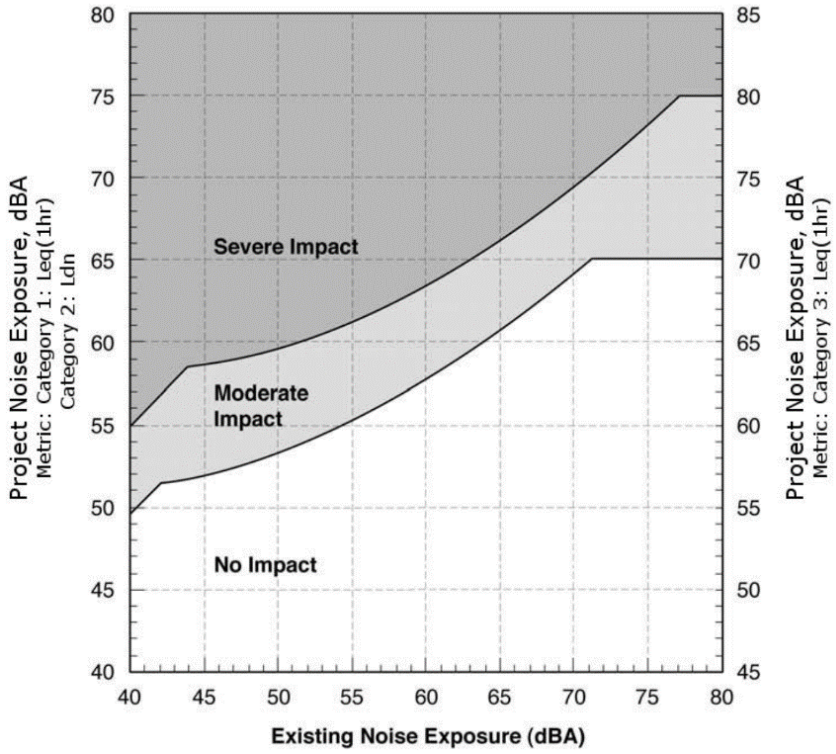
The FTA has defined three levels of impacts for sensitive uses affected by transit projects: no impact, moderate impact, or severe impact. A description of each impact level is provided in Table 4.7.1. The three impact levels are illustrated in Figure 4.7-1. Sensitive land uses may experience an impact at levels defined as moderate or severe.

Table 4.7.1. Levels of Impact

Level of Impact	Description of Land Use Category
No Impact	Project-generated noise is not likely to cause community annoyance. Noise projections in this range are considered acceptable by FTA and mitigation is not required.
Moderate Impact	Project-generated noise in this range is considered to cause impact at the threshold of measurable annoyance. Moderate impacts serve as an alert to project planners for potential adverse impacts and complaints from the community. Mitigation should be considered at this level of impact based on project specifics and details concerning the affected properties.
Severe Impact	Project-generated noise in this range is likely to cause a high level of community annoyance. The project sponsor should first evaluate alternative locations/ alignments to determine whether it is feasible to avoid severe impacts altogether. In densely populated urban areas, evaluation of alternative locations may reveal a trade-off of affected groups, particularly for surface rail alignments. Projects that are characterized as point sources rather than line sources often present greater opportunity for selecting alternative sites. This guidance manual and FTA's environmental impact regulations both encourage project sites which are compatible with surrounding development when possible. If it is not practical to avoid severe impacts by changing the location of the project, mitigation measures must be considered.

Source: FTA 2018
Note: FTA = Federal Transit Administration

Figure 4.7-1. Noise Impact Criteria for Transit Projects



Source: FTA 2018

For at-grade or aerial transit systems, groundborne noise is not considered because the airborne noise from the train pass-by will result in higher noise levels at the interior of the receiver buildings. Groundborne noise is a potential impact from underground transit operations where there is no wayside noise. Because the LPA does not include tunnel sections, a groundborne noise analysis was not completed.

Vibration

The primary source of vibration will be train movements. Vibration levels were predicted based on train speed, trackwork, transit structure, and propagation characteristics. The FTA General Vibration Assessment model was used with reference vibration levels and calculation formulas provided in the FTA guidance document. Impacts associated with the modeled vibration levels were identified using the FTA impact criteria specific to transit vibration sources operating on fixed guideways. Because actual levels of groundborne vibration sometimes differ substantially from the general assessment predictions, the following FTA guidelines (FTA 2018) are used to interpret vibration impact:

- If predicted groundborne vibration is below the impact threshold, vibration impact is unlikely.
- If the predicted groundborne vibration is 0 to 5 dB greater than the impact threshold, there is a strong chance that actual groundborne vibration levels would be below the impact threshold. Design-level vibration impact analysis at these locations should be conducted during the engineering phase.
- If predicted groundborne vibration is 5 dB or greater than the impact threshold, a vibration impact is probable and a design-level detailed vibration analysis must be conducted during the engineering phase to determine appropriate vibration-control measures.

As part of the FTA General Assessment, generalized ground-surface vibration emissions are provided for locomotive-powered freight trains at different track centerline distances operating at 50 miles per hour (mph). These vibration emission levels were compared to *in-situ* measurements conducted of BNSF Railway operations along the Los Angeles—San Diego—San Luis Obispo Rail Corridor (LOSSAN) train alignment in Carlsbad as part of a double-track project conducted for the San Diego Association of Governments. The freight train vibration measurements at Carlsbad were conducted for trains operating at 30 mph. At a reference speed of 20 mph and 20 feet, the FTA vibration emission levels are 6 VdB higher than the LOSSAN measurements. The FTA General Assessment vibration assessment for freight train operations were adjusted by -6 VdB to determine the predicted levels. This adjustment is used to determine vibration impacts at the freight train relocation sites.

Vibration analysis for the Dante Valve Company located in the City of Bellflower included vibration monitoring to establish ambient baseline vibration levels, measurement of the ground attenuation, prediction of the train vibration levels, and comparison of the predicted vibration levels with the existing ambient levels.

FTA has impact criteria for indoor groundborne vibration (Table 4.7.2). Impacts occur if these levels are exceeded. Criteria for groundborne vibration are expressed in terms of RMS velocity levels in VdB. The criteria for special buildings such as concert halls, television and recording studios, auditoriums, and theaters, which are also sensitive to vibration but do not fit into the three FTA sensitive land use categories previously described, are also presented in Table 4.7.2. Since the Project will have more than 70 train pass-bys per day, the FTA criteria for frequent

events is used to assess potential impact of LRT operation. Freight in the corridor is infrequent; therefore, the infrequent criteria apply where freight tracks are relocated.

Table 4.7.2. Groundborne Vibration Impact Criteria

Land Use Category	GBV Impact Levels (VdB, 1 micro-inch/second)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime use	75	78	83
Special Use – Concert halls, TV studios, and recording studios	65	65	65
Special Use – Auditoriums	72	80	80
Special Use – Theaters	72	80	80

Source: FTA 2018
Notes: [1] More than 70 events per day
[2] 30 to 70 events per day
[3] Fewer than 30 events per day
GBV = groundborne vibration; VdB = decibel notation

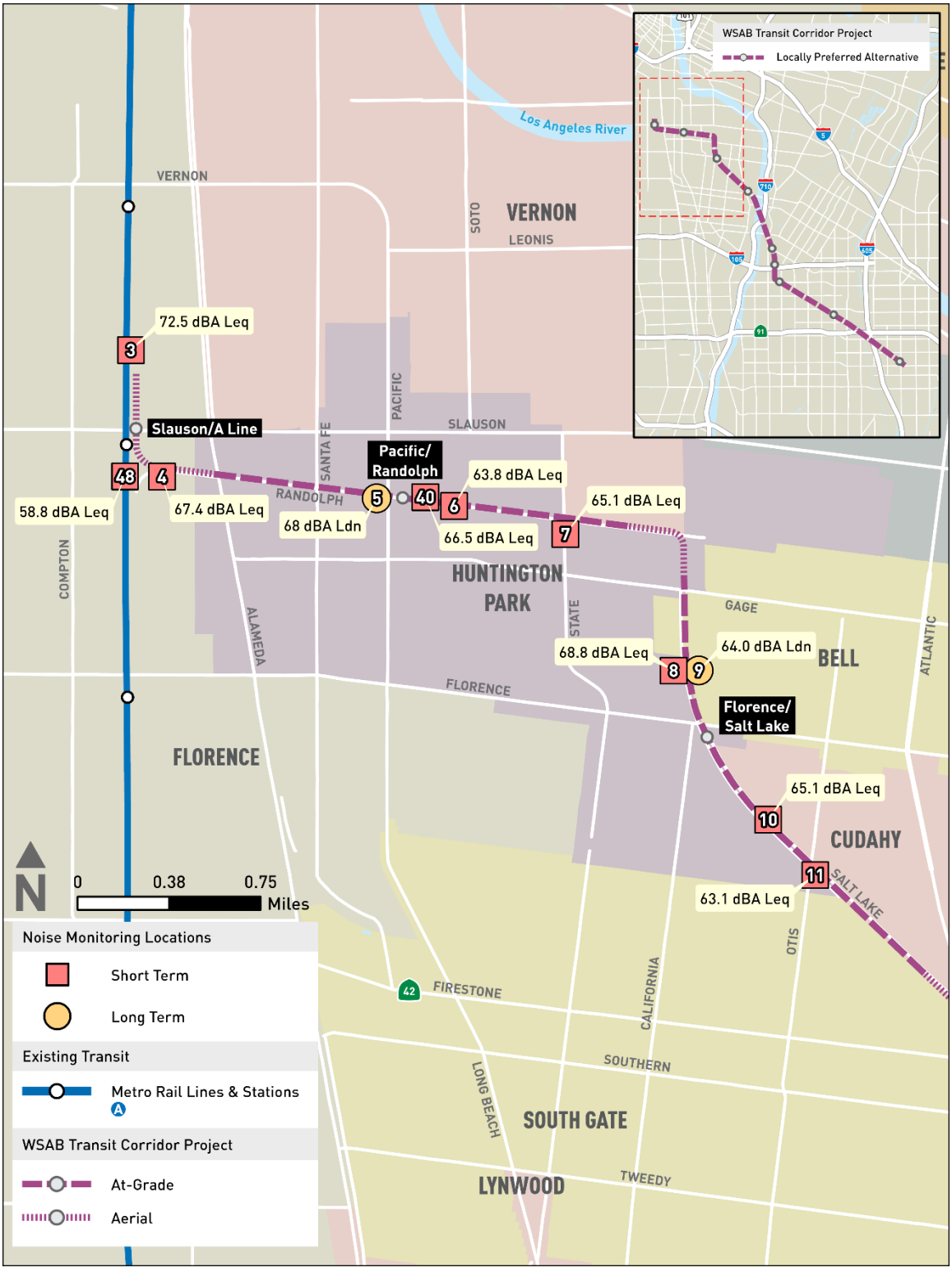
4.7.2 Affected Environment/Existing Conditions

4.7.2.1 Noise

Land uses along the alignment are described in Section 4.1.2 of the Land Use Section of this Final EIS/EIR. The noise environment in urban areas is dominated by traffic noise. Several industrial areas along the alignment for the LPA generate noise from the operation of machinery and truck trips associated with the land use activities. Occasional aircraft flyovers and movement of trains along existing freight tracks also contribute to the existing noise environment.

For the analysis, existing noise levels were identified at sensitive land uses. The sensitive land uses were grouped into clusters, each having one receiver determined based on a location that best represents the entire cluster (i.e., the receptor closest to the noise source). Land uses were identified using geographic information system (GIS), assessor's parcel maps and aerial photos, and were verified through field work. Noise measurements included in the Draft EIS/EIR were taken in 2017, 2018, and 2020. Additional noise measurements related to refinements to the analysis were taken in 2023, which includes noise sites 40 to 50. Monitoring was completed at 8 long-term locations (24-hour measurements) and 38 short-term locations (30-minute measurements) along the alignment of the LPA, including near the MSF. Figure 4.7-2 through Figure 4.7-4 show the monitoring locations and the existing noise levels. Refer to Section 4 of the Noise and Vibration Impact Analysis Report for a detailed discussion of the existing noise environment.

Figure 4.7-2. Noise Monitoring Locations and Existing Noise Levels



Source: Metro 2024j

Figure 4.7-3. Noise Monitoring Locations and Existing Noise Levels

Source: Metro 2024j

Figure 4.7-4. Noise Monitoring Locations and Existing Noise Levels

Source: Metro 2024j

4.7.2.2 Vibration

The LPA is located in an urban environment. Primary existing sources of GBV include trucks traveling along roadways, construction using heavy equipment, and active freight rail lines within the corridor. According to the FTA Guidance Manual, the background vibration levels range from 50 VdB to 65 VdB in typical urban environments. Ambient vibration levels were not measured as part of this study because the FTA vibration impact assessment is not based on the ambient levels but rather on the FTA Vibration Impact Criteria. These criteria were used to identify vibration-sensitive receivers along the LPA where potential impacts may occur based on existing land use activities. Dante Valve Company in the City of Bellflower was identified as having vibration-sensitive operations.

4.7.3 Environmental Consequences/Environmental Impacts

4.7.3.1 No Build Alternative

Under the No Build Alternative, the LPA would not be developed. However, several infrastructure and transportation-related projects would be implemented and built in the vicinity of the project alignment. These projects would change the regional transportation system and likely reduce regional vehicle miles traveled. This would result in fewer automobiles on the regional roadway network and less mobile noise. The No Build Alternative also considers the AltAir/World Energy Paramount Conversion Project (World Energy Project), which would convert portions of the World Energy's oil refinery to manufacturing renewable fuels. The World Energy Project, which is independent of the WSAB Project, would include both new operational sources of industrial noise and an increase in frequency of rail traffic from one train to two trains per day along the one-mile-long railroad connection between the refinery and UPRR ROW. Projects under the No Build Alternative would generate noise and vibration levels typical to urban long-term transportation and industrial noise and will have their own environmental evaluations with mitigation identified, if necessary. Under the No Build Alternative, no changes related to the LPA and no project-related noise or vibration sources would occur. The existing freight tracks within the rail ROWs would remain in place and the rail ROWs would be undisturbed. Existing noise sources such as industrial areas along the project alignment, occasional aircraft flyovers, traffic noise, and the movement of trains along existing railroads would remain the dominant noise sources in the project area. Under NEPA, the No Build Alternative would not result in new adverse effects related to increased noise or vibration levels at sensitive receivers.

4.7.3.2 Locally Preferred Alternative

Noise

LRT (at-grade and aerial): Noise associated with LRT includes noise from steel wheels rolling on steel rails (wheel/rail noise), propulsion motors, air conditioning, and other auxiliary equipment on the vehicles. Sensitive uses would be exposed to a combination of noise sources, including LRT pass-by noise, audible warnings noise (crossing signal bells), wheel squeal noise, and special trackwork noise. Project Measures NOI PM-1 (Crossing Signals) and NOI PM-2 (Gate-Down-Bell-Stop Variance) will manage noise levels at clusters near LRT at-grade crossings in residential areas. Curves with a radius of less than 600 feet could produce wheel squeal. Three curves along the alignment could produce wheel squeal: the first curve serves as the transition point from the Randolph Street to Long Beach Boulevard; the second curve is the transition from the San Pedro Subdivision ROW to Randolph Street; and the third curve serves as the transition point from the PEROW to the San Pedro Subdivision ROW following Arthur Avenue, just before it crosses the I-105 freeway. A 10-

dBA adjustment was added to LRT pass-by noise to account for possible wheel squeal at clusters near these locations.

Table 4.7.3 provides a summary of sensitive land uses considered for the analysis of LRT pass-by noise. A total of 308 Category 2 clusters and 26 Category 3 clusters have been analyzed for the LPA. No Category 1 land uses have been identified within the screening distance of the LPA. Refer to Appendix A of the Noise and Vibration Impact Analysis Report for additional site-specific information.

Table 4.7.3. Summary of LRT Pass-by Noise Impacts

Land Use	FTA Land Use Category[2]	Impacts		
		Moderate	Severe	Total
Residential clusters[1]	2	94	117	211
Paramount High School	3	1	0	1
Artesia Historical Museum	3	1	0	1
Wan Yuen Temple	3	1	0	1
Total Number of Impacts	2, 3	97	117	214

Source: Metro 2024j
Notes: [1] Cluster sites (groups of sensitive land uses) are shown in the Noise and Vibration Impact Analysis Report.
[2] Category 1 – Land where quiet is an essential element of its intended purpose (e.g., recording studios). Category 2 – Residences and buildings where people normally sleep; nighttime sensitivity (e.g., hospitals, hotels). Category 3 – Institutional land uses; primarily daytime use that depend on quiet as an important part of operations (e.g., schools, libraries, and churches).
FTA = Federal Transit Administration; LPA = Locally Preferred Alternative; LRT = light rail transit

The Draft EIS/EIR identified moderate impacts at 59 of 289 Category 2 clusters and severe impacts at 153 clusters under Alternative 3. Additionally, 10 Category 3 clusters out of 26 would experience moderate impacts and 2 would experience severe impacts under Alternative 3.

As noted previously, since completion of the Draft EIS/EIR, changes to the noise methodology, analysis, and mitigation design were made in response to comments received regarding community concerns for residual operational noise impacts after mitigation (refer to Section 4.7 for a summary of the changes). The number of clusters also changed to remove clusters that no longer have noise-sensitive uses or add clusters as a result of modeling refinements or in response to comments on the Draft EIS/EIR. With these updates, 308 Category 2 clusters and 26 Category 3 clusters are included in the analysis. The LPA will result in 94 moderate impacts and 117 severe impacts at Category 2 clusters. Three Category 3 clusters will experience moderate impacts. In total, the LPA will result in 97 moderate impacts and 117 severe impacts.

Regarding health effects of noise, LRT noise is unlikely to result in noise-induced hearing loss, which is an occupational hazard related to working over long periods of time in high noise environments. FTA defines moderate impacts as those having the potential to result in measurable annoyance in a community and severe impacts as those causing a high level of community annoyance. LRT noise could increase stress and the potential for stress-related diseases at affected sensitive uses. This applies to other areas that will result in noise impacts. Under NEPA, the LPA will result in adverse effects related to LRT pass-by noise.

Ancillary Facilities: TPSSs are transit system ancillary facilities that contributes to noise perceived at sensitive receptors. Sources of TPSS noise include heating, ventilation, and cooling systems (HVAC) and transformer hum. The HVAC system is the primary source of sound emitted from a TPSS. The LPA will require 17 at-grade TPSS units.

Emergency, standby, and critical operations power system generators, located along the alignment, at maintenance facilities, and at a rail operations control center, will be another potential source of noise. Reduction of noise from these sources will be provided by barriers, enclosures, sound-absorptive materials, and engine silencers as applicable to the individual facility or unit design. Operation of the generators will not be a part of regular operation and will only be used during emergency situations and during weekly testing for approximately 20 minutes. Thus, generator operation has not been included as part of the operational analysis.

The at-grade and aerial portions of the alignment will use the same TPSS units. Some of the TPSSs have alternatives denoted as site "e," resulting in multiple possible TPSS locations. Of the proposed TPSS site locations near noise-sensitive uses, 17 would be located near a residence and 1 would be located near San Antonio Elementary School. Table 4.7.4 summarizes affected land uses. One moderate impact and two severe impacts would occur if these sites are selected. Under NEPA, the LPA may result in adverse effects related to ancillary facility noise.

Parking Facilities: The LPA includes five stations with parking: Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station. According to the FTA Guidance Manual, the appropriate screening distance to identify sensitive receivers for parking facilities is 125 feet because the potential to exceed the FTA noise impact criteria is limited beyond that distance. Sensitive receivers will be located within 125 feet of each of the parking facilities, except for the Firestone Station parking facility. Noise levels modeled for sensitive receptors within 125 feet of each parking facility will not exceed the FTA noise impact criteria. Sensitive receptors located more than 125 feet away will not experience parking facility noise that will exceed the FTA noise impact criteria. Under NEPA, the LPA will not result in adverse effects related to parking facility noise.

Freight Track Relocation: Relocation of existing freight tracks will be required to the north of the project alignment within the La Habra Branch ROW, to the west of the project alignment within the San Pedro Subdivision ROW, and to the north of the project alignment within the Metro-owned PEROW to accommodate the LPA alignment and maintain existing operations along the ROW where the LRT tracks will be co-located with the freight tracks.

Freight train counts were conducted in September 2019. Only one train traversed the freight tracks along Randolph Street over a period of nine days, with this event occurring at midnight. One daytime train event occurred near the junction of Randolph Street and Slauson Avenue, but it did not fully traverse Randolph Street. Due to the infrequency and timing of freight trains along Randolph Street, it is unlikely that noise measurements captured freight train noise. Therefore, the FTA impact criteria have been based upon the existing freight noise calculated using the existing location of freight tracks. Existing noise levels were also adjusted along Façade Avenue to account for existing freight that was not captured during noise measurements.

Table 4.7.4. Ancillary Facility Noise Impacts by TPSS Site

TPSS Site	Location	Closest Residence	Distance (feet)[1]	Existing (dBA, L_{dn})	TPSS Noise (dBA, L_{dn})	Noise Impact Criteria		Impact
						Moderate	Severe	
15(e)	East of Stafford Ave and north of Randolph St within private property	SFR to the west, east, and south	15	61.8	67	59	64	Severe
7(e2)	South of Rose Street and just west of Arthur Ave within Metro-owned property	SFR to the north	20	62.4	64	59	65	Moderate
5(e)	North of Hegel St and south of the Bellflower Bike Trail within private property	SFR to south, southwest, and southeast	30	52.0	61	54	60	Severe

Source: Metro 2024j
Notes: [1] Distance to the closest area of human use or closest building façade.
dBA = A-weighted decibel; L_{dn} = day-night noise level; L_{eq} = equivalent noise level; SFR = single-family residential; TPSS = traction power substation

Relocated freight tracks will generally differ from their current alignments by only a few feet and will remain in the rail ROW. Freight train noise is generally intermittent, and only approximately two to three trains pass-by per day. No new noise source will be added, and the frequency of freight trains will not change. However, the freight tracks will be relocated closer to sensitive receivers at two locations. At the first location, there will be an approximately 9-foot shift of the centerline of the freight tracks to the north of the La Habra Branch ROW along Randolph Street. This will bring the freight tracks within approximately 50 feet from inhabited structures along the northern side of Randolph Street. Freight trains are anticipated to travel at a speed of 10 mph along Randolph Street and will be required to sound their warning horns due to grade crossings.

The other location will be near the I-105 freeway, where the centerline of the freight tracks will be shifted approximately 15 feet. This relocation will be near sensitive uses north and south of the I-105 freeway and residences along Façade Avenue and near Rosecrans Avenue. Freight trains are anticipated to travel at a speed of 10 mph along Façade Avenue and will only be required to sound their warning horns near the grade crossing at Century Boulevard. Freight train noise at both of these locations has been added to the LRT noise in Table 4.7.3.

In summary, with respect to LRT-plus-freight-relocation impacts, the LPA will result in 53 moderate impacts and 22 severe impacts at Category 2 clusters as a result of the combination of freight track relocation, freight train noise, and LRT noise. Eight Category 3 clusters will experience moderate impacts. These LRT-plus-freight-relocation impacts are confined to areas where the freight tracks are being shifted closer to sensitive receptors and do not affect LPA alignment. Category 3 clusters along Randolph Street are unlikely to regularly experience impacts due to a combination of freight and LRT noise. This is because Category 3 uses are daytime uses and will not typically be open when freight trains traverse Randolph Street at night. Under NEPA, the LPA will result in adverse effects related to relocated freight track noise.

Vibration

LRT Pass-by (at-grade and aerial): Train travel will vibrate the transit structure and create GBV that could interfere with land use activities. No impacts from LRT pass-bys were identified at Category 3 institutional facilities, including, but not limited to, schools, medical facilities, or religious facilities. However, the FTA vibration thresholds will be exceeded at 88 Category 2 residential clusters. These predicted GBV levels are in the range of 1 to 18 VdB above the FTA vibration criteria. Twenty-three clusters are predicted to exceed the impact criteria by more than 5 VdB. Where the projected groundborne vibration is 1 to 5 dB greater than the impact threshold, there is a strong chance that actual groundborne vibration levels will be below the impact threshold and will not result in an adverse effect related to projected groundborne vibration. Where the projected groundborne vibration is 5 dB greater than the impact threshold, vibration impact is probable. Under NEPA, the LPA could result in an adverse effect related to at-grade and aerial LRT pass-by vibration.

Freight Track Relocation: Freight tracks will be relocated to the north of the LPA alignment within the La Habra Branch ROW, and to the west of the LPA alignment within the San Pedro Subdivision ROW, and to the north of the LPA alignment within the Metro-owned PEROW to accommodate the LPA and maintain existing operations along the ROW where the proposed LRT tracks will overlap. Vibration levels from freight operations on the relocated tracks will range from 74 dBA to 80 dBA at the nearest residential structures. The FTA impact criterion for residential properties exposed to infrequent vibration events is 80

VdB. Under NEPA, projected freight train vibration will not exceed the impact threshold and will not result in adverse effects related to freight track relocation vibration.

Vibration Analysis at Dante Valve Company: Peak existing vibration levels of between 75 and 80 VdB were measured in the manufacturing and testing areas of the Dante Valve Company at 15230 Lakewood Boulevard in the City of Bellflower. Predicted LRT pass-by operation vibration would be less than 75 VdB (for more details, see the Noise and Vibration Impact Analysis Report).

4.7.3.3 Design Option: Close 186th Street

Noise

The design option would close the 186th Street at-grade crossing and maintain the 187th Street as an at-grade crossing. The design option would also remove the crossing signal noise from 186th Street and add crossing signal noise to 187th Street. The LPA with the design option would result in 96 moderate impacts and 118 severe impacts, which would be a decrease of 1 moderate impact and an increase of 1 severe impact compared to the LPA without the design option (Table 4.7.3). The LPA with and without the design option would result in a total of 214 impacts.

Vibration

Groundborne vibration impacts for the LPA with the design option would be identical to those described above for the LPA without the design option.

4.7.3.4 Maintenance and Storage Facility

Noise

Noise levels related to MSF noise sources were modeled at the 57 sensitive use clusters near the MSF, and noise levels will not exceed the FTA noise impact criteria at nearby sensitive uses. Under NEPA, the MSF will not result in adverse effects related to noise.

Vibration

The MSF is approximately 75 feet from the nearest residential land uses along Virginia Avenue. Train movements through crossover trackwork at 10 mph are predicted to result in a GBV level at these residential land uses of 71 VdB, which will not exceed the FTA impact threshold of 72 VdB. Train vibration is predicted to be below the impact threshold based on FTA guidance. Vibration impact is unlikely at the residential land uses along Virginia Avenue. Therefore, the MSF will not result in adverse vibration impacts at residential land uses.

In response to comments on the Draft EIS/EIR regarding vibration, additional vibration analysis was completed for the Dante Valve Company located in the City of Bellflower. At Dante Valve Company, peak existing vibration levels of between 75 and 80 VdB were measured in the manufacturing and testing areas. Vibration created at the track switch for the MSF access track could exceed 75 VdB if not mitigated.

4.7.3.5 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three USACE facilities: Los Angeles River just west of I-710, Rio Hondo channel just east of I-710, and San Gabriel River channel just west of I-605. All three are concrete lined.

Noise

The USACE facilities are not sensitive to noise. Therefore, no adverse effects will occur during operation of the LPA at the USACE facilities.

Vibration

The USACE facilities are not areas of frequent human use that is sensitive to operational vibration. Therefore, no adverse effects will occur during operation of the LPA at the USACE facilities.

4.7.4 Project Measures and Mitigation Measures

4.7.4.1 Project Measures

NOI PM-1 **Crossing Signal Bells.** Crossing signal bell noise will not exceed 75 dBA L_{max} sound exposure level at 10 feet at all protected at-grade crossings. Crossing signal bells at the locations identified in the following table, will be equipped with shrouds to direct bell noise away from residential sensitive receivers. This measure has been coordinated with CPUC but remains subject to its final approval.

NOI PM-1 Crossing Signal Bells Shroud Locations

Grade Crossing Locations	
Albany St	Century Blvd
Santa Fe Ave	Somerset Blvd
Rugby Ave	Clark Ave
Seville Ave	Alondra Blvd
Miles Ave	186th St
Bell Ave	Pioneer Blvd
Otis Ave	–

NOI PM-2 **Gate-Down-Bell-Stop Variance**. Metro will apply for a gate-down-bell-stop variance at the locations identified in the following table to reduce the duration of bell ringing and therefore reduce impacts at residential sensitive receivers. Crossing signal noise will not exceed 30 seconds in duration. This measure has been coordinated with CPUC but remains subject to its approval.

NOI PM-2 Gate-Down-Bell-Stop Locations

Grade Crossing Locations	
Albany St	Century Blvd
Santa Fe Ave	Somerset Blvd
Rugby Ave	Clark Ave
Seville Ave	Alondra Blvd
Miles Ave	186th St
Bell Ave	Pioneer Blvd
Otis Ave	–

4.7.4.2 Mitigation Measures

Noise

NOI-1 **Soundwalls.** Soundwalls will be placed at-grade or at the edge of aerial structures to reduce noise related to light rail transit vehicles at the identified sensitive receiver locations shown in the following table where moderate and severe impacts have been identified based on design completed to date. Height and length will be verified during final design with the objective to reduce noise from light rail trains to below the FTA moderate impact criteria. Where separate soundwalls are identified in close proximity and gaps are not required for access, they may be linked to form a continuous wall.

NOI-1 LRT Soundwall Locations

Civil Station	Location	Track Side	Placement	Height
653+04 to 657+60	Between 55th St and 57th St	Left	Aerial	4 Feet
698+30 to 702+25	Between Cottage St and Albany St	Right	At-grade	8 Feet
703+25 to 709+25	Between Albany St and Santa Fe Ave	Right	At-grade	8 Feet
711+00 to 719+50	Between Santa Fe Ave and Rugby Ave	Left	At-grade	8 Feet
710+15 to 720+90	Between Santa Fe Ave and Rugby Ave	Right	At-grade	8 Feet
721+50 to 724+50	Between Rugby Ave and Pacific Blvd	Right	At-grade	8 Feet
729+50 to 732+50	Between Rita Ave and Seville Ave	Right	At-grade	8 Feet
733+75 to 743+00	Between Seville Ave and Miles Ave	Left	At-grade	8 Feet
733+50 to 743+00	Between Seville Ave and Miles Ave	Right	At-grade	8 Feet

Civil Station	Location	Track Side	Placement	Height
744+00 to 762+80	Between Miles Ave and State St	Right	At-grade	8 Feet
745+75 to 762+00	Between west of Oak St and State St	Left	At-grade	8 Feet
764+00 to 769+75	Between State St. and Plaska Ave	Right	At-grade	12 feet
769+75 to 779+00	Between Plaska Ave and Hollenbeck St	Right	At-grade	10 feet
778+00 to 789+00	Between Hollenbeck St and Benedict Wy	Right	Aerial	6 Feet
803+00 to 813+69	Between Gage Ave and Bell Ave	Left	At-grade	8 feet
815+15 to 829+85	Between Bell Ave and Florence Ave	Left	At-grade	8 feet
840+00 to 868+75	Between Live Oak St and Otis Ave	Right	At-grade	8 feet
840+40 to 862+50	Between Live Oak St and Olive St	Left	At-grade	8 feet
870+50 to 878+00	Between Otis Ave and Santa Ana St	Right	At-grade	8 feet
872+50 to 877+50	Between Otis Ave and Santa Ana St	Left	At-grade	8 feet
881+20 to 893+50	Between Santa Ana St and Cecilia St	Left	At-grade	8 feet
957+50 to 962+50	Between Southern Ave and Duncan Wy	Right	At-grade	8 feet
962+50 to 973+00	Between Duncan Wy and center of Los Angeles River channel	Right	Aerial	6 feet
971+00 to 983+00	Between center of Los Angeles River channel and Frontage Rd	Left	Aerial	8 feet
1023+00 to 1029+75	Between Imperial Hwy and south of Garfield Ave	Left	Aerial	8 feet
1089+50 to 1096+00	Between I-105 Fwy and Happy St	Right	At-grade	14 feet
1096+00 to 1107+75	Between Happy St and Pacific Electric Right-of-Way (PEROW)	Right	At-grade	16 feet
1089+50 to 1096+50	Between I-105 Fwy and Pearle St	Left	At-grade	12 feet
1096+50 to 1104+00	Between Happy St and south of Howe St	Left	At-grade	16 feet
1104+00 to 1108+50	Between south of Howe St and PEROW	Left	At-grade	12 feet
1108+50 to 1120+50	Between Union Pacific Right-of-Way and Colorado Ave	Left	At-grade	14 feet
1096+50 to 1104+00	Between Happy St and south of Howe St	Left	Aerial	8 feet
1096+50 to 1104+00	Between Happy St and south of Howe St	Right	Aerial	8 feet
1104+00 to 1124+00	Between south of Howe St and Paramount Blvd	Left	Aerial	6 feet
1104+00 to 1108+00	Between south of Howe St and PEROW	Right	Aerial	6 feet
1124+00 to 1134+50	Between Paramount Blvd and approximately 350 feet east of 144th St	Left	Aerial	4 feet

Civil Station	Location	Track Side	Placement	Height
1141+00 to 1155+50	Between Paramount High School railroad pedestrian crossing and Downey Ave	Left	Aerial	8 feet
1140+00 to 1167+00	Between Paramount High School railroad pedestrian crossing and approximately 400 feet west Somerset Blvd	Right	Aerial	8 feet
1167+00 to 1171+00	Between approximately 400 feet west of Somerset Blvd and Somerset Blvd	Right	At-grade	8 feet
1173+00 to 1184+50	Between Somerset Blvd and Lakewood Blvd	Right	At-grade	12 feet
1186+50 to 1216+00	Between Lakewood Blvd and approximately Clark Ave	Right	At-grade	12 feet
1200+00 to 1215+70	Between approximately 50 feet west of Virginia Ave and Clark Ave	Left	At-grade	12 feet
1217+00 to 1222+00	Between Clark Ave and Alondra Blvd	Left	At-grade	10 feet
1224+00 to 1245+50	Between Alondra Blvd and approximately 200 feet west of Bellflower Blvd	Right	At-grade	8 feet
1226+50 to 1241+75	Between approximately 220 feet southeast of Alondra Blvd and Orchard Ave	Left	At-grade	8 feet
1248+50 to 1256+50	Between Bellflower Blvd and approximately 120 feet northwest of Civic Center Dr	Left	At-grade	12 feet
1250+00 to 1257+50	Between approximately 130 southeast of Bellflower Blvd and Civic Center Dr	Right	At-grade	12 feet
1257+50 to 1261+50	Between Civic Center Dr and approximately 200 feet southeast of Civic Center Dr	Right	At-grade	8 feet
1261+00 to 1265+50	Between approximately 500 feet northwest of Cornuta Ave and approximately 130 feet northwest of Cornuta Ave	Left	Aerial	8 Feet
1265+50 to 1275+50	Between approximately 130 feet northwest of Cornuta Ave and Woodruff Ave	Left	Aerial	4 feet
1261+00 to 1276+50	Between approximately 200 feet southeast of Civic Center Dr and Woodruff Ave	Right	Aerial	4 Feet
1275+50 to 1286+80	Between Woodruff Ave and Flora Vista St	Left	Aerial	8 feet

Civil Station	Location	Track Side	Placement	Height
1276+50 to 1286+50	Between Woodruff Ave and Flora Vista St	Right	Aerial	10 feet
1286+80 to 1300+00	Between Flora Vista St and approximately 300 feet southeast of Ripon Ave	Left	At-grade	10 feet
1286+50 to 1303+00	Between California Ave and SR-91 Fwy	Right	At-grade	10 feet
1309+00 to 1320+00	Between SR-91 Fwy and approximately 600 feet southeast of San Gabriel River channel	Right	At-grade/ Structure	10 feet
1351+00 to 1360+00	Between approximately 230 feet northwest of Rosewood Park and approximately 450 feet northwest of Harvest Ave	Left	At-grade	12 feet
1360+00 to 1372+00	Between approximately 450 feet northwest of Harvest Ave and Harvest Ave	Left	Aerial	12 feet
1372+00 to 1389+00	Between Harvest Ave and approximately 300 feet northwest of 186th St	Left	Aerial	10 Feet
1374+80 to 1389+00	Between Gridley Rd and approximately 300 feet northwest of 186th St	Right	Aerial	10 Feet
1389+00 to 1392+50	Between approximately 300 feet northwest of 186th St and 186th St	Left	At-grade	10 feet
1389+00 to 1392+00	Between approximately 300 feet northwest of 186th St and 186th St	Right	At-grade	10 feet
1393+75 to 1397+00	Between 186th St and 187th St	Left	At-grade	10 feet
1393+40 to 1397+00	Between 186th St and 187th St	Right	At-grade	10 feet
1397+00 to 1405+50	Between Alburtis Ave and approximately 200 feet northwest of Pioneer Blvd	Left	At-grade	8 feet
1397+00 to 1405+50	Between Alburtis Ave and approximately 200 feet northwest of Pioneer Blvd	Right	At-grade	8 feet
1409+50 to 1417+87	Between Pioneer Blvd and South St	Left	At-grade	8 feet
1409+20 to 1413+60	Between Pioneer Blvd and approximately 350 feet northwest of South St	Right	At-grade	8 feet

NOI-2 Low Impact Frogs. Low impact frogs (crossing point of two rails) will be installed at the identified locations shown in the following table to reduce crossover impact noise where necessary to reduce noise from light rail trains to below the FTA moderate impact criteria. Locations will be verified during final design with the objective to reduce noise from light rail trains to below the FTA moderate impact criteria.

NOI-2 Low Impact Frog Locations

Civil Station	Location	Noise Clusters	Vibration Clusters
657+14 to 662+34	Between 55th St and Slauson Ave	N40, N41, N42, N43, N44, N45, N46, N48, N49	V43
739+92 to 741+32	Between Templeton St and Miles Ave	N74, N75, N76, N77, N78, N79, N80, N81, N349	V63
807+41 to 808+82	Between Gage Ave and Nevada St	N108, N109, N110, N11, N112, N113	V81
873+15 to 874+56	Between Otis Ave and Santa Ana St	N162, N163, N164	V115 and V116
1004+06 to 1005+47	Between Lincoln Ave and Florence Ave	N187	V153, V154, and V155
1178+55 to 1179+96	Between Castana Ave and Olivia Ave	N227, N228, N229, N230	V172, V173, V174, and V175
1188+00	Maintenance and storage facility access track switch east of Lakewood Boulevard	none	V234
1228+76 to 1230+17	Between Alondra Blvd and Harvard St	N254, N255	V192, V193, and V194
1289+49 to 1291+03 and 1294+09 to 1295+37	Between Flora Vista St and Park St	N285, N289, N290, N291, N293, N294, N295, N296, N360	V195, V196, V197, and V198
1394+72 to 1399+92	Between 186th St and 187th St	N328, N330, N331, N332, N334, N336, N337, N338, N339, N340, N341, N342, N343	V217, V218, V221, V222, and V223
1409+62 to 1414+81	Between Pioneer Blvd and South Ave	N344, N345, N346	V230, V231 and V232

NOI-3 Wheel Squeal Noise Monitoring. Metro will conduct wheel squeal noise monitoring prior to the start of revenue operations to determine if excessive wheel squeal is occurring at the curves identified in the following table. If wheel squeal occurs, Metro will use wayside rail lubrication to lubricate rail surfaces as necessary with the objectives of minimizing wheel squeal and reducing noise from light rail trains to below the FTA moderate impact criteria.

NOI-3 Wheel Squeal Wayside Friction Applicator Locations

Civil Station	Curve
670+00	Curve from Randolph St to Long Beach Ave
788+00	Curve from San Pedro Subdivision Right-of-Way to Randolph St
1109+00	Curve from Pacific Electric Right-of-Way to San Pedro Subdivision Right-of-Way following Arthur Ave

NOI-4 TPSS Noise Reduction. At the traction power substation (TPSS) locations identified in the following table, Metro will implement measures to reduce TPSS noise below the performance criteria shown in the table below. FTA impact criteria shown in the table are based on existing noise levels per FTA guidance. Measures to reduce TPSS noise may include, but are not limited to:

- Orient cooling fans and heating, ventilation, and air conditioning (HVAC) equipment away from sensitive receivers
- Use quieter cooling fans or HVAC equipment
- Provide a surrounding enclosure around the TPSS unit
- Install baffles on the exterior of the cooling fan and HVAC equipment
- Provide sound insulation of TPSS unit enclosure or mount sound isolation materials to minimize transformer hum

NOI-4 TPSS Locations

Civil Station	TPSS	Location	FTA Impact Criteria (dBA, L_{dn})
737+75	15(e)	East of Stafford Ave and north of Randolph St within private property	59
1110+50	7(e2)	South of Rose Street and just west of Arthur Ave within Metro-owned property	59
1195+50	5(e)	North of Hegel St and south of the Bellflower Bike Trail within private property	54

Notes: dBA = A-weighted decibel; FTA = Federal Transit Administration; L_{dn} = day-night noise level; TPSS = traction power substation

NOI-5 Freight Track Relocation Soundwalls. Soundwalls will be placed at the edge of the right-of-way at the locations identified in the following table to reduce freight and light rail transit noise related to the freight track relocation. Height and length will be verified during final design with the objective to reduce noise from light rail trains to below the FTA moderate impact criteria.

NOI-5 Freight Track Relocation Soundwalls

Civil Station	Location	Track Side	Placement	Height
764+00 to 769+75	Between State St. and Plaska Ave	Right	At-grade	12 feet
769+75 to 779+00	Between Plaska Ave and Hollenbeck St	Right	At-grade	10 feet
1089+50 to 1096+00	Between I-105 Fwy and Happy St	Right	At-grade	14 feet
1096+00 to 1107+75	Between Happy St and Pacific Electric Right-of-Way	Right	At-grade	16 feet
1089+50 to 1096+50	Between I-105 Fwy and Pearle St	Left	At-grade	12 feet
1096+50 to 1104+00	Between Happy St and south of Howe St	Left	At-grade	16 feet
1104+00 to 1108+50	Between south of Howe St and Pacific Electric Right-of-Way	Left	At-grade	12 feet
1108+50 to 1120+50	Between Union Pacific Right-of-Way and Colorado Ave	Left	At-grade	14 feet

Mitigated LRT Noise: As shown in Table 4.7.5, after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), and NOI-3 (Wheel Squeal Noise Monitoring), 31 moderate and 4 severe impacts will remain. The LPA will have 27 clusters that will be reduced from a severe impact to a moderate impact, 92 clusters that will be reduced from a moderate impact to no impact, and 87 clusters that will be reduced from severe to no impact for a total of 206 benefited receptors. Mitigated impacts and impacts remaining after mitigation are shown in Table 4.7.6 and Figure 4.7-5 through Figure 4.7-10. Noise levels at clusters that are not included in Table 4.7.6 would be less than the impact criteria without mitigation. Some impacts are not mitigable due the combination of mitigation measures not being able to provide adequate attenuation due to elevated project noise levels. Available mitigation methods, including soundwalls, methods to reduce special track work noise, and wheel squeal have been applied to reduce LRT noise to the greatest extent feasible. An explanation of areas where mitigation is not feasible or reasonable is included in Table 4.7.8. Therefore, under NEPA, adverse effects for the LPA will remain related to LRT noise. Please note that the numbering of the noise clusters does not correspond to the vibration clusters because different screening distances were used to identify clusters that were included in these assessments.

Table 4.7.5. Summary of Mitigated LRT Noise Impacts

Scenario	Benefited Receptors[1]	Impacts Remaining		
		Moderate	Severe	Total
LPA Without Design Option	206	31	4	35
LPA With Design Option	206	33	2	35

Source: Metro 2024j
Notes: [1] Benefited receptors are clusters that have received a reduction in impact severity as a result of implementation of mitigation. This includes clusters that have gone from an impact of severe to moderate, severe to no impact, and moderate to no impact.
LRT = light rail transit

Mitigated LRT Noise Design Option: The design option would close the 186th Street at-grade crossing and open the 187th Street at-grade crossing. The design option would permit a soundwall to be constructed with no gap until reaching 187th Street, which would improve the effectiveness of the wall for the clusters near 186th Street. The design option would also remove the crossing signal noise from 186th Street and add crossing signal noise to 187th Street. Mitigated impacts and impacts remaining after mitigation are shown in Table 4.7.7. Impact levels would change from the LPA without the design option as follows: The impact at Cluster 334 would be reduced from severe to no impact; the impact at Cluster 328 would be reduced from severe to moderate impact; and the impact at Cluster 342 would change from no impact to moderate. As shown in Table 4.7.5, under the LPA with the design option, 33 moderate impacts and 2 severe impacts will remain at Category 2 clusters after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), and NOI-3 (Wheel Squeal Noise Monitoring). No impacts will remain at Category 3 clusters. Therefore, impacts will remain adverse even after implementation of mitigation.

Mitigated Ancillary Facility Noise: Implementation of Mitigation Measure NOI-4 (TPSS Noise Reduction) will reduce TPSS noise levels. However, at this stage in design, various TPSS noise-reduction methods may or may not be completely effective due to design constraints for individual TPSS locations, which will be determined as part of final design. Therefore, under NEPA, adverse effects for the LPA will remain related to ancillary facility noise.

Table 4.7.6. Mitigated LRT Noise

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N43	2	SFR	Yes	4	NOI-1, NOI-2	70.5	68	52	65	70	No
N50	2	SFR/MFR	No	0	NOI-3	65.4	68	58	61	66	No
N54	2	SFR	Yes	8	NOI-1	68.0	65	61	63	68	No
N56	2	SFR	Yes	8	NOI-1	68.0	65	60	63	68	No
N65	2	SFR/MFR	Yes	8	NOI-1	68.0	64	56	63	68	No
N66	2	SFR/MFR	Yes	8	NOI-1	68.0	63	60	63	68	No
N71	2	MFR	Yes	8	NOI-1	61.8	60	52	59	64	No
N73	2	MFR	Yes	8	NOI-1	61.8	65	65	59	64	Severe
N74	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	61	48	59	64	No
N75	2	MFR	Yes	8	NOI-1, NOI-2	61.8	60	47	59	64	No
N76	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	67	54	59	64	No
N77	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	63	50	59	64	No
N78	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	63	50	59	64	No
N79	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	67	55	59	64	No
N80	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.8	68	59	59	64	Moderate
N81	2	SFR	Yes	8	NOI-1, NOI-2	61.8	61	48	59	64	No
N82	2	SFR/MFR	Yes	8	NOI-1	61.8	59	51	59	64	No
N85	2	SFR/MFR	Yes	8	NOI-1	61.8	61	53	59	64	No
N86	2	SFR/MFR	Yes	8	NOI-1	61.8	62	54	59	64	No
N88	2	SFR/MFR	Yes	8	NOI-1	61.8	63	55	59	64	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N89	2	SFR/MFR	Yes	8	NOI-1	63.1	60	52	60	65	No
N93	2	SFR	Yes	8	NOI-1	63.1	60	52	60	65	No
N96	2	SFR	Yes	8	NOI-1	63.1	60	52	60	65	No
N102	2	SFR	Yes	10	NOI-1	63.1	60	50	60	65	No
N104	2	SFR	Yes	10	NOI-1	63.1	60	50	60	65	No
N105	2	SFR/MFR	Yes	10	NOI-1	63.1	60	49	60	65	No
N108	2	SFR	Yes	8	NOI-1, NOI-2	66.8	74	59	62	67	No
N111	2	SFR	No	0	NOI-2	66.8	64	59	62	67	No
N113	2	SFR/MFR	Yes	8	NOI-1, NOI-2	66.8	73	59	62	67	No
N114	2	SFR	Yes	8	NOI-1	66.8	62	56	62	67	No
N116	2	SFR/MFR	Yes	8	NOI-1	64.0	68	62	60	66	Moderate
N118	2	SFR	Yes	8	NOI-1	64.0	65	53	60	66	No
N119	2	SFR	Yes	8	NOI-1	64.0	65	53	60	66	No
N137	2	SFR	Yes	8	NOI-1	63.1	62	54	60	65	No
N141	2	SFR	Yes	8	NOI-1	63.1	61	56	60	65	No
N144	2	SFR	Yes	8	NOI-1	63.1	63	55	60	65	No
N146	2	SFR	Yes	8	NOI-1	63.1	62	56	60	65	No
N149	2	SFR	Yes	8	NOI-1	63.1	63	57	60	65	No
N151	2	SFR	Yes	8	NOI-1	63.1	60	55	60	65	No
N153	2	SFR	Yes	8	NOI-1	63.1	65	57	60	65	No
N155	2	SFR	Yes	8	NOI-1	63.1	60	54	60	65	No
N156	2	SFR	Yes	8	NOI-1	63.1	64	57	60	65	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N158	2	SFR	Yes	8	NOI-1	61.1	64	56	58	64	No
N159	2	SFR	Yes	8	NOI-1	61.1	60	54	58	64	No
N160	2	SFR	Yes	8	NOI-1	61.1	62	57	58	64	No
N161	2	SFR	Yes	8	NOI-1	61.1	63	62	58	64	Moderate
N162	2	SFR	Yes	8	NOI-1, NOI-2	61.1	66	55	58	64	No
N163	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.1	69	61	58	64	Moderate
N164	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.1	66	53	58	64	No
N165	2	MFR	Yes	8	NOI-1	61.1	64	59	58	64	Moderate
N166	2	MFR	Yes	8	NOI-1	61.1	65	56	58	64	No
N168	2	Mobile Homes	Yes	8	NOI-1	61.1	65	53	58	64	No
N169	2	Motel	No	0	NR[2]	68.0	63	63	63	68	Moderate
N170	2	SFR	Yes	8	NOI-1	58.7	59	54	57	63	No
N171	2	SFR	Yes	8	NOI-1	58.7	59	51	57	63	No
N172	2	SFR	Yes	8	NOI-1	58.7	62	53	57	63	No
N173	2	SFR	Yes	6	NOI-1	58.7	60	53	57	63	No
N174	2	SFR	Yes	6	NOI-1	58.7	62	55	57	63	No
N175	2	SFR	Yes	6	NOI-1	58.7	60	53	57	63	No
N176	2	MFR	Yes	6	NOI-1	58.7	62	55	57	63	No
N177	2	Thunderbird Villa Mobile Home Estates	Yes	8	NOI-1	57.4	66	57	56	62	Moderate
N178	2	Thunderbird Villa Mobile Home Estates	Yes	8	NOI-1	57.4	61	53	56	62	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N179	2	Thunderbird Villa Mobile Home Estates	Yes	8	NOI-1	57.4	64	55	56	62	No
N180	2	Thunderbird Villa Mobile Home Estates	Yes	8	NOI-1	57.4	67	58	56	62	Moderate
N191	2	SFR	Yes	14	NOI-1	64.0	60	48	60	66	No
N192	2	SFR	Yes	14	NOI-1	64.0	64	52	60	66	No
N193	2	SFR	Yes	14	NOI-1	64.0	66	54	60	66	No
N197	2	SFR	Yes	14	NOI-1	64.0	66	54	60	66	No
N199	2	SFR	Yes	8	NOI-1	54.1	56	48	55	61	No
N200	2	SFR	Yes	8	NOI-1	62.4	67	56	59	65	No
N201	2	SFR	Yes	8	NOI-1	58.5	61	52	57	63	No
N202	2	SFR	Yes	8	NOI-1	54.8	57	49	55	61	No
N203	2	SFR	Yes	6	NOI-1, NOI-3	56.0	66	48	56	62	No
N204	2	SFR	Yes	6	NOI-1, NOI-3	60.1	70	50	58	63	No
N205	2	SFR	Yes	6	NOI-1, NOI-3	54.0	64	47	55	61	No
N206	2	SFR	Yes	6	NOI-1, NOI-3	60.0	77	55	58	63	No
N207	2	SFR	Yes	6	NOI-1, NOI-3	62.4	70	50	59	65	No
N208	2	SFR	Yes	6	NOI-1, NOI-3	55.5	66	48	56	61	No
N209	2	SFR	Yes	6	NOI-1, NOI-3	54.4	66	49	55	61	No
N210	2	SFR	Yes	6	NOI-1, NOI-3	60.4	71	52	58	64	No
N211	2	SFR	Yes	6	NOI-1	54.9	56	49	55	61	No
N212	2	SFR	Yes	6	NOI-1	56.2	59	51	56	62	No
N213	2	SFR	Yes	6	NOI-1	60.8	63	53	58	64	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N215	2	SFR	Yes	4	NOI-1	58.0	59	53	57	62	No
N216	2	SFR	Yes	4	NOI-1	58.0	61	54	57	62	No
N217	2	SFR	Yes	4	NOI-1	58.0	59	54	57	62	No
N219	2	SFR	Yes	8	NOI-1	58.0	63	55	57	62	No
N220	2	SFR	Yes	8	NOI-1	58.0	62	53	57	62	No
N221	3	Paramount High School	Yes	8	NOI-1	53.7	61	51	60	66	No
N222	2	SFR	Yes	8	NOI-1	66.4	62	54	62	67	No
N223	2	SFR	Yes	8	NOI-1	56.0	62	55	56	62	No
N224	2	SFR	Yes	8	NOI-1	66.4	62	55	62	67	No
N225	2	SFR	Yes	12	NOI-1	51.7	60	52	54	60	No
N226	2	SFR	Yes	12	NOI-1	62.7	65	57	59	65	No
N227	2	SFR	Yes	12	NOI-1, NOI-2	66.4	78	61	62	67	No
N228	2	SFR	Yes	12	NOI-1, NOI-2	51.7	65	50	54	60	No
N229	2	SFR	Yes	12	NOI-1, NOI-2	51.7	68	53	54	60	No
N230	2	SFR	Yes	12	NOI-1, NOI-2	51.7	74	58	54	60	Moderate
N231	2	SFR	Yes	12	NOI-1	56.0	69	59	56	62	Moderate
N234	2	Mobile Homes	Yes	12	NOI-1	52.0	60	50	54	60	No
N235	2	Mobile Homes	Yes	12	NOI-1	52.0	66	55	54	60	Moderate
N236	2	SFR	Yes	12	NOI-1	52.0	63	53	54	60	No
N237	2	SFR	Yes	12	NOI-1	52.0	61	51	54	60	No
N238	2	SFR	Yes	12	NOI-1	52.0	59	49	54	60	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N239	2	SFR	Yes	12	NOI-1	48.1	61	51	53	59	No
N240	2	SFR	Yes	12	NOI-1	48.1	63	52	53	59	No
N241	2	SFR	Yes	12	NOI-1	52.0	61	51	54	60	No
N242	2	SFR	Yes	12	NOI-1	52.0	60	50	54	60	No
N243	2	SFR	Yes	12	NOI-1	52.0	66	55	54	60	Moderate
N245	2	MFR	Yes	12	NOI-1	51.2	65	55	54	60	Moderate
N246	2	MFR	Yes	12	NOI-1	62.4	68	65	59	65	Severe
N247	2	SFR	Yes	12	NOI-1	62.4	66	58	59	65	No
N248	2	MFR	Yes	12	NOI-1	62.4	61	51	59	65	No
N249	2	SFR	Yes	10	NOI-1	59.5	64	58	58	63	Moderate
N251	2	SFR	Yes	10	NOI-1	59.5	67	57	58	63	No
N253	2	SFR	Yes	8	NOI-1	66.0	65	62	61	67	Moderate
N254	2	SFR	Yes	8	NOI-1, NOI-2	59.5	67	54	58	63	No
N255	2	Aztec Mobile Home	Yes	8	NOI-1, NOI-2	59.5	69	55	58	63	No
N259	2	SFR	Yes	8	NOI-1	59.5	59	51	58	63	No
N267	2	MFR	Yes	12	NOI-1	56.0	63	59	56	62	Moderate
N268	2	MFR	Yes	12	NOI-1	56.0	65	57	56	62	Moderate
N270	2	MFR	Yes	8	NOI-1	56.0	62	54	56	62	No
N271	2	MFR	Yes	8	NOI-1	56.0	62	55	56	62	No
N274	2	SFR	Yes	8	NOI-1	56.0	62	53	56	62	No
N275	2	MFR	Yes	4	NOI-1	56.0	59	55	56	62	No
N276	2	MFR	Yes	4	NOI-1	69.4	64	59	64	69	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N277	2	SFR	Yes	4	NOI-1	69.4	66	60	64	69	No
N278	2	SFR/MFR	Yes	4	NOI-1	69.4	70	62	64	69	No
N281	2	MFR	Yes	4	NOI-1	69.4	64	59	64	69	No
N282	2	MFR	Yes	4	NOI-1	69.4	64	59	64	69	No
N283	2	SFR	Yes	4	NOI-1	57.7	63	56	57	62	No
N284	2	SFR	Yes	4	NOI-1	57.7	61	56	57	62	No
N285	2	SFR	Yes	8	NOI-1, NOI-2	57.7	66	52	57	62	No
N287	2	SFR	Yes	10	NOI-1	57.7	66	55	57	62	No
N288	2	SFR	Yes	10	NOI-1	57.7	60	50	57	62	No
N289	2	SFR	Yes	10	NOI-1, NOI-2	57.7	65	51	57	62	No
N290	2	SFR	Yes	10	NOI-1, NOI-2	57.7	71	56	57	62	No
N291	2	SFR	Yes	10	NOI-1, NOI-2	57.7	68	54	57	62	No
N292	2	SFR	Yes	10	NOI-1	57.7	57	48	57	62	No
N293	2	SFR	Yes	10	NOI-1, NOI-2	57.7	65	51	57	62	No
N294	2	SFR	Yes	10	NOI-1, NOI-2	57.7	70	55	57	62	No
N295	2	SFR	Yes	10	NOI-1, NOI-2	57.7	67	53	57	62	No
N296	2	SFR	Yes	10	NOI-1, NOI-2	57.7	62	48	57	62	No
N297	2	SFR	Yes	10	NOI-1	57.7	66	56	57	62	No
N298	2	SFR	Yes	10	NOI-1	57.7	64	54	57	62	No
N299	2	SFR	Yes	10	NOI-1	57.7	64	54	57	62	No
N300	2	SFR	Yes	10	NOI-1	57.7	66	56	57	62	No
N301	2	SFR	Yes	10	NOI-1	57.7	69	58	57	62	Moderate

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N306	2	SFR	Yes	12	NOI-1	51.2	60	50	54	60	No
N307	2	SFR	Yes	12	NOI-1	51.2	65	54	54	60	Moderate
N308	2	SFR	Yes	12	NOI-1	51.2	64	53	54	60	No
N309	2	SFR	Yes	12	NOI-1	51.2	69	58	54	60	Moderate
N310	2	SFR	Yes	12	NOI-1	51.2	70	58	54	60	Moderate
N311	2	SFR	Yes	10	NOI-1	51.2	66	56	54	60	Moderate
N312	2	SFR	Yes	10	NOI-1	53.1	70	58	54	60	Moderate
N313	2	SFR	Yes	10	NOI-1	65.8	65	55	61	67	No
N314	2	SFR	Yes	10	NOI-1	65.8	69	58	61	67	No
N315	2	SFR	Yes	10	NOI-1	65.8	70	58	61	67	No
N316	2	SFR	Yes	10	NOI-1	51.2	57	47	54	60	No
N317	2	SFR	Yes	10	NOI-1	51.2	58	48	54	60	No
N318	2	SFR	Yes	10	NOI-1	51.2	61	51	54	60	No
N319	2	SFR	Yes	10	NOI-1	51.2	65	55	54	60	Moderate
N320	2	SFR	Yes	10	NOI-1	51.2	57	47	54	60	No
N321	2	SFR	Yes	10	NOI-1	48.0	57	49	53	59	No
N322	2	SFR	Yes	10	NOI-1	48.0	65	57	53	59	Moderate
N323	2	SFR	Yes	10	NOI-1	48.0	65	54	53	59	Moderate
N324	2	SFR	Yes	10	NOI-1	48.0	59	49	53	59	No
N325	2	SFR	Yes	10	NOI-1	48.0	59	50	53	59	No
N326	2	SFR	Yes	10	NOI-1	48.0	64	54	53	59	Moderate
N327	2	MFR	Yes	10	NOI-1	48.0	58	49	53	59	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N328	2	SFR/MFR	Yes	10	NOI-1, NOI-2	48.0	70	60	53	59	Severe
N329	2	SFR	Yes	10	NOI-1	48.0	55	46	53	59	No
N330	2	SFR	Yes	8	NOI-1, NOI-2	48.0	56	43	53	59	No
N331	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48.0	64	50	53	59	No
N332	3	Artesia Historical Museum	Yes	8	NOI-1, NOI-2	50.0	59	46	58	65	No
N333	2	SFR	Yes	8	NOI-1	48.0	54	46	53	59	No
N334	2	SFR	Yes	10	NOI-1, NOI-2	48.0	70	60	53	59	Severe
N335	2	SFR/MFR	Yes	10	NOI-1	48.0	56	48	53	59	No
N336	2	SFR	Yes	8	NOI-1, NOI-2	48.0	61	48	53	59	No
N337	3	Wan Yuen Temple	Yes	8	NOI-1, NOI-2	50.0	59	46	58	65	No
N338	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48.0	59	46	53	59	No
N339	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48.0	61	48	53	59	No
N340	2	SFR	Yes	8	NOI-1, NOI-2	48.0	58	45	53	59	No
N341	2	SFR	Yes	8	NOI-1, NOI-2	48.0	58	48	53	59	No
N342	2	SFR	Yes	8	NOI-1, NOI-2	48.0	59	49	53	59	No
N343	2	SFR	Yes	8	NOI-1, NOI-2	48.0	55	42	53	59	No
N344	2	SFR	Yes	8	NOI-1, NOI-2	52.0	64	50	54	60	No
N346	2	SFR	Yes	8	NOI-1, NOI-2	52.0	61	49	54	60	No
N347	2	SFR	Yes	8	NOI-1	52.0	56	50	54	60	No
N349	2	SFR	Yes	8	NOI-1, NOI-2	61.8	69	56	59	64	No
N350	2	SFR/MFR	Yes	8	NOI-1	61.8	65	61	59	64	Moderate

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N351	2	MFR	Yes	8	NOI-1	61.8	63	61	59	64	Moderate
N352	2	MFR	Yes	8	NOI-1	60.7	67	55	58	64	No
N353	2	SFR	Yes	8	NOI-1	57.7	63	54	57	62	No
N354	2	SFR	Yes	8	NOI-1	57.7	63	54	57	62	No
N355	2	SFR	Yes	8	NOI-1	57.7	61	53	57	62	No
N356	2	SFR	Yes	8	NOI-1	57.7	63	54	57	62	No
N357	2	SFR	Yes	10	NOI-1	57.7	67	56	57	62	No
N358	2	SFR	Yes	10	NOI-1	57.7	63	53	57	62	No
N359	2	SFR	Yes	10	NOI-1	57.7	66	56	57	62	No
N360	2	SFR	Yes	10	NOI-1, NOI-2	57.7	72	57	57	62	Moderate
N361	2	Thunderbird Villa Mobile Home Estates	Yes	8	NOI-1	57.4	69	58	56	62	Moderate
N362	2	SFR	Yes	6	NOI-1	63.1	60	51	60	65	No
N363	2	SFR	Yes	6	NOI-1	63.1	64	54	60	65	No
N366	2	SFR	Yes	6	NOI-1	63.1	61	51	60	65	No
N367	2	MFR	Yes	8	NOI-1	63.1	60	58	60	65	No
N368	2	SFR	No	0	NOI-3	56.8	65	55	56	62	No
N369	2	MFR	Yes	8	NOI-1	64.0	66	58	60	66	No
N370	2	MFR	Yes	8	NOI-1	64.0	61	53	60	66	No
N371	2	MFR	Yes	8	NOI-1	64.0	66	58	60	66	No
N372	2	MFR	Yes	8	NOI-1	64.0	66	59	60	66	No
N373	2	MFR	Yes	8	NOI-1	64.0	62	54	60	66	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L_{dn}) (Cat. 3 dBA, L_{eq})					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N375	2	MFR	Yes	8	NOI-1	64.0	64	56	60	66	No
N376	2	MFR	Yes	8	NOI-1	64.0	63	55	60	66	No

Source: Metro 2024j

Notes: [1] Category 2: Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance. Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

[2] See Table 4.7.8 for explanation.

Cat = category; dBA = A-weighted decibel; Ldn = day-night noise level; Leq = equivalent sound level; LRT = light rail transit; NR = Not Reasonable MFR = multifamily residential; SFR = single-family residential

Table 4.7.7. Mitigated LRT Noise – Design Option

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level dBA (Cat. 2 , Ldn) (Cat. 3, Leq)					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N322	2	SFR	Yes	10	NOI-1	48	65	55	53	59	Moderate
N323	2	SFR	Yes	10	NOI-1	48	65	54	53	59	Moderate
N324	2	SFR	Yes	10	NOI-1	48	59	49	53	59	No
N325	2	SFR	Yes	10	NOI-1	48	59	50	53	59	No
N326	2	SFR	Yes	10	NOI-1	48	64	54	53	59	Moderate
N327	2	MFR	Yes	8	NOI-1	48	55	47	53	59	No
N328	2	SFR/MFR	Yes	10	NOI-1, NOI-2	48	67	53	53	59	Moderate
N329	2	SFR	Yes	8	NOI-1	48	55	45	53	59	No
N330	2	SFR	Yes	8	NOI-1, NOI-2	48	56	41	53	59	No
N331	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48	64	48	53	59	No
N332	3	Artesia Historical Museum	Yes	8	NOI-1, NOI-2	48	63	50	53	59	No
N333	2	SFR	Yes	8	NOI-1	48	54	44	53	59	No
N334	2	SFR	Yes	10	NOI-1, NOI-2	48	67	50	53	59	No
N335	2	SFR/MFR	Yes	8	NOI-1	48	53	44	53	59	No
N336	2	SFR	Yes	8	NOI-1, NOI-2	48	61	46	53	59	No
N337	3	Wan Yuen Temple	Yes	8	NOI-1, NOI-2	48	59	43	53	59	No
N338	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48	59	44	53	59	No
N339	2	SFR/MFR	Yes	8	NOI-1, NOI-2	48	61	45	53	59	No
N340	2	SFR	No	0	NOI-2	48	58	43	53	59	No
N341	2	SFR	Yes	8	NOI-1, NOI-2	48	61	49	53	59	No

Cluster No.	Cat.[1]	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level dBA (Cat. 2 , Ldn) (Cat. 3, Leq)					Impact After Mitigation
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N342	2	SFR	No	0	NOI-2	48	62	56	53	59	Moderate
N343	2	SFR	No	0	NOI-2	48	55	50	53	59	No
N344	2	SFR	Yes	8	NOI-1, NOI-2	52	64	50	54	60	No

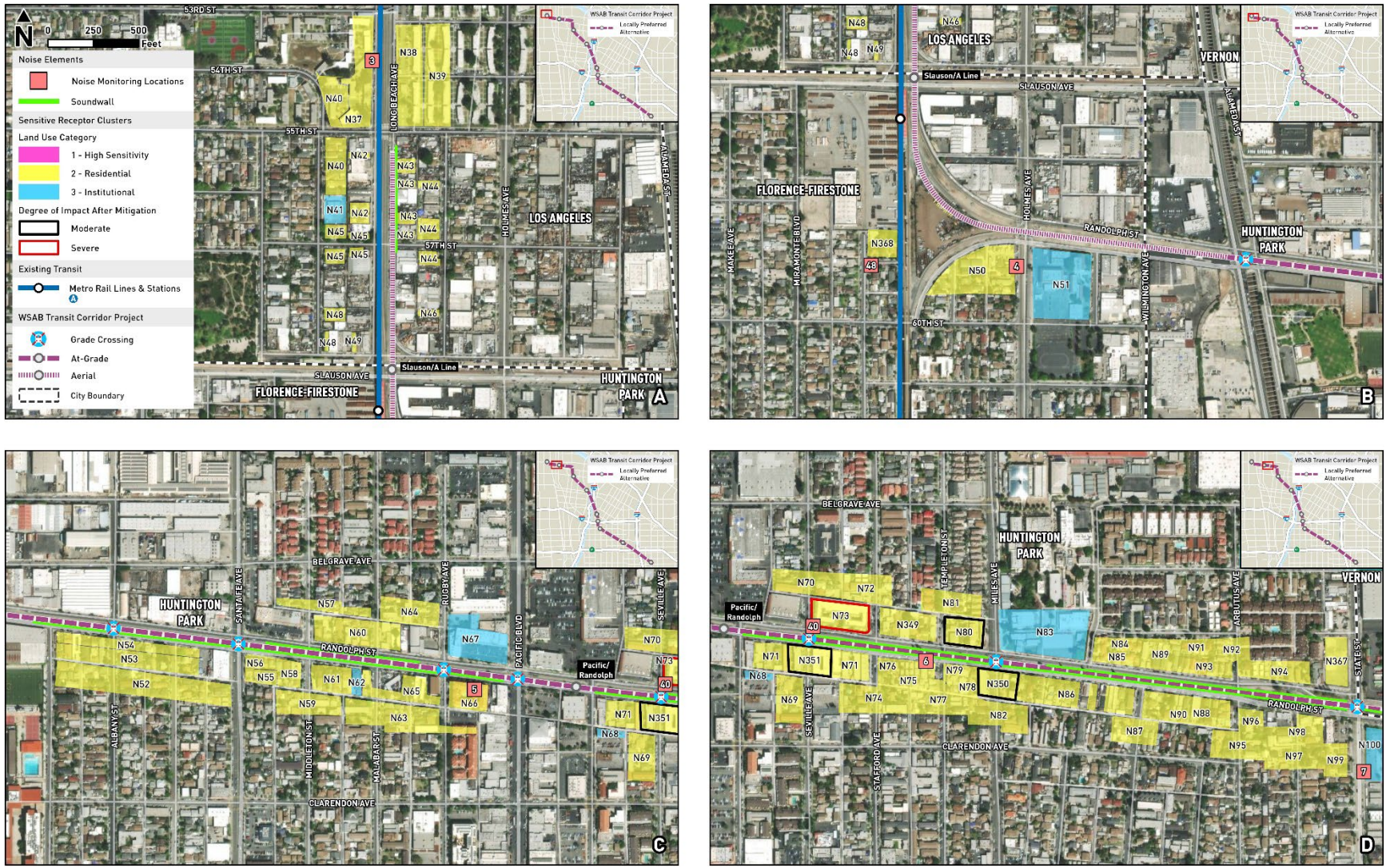
Source: Metro 2024j
Notes: [1] Category 2: Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance. Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.
Cat = category; dBA = A-weighted decibel; Ldn = day-night noise level; Leq = equivalent sound level; LRT = light rail transit; MFR = multifamily residential; SFR = single-family residential

Table 4.7.8. Sensitive Land Uses Where Mitigation is Not Feasible or Reasonable

Cluster No.	Cat.[1]	Land Use	Mitigation Measures	Explanation of Feasibility/Reasonableness of Mitigation
N169	2	Motel	None	No other receptor within 1,000 feet of receptor. FTA moderate impact criteria exceeded only by 0.2 dBA, resulting in a moderate impact. Not reasonable to implement soundwall for isolated receptor.

Source: Metro 2024j
Notes: [1] Category 2: Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
Cat. = category; dBA = A-weighted decibel; FTA = Federal Transit Administration

Figure 4.7-5. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (Southeast Los Angeles to City of Huntington Park)

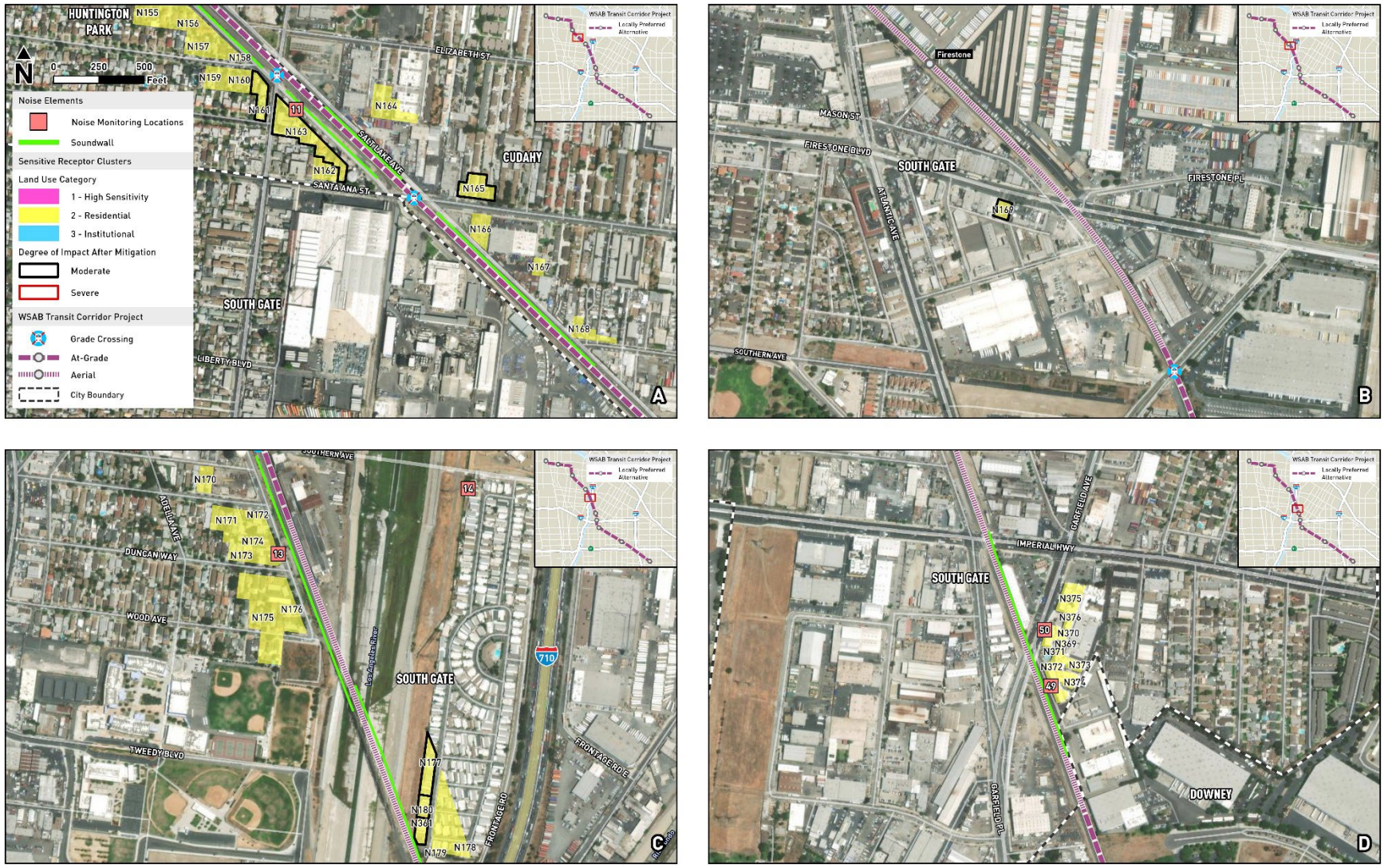


Source: Metro 2024j

Figure 4.7-6. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Huntington Park to City of Cudahy)

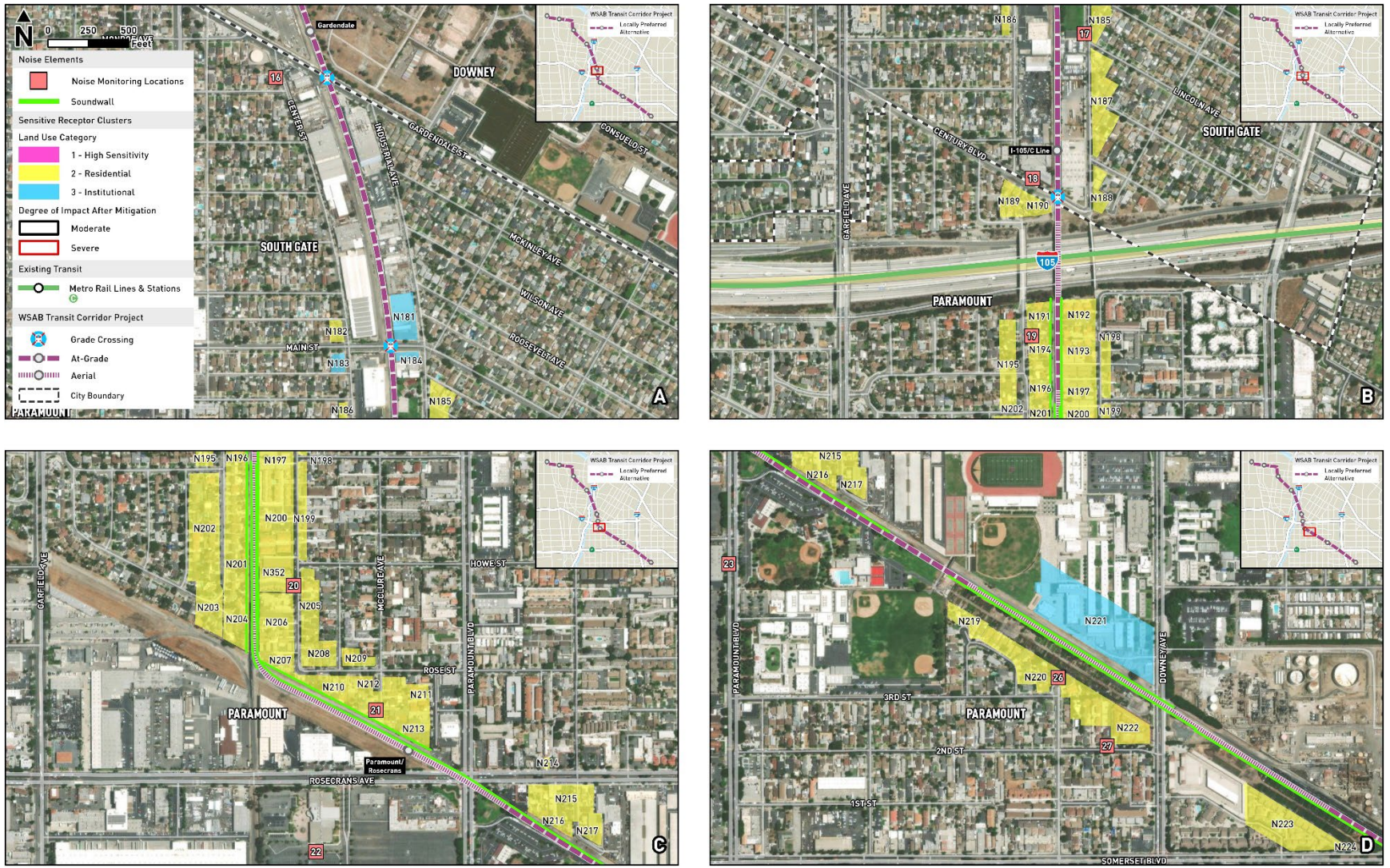
Source: Metro 2024j

Figure 4.7-7. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Cudahy to City of South Gate)



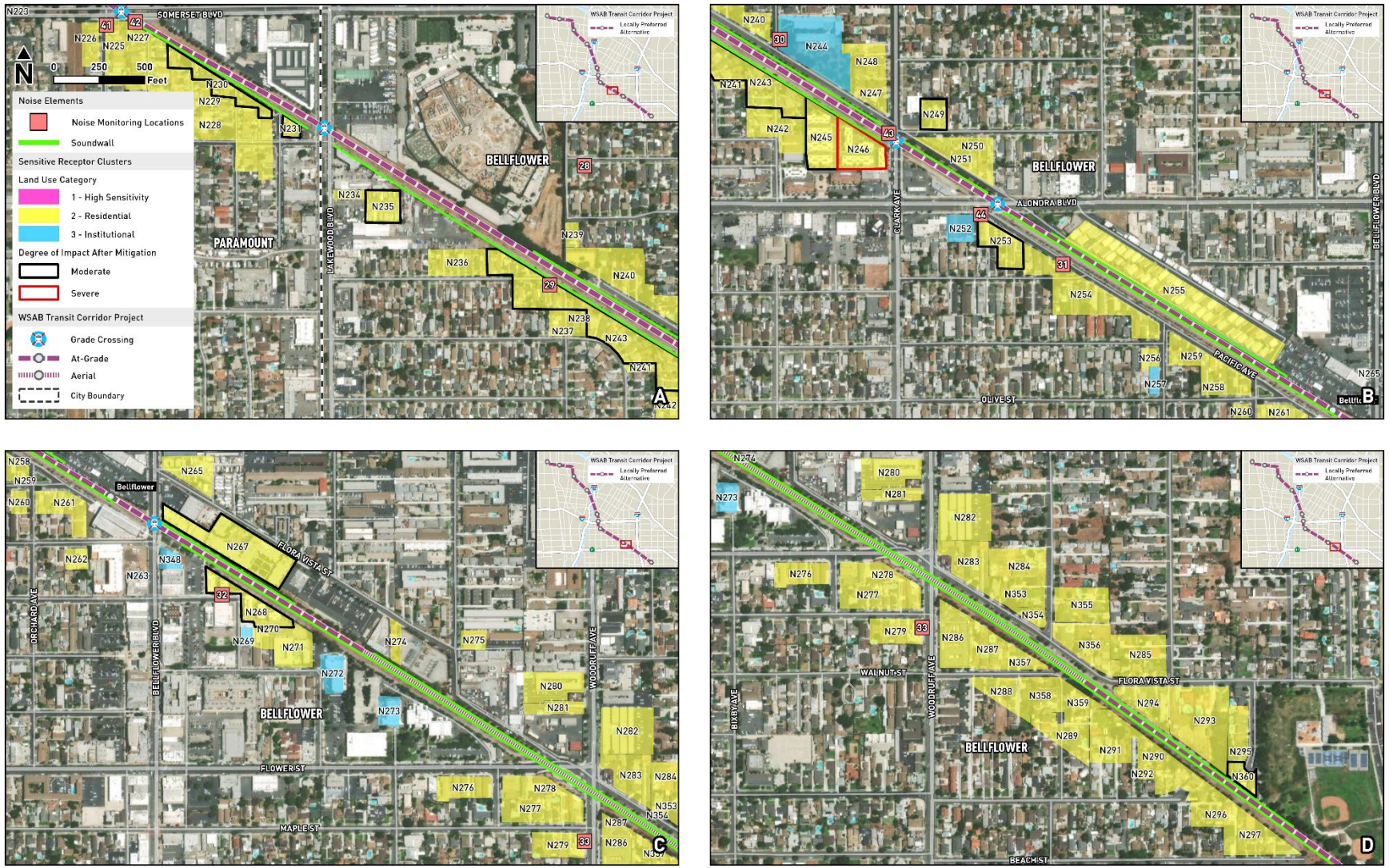
Source: Metro 2024j

Figure 4.7-8. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of South Gate to City of Paramount)



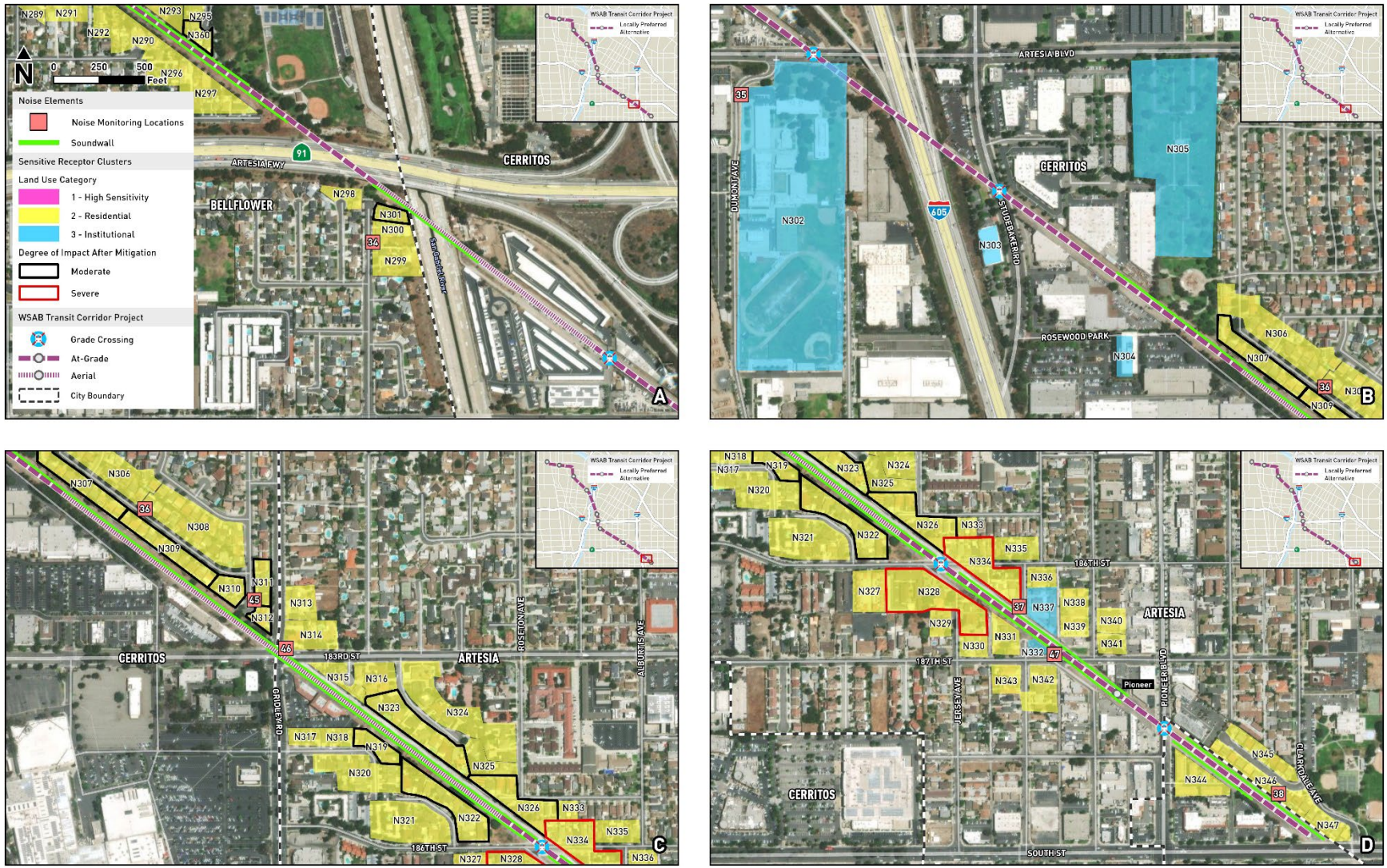
Source: Metro 2024j

Figure 4.7-9. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Paramount to City of Bellflower)



Source: Metro 2024j

Figure 4.7-10. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Bellflower to City of Cerritos and City of Artesia)



Source: Metro 2024j

Mitigated Freight Noise: In many cases, mitigation of the LRT will reduce impacts related to freight track relocation. The combination of the LRT noise with freight noise is the primary driver for noise impacts in the instances that freight and LRT would pass by at the same time. Mitigation Measures NOI-1 through NOI-3, which include soundwalls, low impact frogs, and wheel squeal noise monitoring, and Project Measures NOI PM-1 crossing signal bells and NOI PM-2 gate-down-bell-stop variance will apply to LRT noise, which will reduce overall noise impacts related to freight track relocation. Soundwalls necessary to mitigate noise related to freight track relocation have been proposed under Mitigation Measure NOI-5 (Freight Track Relocation Soundwalls). Mitigated impacts and impacts remaining after mitigation are shown in Figure 4.7-11 and Figure 4.7-12.

Mitigated noise levels for the LPA are shown in Table 4.7.9. Thirty-one clusters will be reduced from a moderate impact to no impact; 14 clusters will be reduced from severe to no impact; and 7 clusters will be reduced from severe to moderate, for a total of 52 benefited clusters. Thirty-one moderate impacts and one severe impact will remain at Category 2 clusters after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), and NOI-5 (Freight Track Relocation Soundwalls). Seven moderate impacts will remain at Category 3 clusters. Category 3 clusters along Randolph Street are unlikely to regularly experience impacts due to a combination of freight and LRT noise. This is because Category 3 uses are daytime uses and will not typically be open when the freight is traversing Randolph Street at night. Therefore, under NEPA, adverse effects for the LPA will remain adverse even after implementation of mitigation.

Table 4.7.9. Mitigated Freight Track Relocation Noise

Street	Cluster No.	Cat.[1]	Land Use	Mitigation Measures	Noise Level dBA (Cat. 2, L_{dn}) (Cat. 3, L_{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
Randolph Street	N50	2	SFR/MFR	NOI-3	68	69	65	63	68	Moderate
	N51	3	Lillian Street Elementary	None	73	71	71	70	77	Moderate
	N53	2	SFR/MFR	NOI-1	69	63	62	63	69	No
	N54	2	SFR	NOI-1	69	67	65	64	69	Moderate
	N56	2	SFR	NOI-1	69	67	64	64	69	Moderate
	N58	2	SFR/MFR	NOI-1	69	66	63	64	69	No
	N60	2	SFR/MFR	NOI-1	70	67	66	64	69	Moderate
	N61	2	SFR	NOI-1	69	65	63	64	69	No
	N62	3	Templo Asamblea De Oracion	NOI-1	73	72	72	70	76	Moderate
	N65	2	SFR/MFR	NOI-1	69	66	64	64	69	Moderate
	N66	2	SFR/MFR	NOI-1	69	66	65	64	69	Moderate
	N67	3	UEI College	None	71	70	70	70	75	Moderate
	N69	2	SFR/MFR	NOI-1	64	60	59	60	65	No
	N70	2	SFR/MFR	None	64	60	60	60	65	Moderate
	N71	2	MFR	NOI-1	66	65	64	61	67	Moderate
	N72	2	SFR/MFR	NOI-1	64	60	59	60	65	No
	N73	2	MFR	NOI-1	66	68	68	61	67	Severe
	N74	2	SFR/MFR	NOI-1, NOI-2	64	63	59	60	65	No
	N75	2	MFR	NOI-1, NOI-2	65	64	61	61	66	Moderate
	N76	2	SFR/MFR	NOI-1, NOI-2	66	69	64	61	67	Moderate
	N77	2	SFR/MFR	NOI-1, NOI-2	64	65	61	60	66	Moderate
	N78	2	SFR/MFR	NOI-1, NOI-2	65	65	61	60	66	Moderate

Street	Cluster No.	Cat.[1]	Land Use	Mitigation Measures	Noise Level dBA (Cat. 2, L_{dn}) (Cat. 3, L_{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
	N79	2	SFR/MFR	NOI-1, NOI-2	66	69	64	61	67	Moderate
	N80	2	SFR/MFR	NOI-1, NOI-2	66	70	66	61	67	Moderate
	N81	2	SFR	NOI-1, NOI-2	64	63	59	60	65	No
	N82	2	SFR/MFR	NOI-1	64	62	59	60	65	No
	N83	3	Huntington Park High School	None	74	75	75	70	78	Moderate
	N84	2	SFR/MFR	NOI-1	65	62	62	60	66	Moderate
	N85	2	SFR/MFR	NOI-1	66	67	66	62	67	Moderate
	N86	2	SFR/MFR	NOI-1	66	66	64	61	67	Moderate
	N87	2	SFR	NOI-1	64	60	59	60	65	No
	N88	2	SFR/MFR	NOI-1	66	66	64	61	67	Moderate
	N89	2	SFR/MFR	NOI-1	67	66	65	62	67	Moderate
	N90	2	SFR	NOI-1	65	62	61	61	66	Moderate
	N91	2	SFR	NOI-1	65	61	60	61	66	No
	N92	2	SFR/MFR	NOI-1	65	63	61	61	66	Moderate
	N93	2	SFR	NOI-1	67	66	65	62	67	Moderate
	N94	2	SFR/MFR	NOI-1	66	65	64	61	67	Moderate
	N95	2	SFR/MFR	NOI-1	64	61	59	60	66	No
	N96	2	SFR	NOI-1	66	64	62	61	67	Moderate
	N97	2	SFR/MFR	NOI-1	64	60	58	60	66	No
	N98	2	SFR/MFR	NOI-1	66	63	62	61	67	Moderate
	N99	2	SFR/MFR	NOI-1	64	62	61	60	66	Moderate
	N100	3	San Antonio Elementary	NOI-1, NOI-5	72	70	66	70	76	No
	N101	2	SFR	NOI-1, NOI-5	65	62	59	61	66	No
	N102	2	SFR	NOI-1, NOI-5	66	64	56	62	67	No

Street	Cluster No.	Cat.[1]	Land Use	Mitigation Measures	Noise Level dBA (Cat. 2, L_{dn}) (Cat. 3, L_{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
	N103	2	SFR	NOI-1, NOI-5	65	61	59	61	66	No
	N104	2	SFR	NOI-1, NOI-5	66	64	60	62	67	No
	N105	2	SFR/MFR	NOI-1, NOI-5	67	64	60	62	67	No
	N349	2	SFR	NOI-1, NOI-2, NOI-5	66	70	65	61	67	Moderate
	N350	2	SFR/MFR	NOI-1, NOI-5	66	67	65	61	67	Moderate
	N351	2	MFR	NOI-1, NOI-5	66	66	65	61	67	Moderate
	N362	2	SFR	NOI-1	66	64	57	61	67	No
	N363	2	SFR	NOI-1	66	66	57	61	67	No
	N364	2	SFR	NOI-1, NOI-5	65	61	58	61	66	No
	N365	2	SFR	NOI-1	64	60	57	60	66	No
	N366	2	SFR	NOI-1	65	63	56	61	66	No
	N367	2	MFR	NOI-1	66	65	64	61	67	Moderate
Façade Avenue	N181	3	Trinity Bible Church	None	82	79	79	70	80	Moderate
	N183	3	Apostolic Assembly South Gate	None	73	72	72	70	77	Moderate
	N184	3	American Indian Bible Church	None	79	76	76	70	80	Moderate
	N191	2	SFR	NOI-1, NOI-5	60	61	57	61	66	No
	N192	2	SFR	NOI-1, NOI-5	65	59	54	61	67	No
	N193	2	SFR	NOI-1, NOI-5	66	59	55	61	67	No
	N194	2	SFR	NOI-1, NOI-5	59	61	57	61	66	No
	N196	2	SFR	NOI-1, NOI-5	59	60	58	61	66	No
	N197	2	SFR	NOI-1, NOI-5	66	60	55	61	67	No
	N199	2	SFR	NOI-1, NOI-5	56	52	52	55	61	No

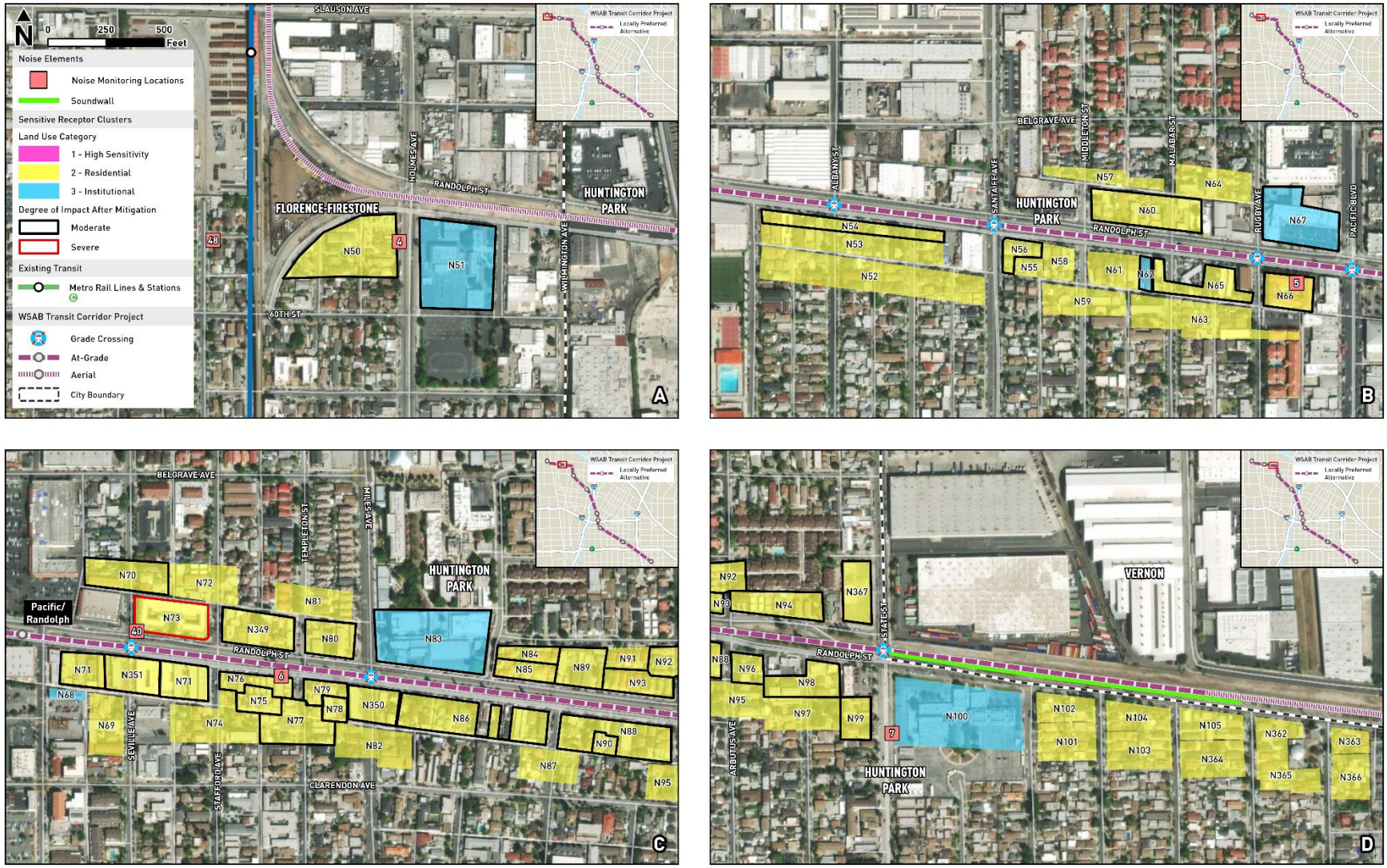
Street	Cluster No.	Cat.[1]	Land Use	Mitigation Measures	Noise Level dBA (Cat. 2, L_{dn}) (Cat. 3, L_{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
	N200	2	SFR	NOI-1, NOI-5	68	60	58	59	65	No
	N201	2	SFR	NOI-1, NOI-5	61	59	56	57	63	No
	N202	2	SFR	NOI-1, NOI-5	57	54	53	55	61	No
	N203	2	SFR	NOI-1, NOI-3, NOI-5	66	55	53	56	62	No
	N204	2	SFR	NOI-1, NOI-3, NOI-5	70	61	55	58	63	No
	N205	2	SFR	NOI-1, NOI-3, NOI-5	64	52	53	55	61	No
	N206	2	SFR	NOI-1, NOI-3, NOI-5	77	60	57	58	63	No
	N207	2	SFR	NOI-1, NOI-3, NOI-5	70	62	57	59	65	No
	N208	2	SFR	NOI-1, NOI-3, NOI-5	66	54	55	56	61	No
	N209	2	SFR	NOI-1, NOI-3, NOI-5	66	53	54	55	61	No
	N210	2	SFR	NOI-1, NOI-3, NOI-5	72	61	55	58	64	No
	N211	2	SFR	NOI-1, NOI-5	56	53	50	55	61	No
	N212	2	SFR	NOI-1, NOI-5	59	55	52	56	62	No
	N213	2	SFR	NOI-1, NOI-5	63	61	55	58	64	No
	N352	2	MFR	NOI-1, NOI-5	67	60	59	58	64	Moderate

Source: Metro 2024j

Notes: [1] Category 2: Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance. Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

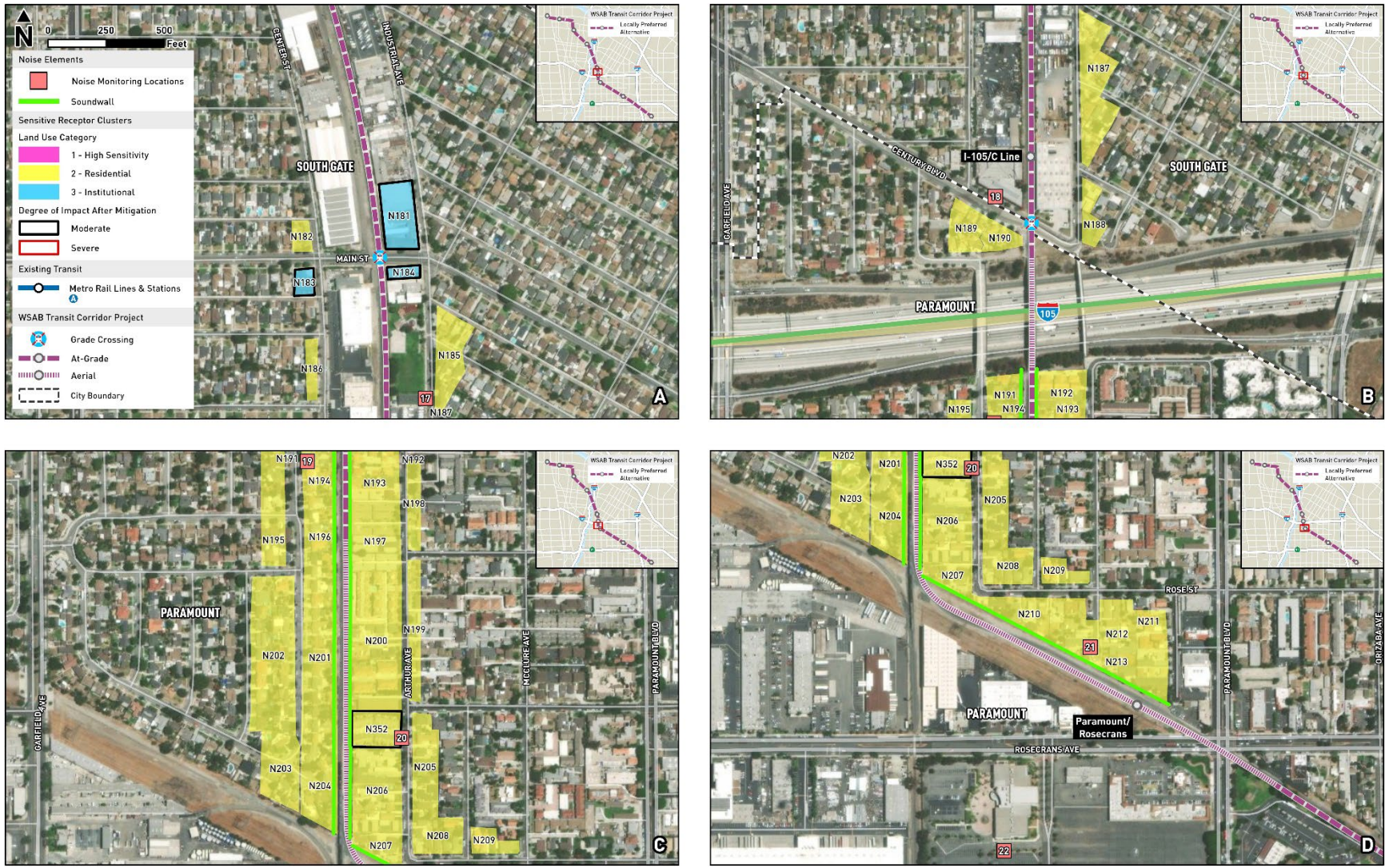
Cat. = category; dBA = A-weighted decibel; Ldn = day-night noise level; Leq = equivalent sound level; MFR = multifamily residential; SFR = single-family residential

Figure 4.7-11. Freight Noise Impacts Remaining After Mitigation, including Soundwalls



Source: Metro 2024j

Figure 4.7-12. Freight Noise Impacts Remaining After Mitigation, including Soundwalls



Source: Metro 2024j

Vibration

VIB-1 Ballast Mat or Resilient Rail Fasteners. At the locations identified in the following table where exceedance of FTA groundborne vibration impact criteria for frequent events will occur, Metro will isolate trackwork using ballast mats for ballast and tie track and resilient rail fasteners for direct fixation track or other equally or more effective vibration isolation techniques. Locations where mitigation is necessary will be verified during final design with the objective to reduce vibration levels to below the FTA groundborne vibration impact criteria for frequent events.

VIB-1 Ballast Mat or Resilient Rail Fasteners

Civil Station	Location
705+00 to 720+00	Between Albany St and Rugby Ave
732+00 to 757+00	Between Seville Avenue and Arbutus Ave
802+00 to 893+00	Between Gage Ave. and Cecilia St
1089+00 to 1105+00	Between I-105 and Racine Avenue
1124+00 to 1135+00	Between Paramount Boulevard and Paramount High School
1162+00 to 1240+00	Between approximately 600 feet southeast of Downey Ave and Orchard Ave
1251+00 to 1257+00	Between approximately 300 feet southeast of Bellflower Blvd and approximately 200 feet northeast of Civic Center Dr
1273+00 to 1311+00	Between Flower St and San Gabriel River channel
1363+00 to 1403+00	Between approximately 500 feet southeast of Rosewood Park and 187th St
1410+00 to 1419+00	Between Pioneer Blvd and South St

VIB-2 Low Impact Frogs. Low impact frogs will be used at the turnout and crossover track locations identified where exceedance of the FTA impact thresholds has been identified. The locations of low impact frogs required to reduce vibration impacts are identified with Mitigation Measure NOI-2 (Low Impact Frogs). Locations where mitigation is necessary will be verified during final design with the objective to reduce vibration levels to below the FTA groundborne vibration impact criteria for frequent events.

Mitigated LRT Vibration: Per FTA guidance to complete a Detailed Vibration Assessment during the final design phase of a project (FTA 2018), detailed vibration analysis supporting the design of mitigation will be conducted for those locations identified in this Final EIS/EIR as potentially exceeding the FTA impact thresholds. The Detailed Vibration Assessment will include vibration propagation testing to determine site-specific soil behavior to vibration and support mitigation design that is tailored to eliminating the specific impact at each location. A Detailed Vibration Assessment at these locations may show that vibration impacts will not occur and control measures are not needed. Nonetheless, under NEPA, adverse effects for the LPA may remain even after mitigation. Predicted residual impacts are shown at two locations in Figure 4.7-13 and Figure 4.7-14.

Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) will apply to the LPA. As shown in Table 4.7.10, although Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) will reduce vibration impacts, 2 clusters will still experience LRT vibration impacts in the range of 1 VdB to 2 VdB. The Detailed Vibration Assessment will be used to design site-specific mitigation to eliminate residual impacts to the extent feasible. According to FTA guidance, there is a strong chance that after mitigation, groundborne vibration levels at these two clusters will be below the impact threshold. Nonetheless, LPA impacts may be adverse even after implementation of mitigation. Vibration impacts would be the same for the LPA with the design option as for the LPA without the design option, and the same mitigation commitments would apply to the LPA with the design option. With mitigation, no vibration impacts will occur from freight track relocations or the MSF.

Table 4.7.10. Mitigated LRT Vibration

Cluster No.	Land Use	Near Track Distance (feet)	Speed (mph)	Predicted GBV Level, VdB	Mitigation Measure	Predicted Mitigated GBV Level, VdB	FTA GBV Impact Criteria, VdB[1]	Residual Impact?[2]
V48	SFR	35	35	75	Ballast Mat	67	72	No
V50	SFR	45	35	74	Ballast Mat	66	72	No
V52	SFR/MFR	40	35	74	Ballast Mat	66	72	No
V53	SFR/MFR	60	35	73	Ballast Mat	65	72	No
V54	SFR	45	35	74	Ballast Mat	66	72	No
V56	SFR/MFR	35	35	75	Ballast Mat	67	72	No
V58	MFR	35	35	75	Ballast Mat	67	72	No
V59	SFR/MFR	70	35	73	Ballast Mat	65	72	No
V62	SFR/MFR	90	35	75	Ballast Mat	67	72	No
V63[3]	SFR/MFR	30	35	83	Ballast Mat & Low Impact Frog	65	72	No
V66	SFR/MFR	60	35	73	Ballast Mat	65	72	No
V67	SFR/MFR	30	35	76	Ballast Mat	68	72	No
V68	SFR/MFR	30	35	76	Ballast Mat	68	72	No
V69	SFR/MFR	65	35	73	Ballast Mat	65	72	No
V72	SFR	70	35	73	Ballast Mat	65	72	No
V81[3]	SFR	20	35	89	Ballast Mat & Low Impact Frog	71	72	No
V82	SFR	90	35	77	Ballast Mat	66	72	No
V84	SFR/MFR	35	35	79	Ballast Mat	69	72	No
V86	SFR/MFR	25	35	80	Ballast Mat	70	72	No
V88	SFR	25	35	81	Ballast Mat	67	72	No
V89	SFR	30	25	78	Ballast Mat	67	72	No

Cluster No.	Land Use	Near Track Distance (feet)	Speed (mph)	Predicted GBV Level, VdB	Mitigation Measure	Predicted Mitigated GBV Level, VdB	FTA GBV Impact Criteria, VdB[1]	Residual Impact?[2]
V94	SFR/MFR	55	35	75	Ballast Mat	67	72	No
V99	SFR	60	35	75	Ballast Mat	67	72	No
V102	SFR	50	45	77	Ballast Mat	68	72	No
V103	SFR	85	45	73	Ballast Mat	64	72	No
V105	SFR	80	55	73	Ballast Mat	65	72	No
V108	SFR	65	55	75	Ballast Mat	67	72	No
V110	SFR	75	55	74	Ballast Mat	66	72	No
V112	SFR	70	55	74	Ballast Mat	66	72	No
V113	SFR	80	55	73	Ballast Mat	65	72	No
V114	SFR	75	55	74	Ballast Mat	66	72	No
V115[3]	SFR	140	55	75	Ballast Mat & Low Impact Frog	67	72	No
V116[3]	SFR/MFR	80	55	80	Ballast Mat & Low Impact Frog	65	72	No
V117	MFR	75	55	74	Ballast Mat	66	72	No
V119	Mobile Homes	85	55	73	Ballast Mat	65	72	No
V127	SFR	60	55	75	Ballast Mat	67	72	No
V128	SFR	25	25	76	Ballast Mat	68	72	No
V129	SFR	15	25	79	Ballast Mat	71	72	No
V130	SFR	24	25	76	Ballast Mat	68	72	No
V131	SFR	20	25	77	Ballast Mat	69	72	No
V132	SFR	34	25	74	Ballast Mat	66	72	No
V133	SFR	20	25	77	Ballast Mat	69	72	No
V134	SFR	20	25	77	Ballast Mat	69	72	No

Cluster No.	Land Use	Near Track Distance (feet)	Speed (mph)	Predicted GBV Level, VdB	Mitigation Measure	Predicted Mitigated GBV Level, VdB	FTA GBV Impact Criteria, VdB[1]	Residual Impact?[2]
V135	SFR	25	25	76	Ballast Mat	68	72	No
V142	SFR	72	55	74	Ballast Mat	66	72	No
V144	SFR	66	55	75	Ballast Mat	67	72	No
V149	SFR	125	55	75	Ballast Mat	69	72	No
V152	SFR	20	55	82	Ballast Mat	74	72	Yes
V153[3]	SFR	33	55	84	Ballast Mat & Low Impact Frog	66	72	No
V154[3]	SFR	31	55	90	Ballast Mat & Low Impact Frog	72	72	No
V155[3]	SFR	50	55	77	Ballast Mat & Low Impact Frog	69	72	No
V157	Mobile Homes	70	55	74	Ballast Mat	66	72	No
V158	SFR	66	55	75	Ballast Mat	67	72	No
V160	SFR	70	55	74	Ballast Mat	66	72	No
V162	SFR	65	55	75	Ballast Mat	67	72	No
V163	SFR	75	55	74	Ballast Mat	66	72	No
V165	MFR	80	55	73	Ballast Mat	65	72	No
V166	MFR	65	55	75	Ballast Mat	67	72	No
V171	SFR	60	55	75	Ballast Mat	67	72	No
V173[3]	SFR	115	45	75	Ballast Mat & Low Impact Frog	67	72	No
V174[3]	Aztec Mobile Home	25	35	88	Ballast Mat & Low Impact Frog	70	72	No
V175[3]	SFR	120	35	73	Ballast Mat & Low Impact Frog	65	72	No
V180	MFR	25	45	80	Ballast Mat	72	72	No
V181	MFR	60	55	75	Ballast Mat	67	72	No
V187	SFR/MFR	40	55	78	Ballast Mat	70	72	No

Cluster No.	Land Use	Near Track Distance (feet)	Speed (mph)	Predicted GBV Level, VdB	Mitigation Measure	Predicted Mitigated GBV Level, VdB	FTA GBV Impact Criteria, VdB[1]	Residual Impact?[2]
V189	SFR	25	55	81	Ballast Mat	73	72	Yes
V192[3]	SFR	60	55	84	Ballast Mat & Low Impact Frog	66	72	No
V193[3]	SFR	50	55	86	Ballast Mat & Low Impact Frog	68	72	No
V194[3]	SFR	30	55	90	Ballast Mat & Low Impact Frog	72	72	No
V195[3]	SFR	45	55	78	Ballast Mat & Low Impact Frog	70	72	No
V197[3]	SFR	58	55	76	Ballast Mat & Low Impact Frog	68	72	No
V199	SFR	65	55	75	Ballast Mat	67	72	No
V202	SFR	65	55	75	Ballast Mat	67	72	No
V204	SFR	50	55	77	Ballast Mat	69	72	No
V205	SFR	60	55	75	Ballast Mat	67	72	No
V206	SFR	45	55	77	Ballast Mat	69	72	No
V207	SFR	40	55	78	Ballast Mat	70	72	No
V210	SFR	60	55	75	Ballast Mat	67	72	No
V211	SFR	40	55	78	Ballast Mat	70	72	No
V212	SFR	50	55	77	Ballast Mat	69	72	No
V213	SFR	80	55	73	Ballast Mat	65	72	No
V214	SFR	50	45	76	Ballast Mat	68	72	No
V216	SFR	40	45	77	Ballast Mat	69	72	No
V217[3]	SFR	56	40	83	Ballast Mat & Low Impact Frog	65	72	No
V218[3]	SFR	50	30	83	Ballast Mat & Low Impact Frog	65	72	No
V219[3]	SFR	40	30	84	Ballast Mat & Low Impact Frog	66	72	No
V221[3]	SFR/MFR	65	20	74	Ballast Mat & Low Impact Frog	66	72	No

Cluster No.	Land Use	Near Track Distance (feet)	Speed (mph)	Predicted GBV Level, VdB	Mitigation Measure	Predicted Mitigated GBV Level, VdB	FTA GBV Impact Criteria, VdB[1]	Residual Impact?[2]
V222[3]	SFR/MFR	40	20	76	Ballast Mat & Low Impact Frog	68	72	No
V223[3]	SFR	45	20	76	Ballast Mat & Low Impact Frog	68	72	No
V230[3]	SFR	52	15	77	Ballast Mat & Low Impact Frog	69	72	No
V232[3]	SFR	50	15	78	Ballast Mat & Low Impact Frog	70	72	No
V234[3]	Industrial	52	55	77	Low Impact Frog	72	75[4]	No

Source: Metro 2024j

Notes: [1] A vibration level exceeds the impact criteria if it exceeds the threshold.

[2] Residual impacts are those impacts remaining after including the benefits of mitigation.

[3] Predicted GBV at these locations include the added vibration from turnouts and crossovers.

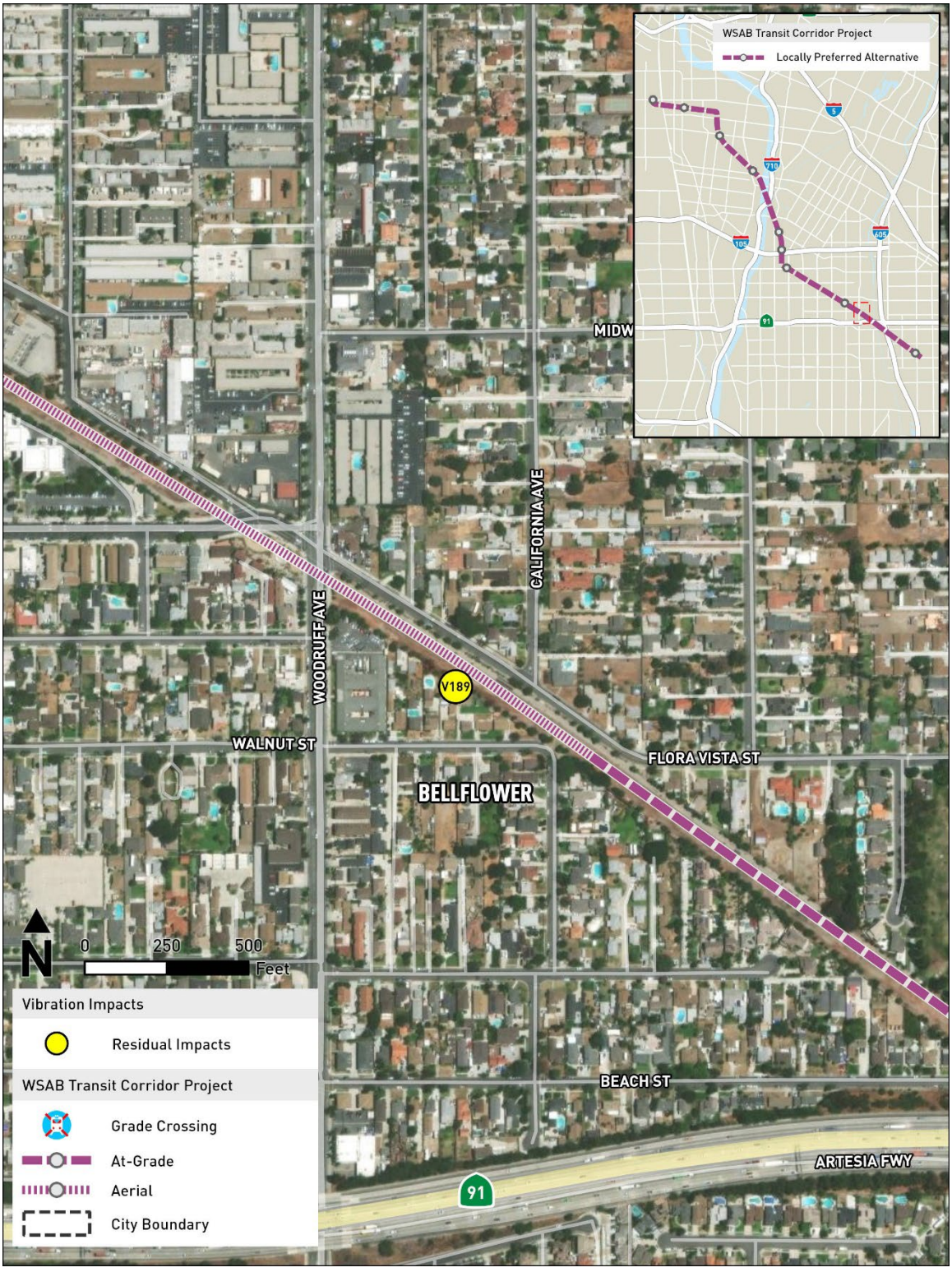
[4] Site-specific vibration design criteria established based on existing facility operations.

FTA = Federal Transit Administration; GBV = groundborne vibration; LRT = light rail transit; mph = miles per hour; MFR = multifamily residential; SFR = single-family residential; VdB = vibration decibels

Figure 4.7-13. Vibration Impacts Remaining After Mitigation (City of Paramount to City of Bellflower)

Source: Metro 2024j

Figure 4.7-14. Vibration Impacts Remaining After Mitigation (City of Bellflower to City of Cerritos)



Source: Metro 2024j

4.7.5 California Environmental Quality Act Determination

4.7.5.1 Threshold NOI-1: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established by FTA or in the local general plans or noise ordinances?

For the purposes of this analysis, moderate and severe impacts under FTA's noise criteria are considered significant impacts under CEQA.

No Project Alternative

Under the No Project Alternative, existing noise sources such as industrial areas along the project alignment, occasional aircraft flyovers, and the movement of trains along existing railroads would remain the dominant noise sources in the project area. No project-related operational noise impacts would occur. Therefore, impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

LRT: Noise sources associated with at-grade and aerial LRT include steel wheels rolling on steel rails (wheel/rail noise), propulsion motors, air conditioning, and other auxiliary equipment on the vehicles. Sensitive uses will be exposed to a combination of noise sources, including LRT pass-by noise, audible warnings noise (crossing signal bells), wheel squeal noise, and special trackwork noise. A total of 308 Category 2 clusters and 26 Category 3 clusters have been analyzed for the LPA. No Category 1 land uses have been identified in the LPA corridor. Table 4.7.3 provides a summary of sensitive land uses considered for the analysis of LRT pass-by noise. Throughout the LPA corridor, moderate impacts will occur at 94 Category 2 clusters and severe impacts at 117 clusters. Three Category 3 clusters will experience moderate impacts. In total, the LPA will result in 97 moderate impacts and 117 severe impacts. Therefore, without mitigation, impacts related to LRT noise will be significant.

Regarding health effects of noise, it is unlikely for LRT noise to result in noise-induced hearing loss, as this is an occupational hazard related to working over long periods of time in high noise environments. FTA defines moderate impacts as those having the potential to result in measurable annoyance in a community and severe impacts as those causing a high level of community annoyance. LRT noise could increase stress and the potential for stress-related diseases at affected sensitive uses. This applies for other areas that will result in noise impacts.

Ancillary Facilities: One moderate impact and two severe impacts will occur as a result of ancillary facility noise. Therefore, without mitigation, impacts related to ancillary facility noise will be potentially significant.

Parking Facilities: No impacts will occur related to parking facility noise. Therefore, without mitigation, impacts related to parking facility noise will be less than significant.

Freight Track Relocation: Relocation of existing freight tracks will be required south of the project alignment within the La Habra Branch ROW, to the west of the project alignment within the San Pedro Subdivision ROW, and to the north of the project alignment within the Metro-owned PEROW to accommodate the LPA alignment and maintain existing operations along the ROW where the proposed LRT tracks will be co-located with the existing freight tracks. Section 4.7.3.2 discusses the freight train noise and relocation of freight tracks

associated with implementation of the LPA. The freight tracks will be relocated closer to sensitive receivers at two locations. At the first location, there will be an approximately 9-foot shift of the centerline of the freight tracks to the north of the La Habra Branch ROW along Randolph Street. The other location will be near the I-105 freeway, where the centerline of the freight tracks will shift approximately 15 feet. Residences along Façade Avenue and near Rosecrans Avenue will be affected by the relocated freight tracks.

Freight train noise at both of these locations have been added to the LRT noise. The LPA will result in 53 moderate impacts and 22 severe impacts at Category 2 clusters as a result of the combination of freight track relocation, freight train noise, and LRT noise. Eight Category 3 clusters would experience moderate impacts. Category 3 clusters along Randolph Street are unlikely to regularly experience impacts due to a combination of freight and LRT noise. This is because Category 3 uses are daytime uses and will not typically be open when the freight is traversing Randolph Street at night. Therefore, without mitigation, impacts related to relocated freight track noise will be potentially significant.

Mitigation Measures: Mitigation Measure NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (TPSS Noise Reduction), and NOI-5 (Freight Track Relocation Soundwalls).

Impacts Remaining After Mitigation: Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), and NOI-3 (Wheel Squeal Noise Monitoring) will reduce the number and severity of operational noise impacts. Project Measures NOI PM-1 (Crossing Signal Bells) and NOI PM-2 (Gate-Down-Bell-Stop Variance) will provide noise reductions to clusters near grade crossings for LRT noise. Mitigated noise levels and impacts remaining after mitigation are shown in Table 4.7.6 and Figure 4.7-5 through Figure 4.7-10. After implementation of mitigation measures related to LRT noise, 31 moderate impacts and 4 severe impacts will remain at Category 2 clusters. No impacts will remain at Category 3 clusters.

Mitigated noise levels for LRT-plus-freight-relocation noise are shown in Table 4.7.9. Thirty-one moderate impacts and one severe impact will remain at Category 2 clusters after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring) for LRT noise and NOI-5 (Freight Track Relocation Soundwalls) for relocated freight noise. Seven moderate impacts will remain at Category 3 clusters.

Regarding ancillary facility noise, implementation of Mitigation Measure NOI-4 (TPSS Noise Reduction) will reduce TPSS noise levels. However, at this stage in design, various TPSS noise-reduction methods may or may not be completely effective due to design constraints for individual TPSS locations, which will be determined as part of final design. Therefore, one moderate and two severe ancillary facility impacts will remain. Impacts related to the LPA will remain significant and unavoidable with mitigation.

Design Option: Close 186th Street

LRT: The design option would close the 186th Street at-grade crossing and open the 187th Street at-grade crossing. The design option would permit a soundwall to be constructed with no gap until reaching 187th Street, which would improve the effectiveness of the wall for the clusters near 186th Street. The design option would also remove the crossing signal noise from 186th Street and add crossing signal noise to 187th Street. The LPA with the design option would result in 96 moderate impacts and 118 severe impacts related to LRT noise,

which would be a decrease of 1 moderate impact and an increase of 1 severe impact compared to the LPA without the design option. The LPA with and without the design option would result in a total of 214 impacts.

Mitigation Measures: Mitigation Measures NOI-1 (Soundwalls) and NOI-2 (Low Impact Frogs) would be applicable to sensitive receptors within the vicinity of the design option.

Impacts Remaining After Mitigation: Mitigated noise levels and impacts remaining after mitigation are shown in Table 4.7.7. Under the LPA with the design option, 33 moderate impacts and 2 severe impacts will remain at Category 2 clusters after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), and NOI-3 (Wheel Squeal Noise Monitoring). No impacts will remain at Category 3 clusters. Impact levels would change from the LPA without the design option as follows: The impact at Cluster 334 would be reduced from severe to no impact; the impact at Cluster 328 would be reduced from severe to moderate impact; and the impact at Cluster 342 would be changed from no impact to moderate impact. Compared to the LPA without the design option, this would reduce the number of remaining severe impacts by two and increase the number of moderate impacts by two. The overall remaining number of impacts after mitigation would be 35 for the LPA with and without the design option. Impacts related to the LPA with the design option will remain significant and unavoidable with mitigation.

Maintenance and Storage Facilities

Noise levels related to MSF noise sources were modeled at 57 sensitive use clusters near the MSF. The modeling results indicated noise levels will not exceed the FTA noise impact criteria at nearby sensitive uses. The MSF will not result in impacts. Therefore, impacts related to noise at the MSF will be less than significant and no mitigation measures are required.

4.7.5.2 Threshold NOI-2: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

Exceedance of the FTA Vibration Impact Criteria would be considered excessive groundborne vibration. As discussed in Section 4.7.1.2, because the LPA does not include tunnel sections, groundborne noise levels would not be excessive.

No Project Alternative

Under the No Project Alternative, existing sources of groundborne vibration, including trucks traveling along roadways, construction using heavy equipment, and active freight lines within the corridor, will remain the dominant GBV source in the project area. No project-related operational vibration impacts will occur. Therefore, impacts will be less than significant, and no mitigation measures are required.

Locally Preferred Alternative

LRT Pass-By: As described in Section 4.7.3.2, 88 vibration Category 2 clusters will experience impacts from at-grade and aerial LRT pass-by vibration. Aside from Dante Valve Company, none of the Category 3 clusters will experience impacts. Therefore, without mitigation, impacts related to LRT pass-by vibration will be potentially significant.

Freight Track Relocation: The realignment of freight tracks included with the LPA are minor and will not result in vibration impacts at sensitive land uses. No new sources of train vibration will be added to the existing freight tracks. Realignment of the freight tracks north

of the I-105 freeway and along Façade Avenue will move freight tracks closer to some residences and further from others. The vibration level associated with freight trains at the new location will range from 74 dBA to 80 dBA at the nearest residential structures, which does not exceed the FTA impact criterion for residential properties exposed to infrequent vibration events of 80 VdB. Therefore, impacts related to freight track relocation vibration will be less than significant, and no mitigation measures are required.

Mitigation Measures: Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs).

Impacts Remaining After Mitigation: Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) will reduce LRT pass-by vibration impacts. However, impacts will remain at two vibration Category 2 clusters along the alignment after mitigation in the range of 1 VdB to 2 VdB (Table 4.7.10). In accordance with FTA guidance, there is a strong chance that actual groundborne vibration levels at these locations will be below the impact threshold with mitigation. An FTA Detailed Vibration Assessment will be conducted during final design and may show that vibration impacts will not occur and control measures are not needed. Final mitigation design will be based on the Detailed Vibration Assessment to eliminate residual impacts to the extent feasible. Based on currently available information, impacts will be significant even after implementation of mitigation. Therefore, impacts related to LRT pass-by vibration may be significant and unavoidable.

Design Option: Close 186th Street

The LPA with the design option is substantially similar to the LPA without the design option in regard to vibration levels.

Maintenance and Storage Facility

As described in Section 4.7.3.4, no vibration impacts would occur related to operation of the MSF. VIB-2 (Low Impact Frogs) will reduce vibration levels from the track switch for the MSF access track. Therefore, impacts would be less than significant and no mitigation would be required.

4.7.5.3 Threshold NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No public airports or private airstrips are located within 2 miles of the project area. Therefore, no impacts related to airport noise will occur and mitigation will not be required.

4.8 Ecosystems/Biological Resources

This section summarizes the potential adverse effects and impacts on existing biological resources for the No Build Alternative and the LPA, including the MSF. The evaluation also considers the effects of the LPA with and without the design option. The Affected Area for the purposes of evaluating the potential effects/impacts to biological resources (hereafter referred to as the Affected Area for bio) is defined as 100 feet on both sides of the alignment and around the stations, MSF site, TPSS sites, and parking facilities. The Affected Area for bio is sufficient to characterize the existing setting and to evaluate potential effects/impacts to biological resources. Due to the highly urbanized setting, biological resources in the Affected Area for bio are limited.

The Affected Area for bio supports urban landscaping and ruderal/ornamental vegetation. Wildlife resources are limited to those species adapted to highly urbanized environments. Additional information on biological resources is provided in the *West Santa Ana Branch Transit Corridor Project Final Biological Resources Impact Analysis Report* (Metro 2024q).

This section has been revised since the Draft EIS/EIR based on comments received on the Draft EIS/EIR. Information was added regarding potential effects to bats during operation of the LPA. Specifically, information was added to clarify that operational impacts to special-status bats will not occur because, per Mitigation Measure BIO-1 (Bats) (described in Section 4.19.3.8), if active maternity roosts are identified during construction, alternative or substitute roosting habitat would be identified and remain in place following construction to provide long-term habitat. Information was also added regarding invasive species, which will not be used in landscape plans prepared for the LPA. Based on coordination with USACE, this section was also updated to mention the applicability of Section 408 of the Rivers and Harbors Act (RHA) for the Los Angeles River, Rio Hondo channel, and San Gabriel River in Section 4.8.2.2 under the heading "Jurisdictional Waters." As discussed in Section 4.9 (Geotechnical, Subsurface, and Seismic), ongoing coordination with the USACE on the LPA will confirm freeboard (clearance above flood waters), analyze and minimize impacts to channel flood conveyance, and obtain agency approval for temporary and permanent construction impacts. The impact conclusions presented in the Draft EIS/EIR regarding biological resources remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

4.8.1 Regulatory Setting and Methodology

4.8.1.1 Regulatory Setting

Agencies with the regulatory responsibility for protection of biological resources and the regulations they enforce within the Affected Area for bio include the following:

- United States Army Corps of Engineers (USACE): Wetlands and other waters of the United States (Section 404 of the Clean Water Act [CWA], Section 408 of the Rivers and Harbors Appropriation Act of 1899, Executive Order 11990)
- United States Fish and Wildlife Service (USFWS): Federally listed species and migratory birds (Federal Endangered Species Act of 1973 [ESA], Migratory Bird Treaty Act [MBTA], Bald and Golden Eagle Protection Act of 1940, Fish and Wildlife Act of 1956)
- California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game): Riparian areas and other waters of the state, state-listed species (California Endangered Species Act [CESA], California Fish and Game Code Sections 3503, 3503.5, and 3511, Native Plant Protection Act [NPPA])
- Regional Water Quality Control Board (RWQCB): Waters of the state (CWA Sections 401, 402, and 303(d), Porter-Cologne Water Quality Control Act)

For additional information regarding regulatory approvals and the project regulatory setting refer to Section 4.11 in the Water Resources Section of this Final EIS/EIR; Section 2.5.3 of this Final EIS/EIR; and Chapter 3 of the Biological Resources Impact Analysis Report.

4.8.1.2 Methodology

The methodology for the biological resources evaluation described in the sections that follow was developed during preparation of the Draft EIS/EIR and therefore considered all four Build Alternatives evaluated in that document.

Literature Reviews

A literature review was conducted to characterize the nature and extent of biological resources within the corridor. The literature review included an evaluation of current and historical aerial photographs, including the use of Google Earth. The California Natural Diversity Data Base (CNDDB) (CDFW 2017a), the Biogeographic Information and Observation System (CDFW 2017b), the USFWS Critical Habitat Portal (USFWS 2017b), and the Information Planning and Conservation online system (USFWS 2017a) were reviewed to determine if special-status wildlife, plant, or vegetation communities were previously recorded on or near the project alignment.

Additionally, a 5-mile radius CNDDB search was used to determine a preliminary list of special-status species with the potential to occur within the Affected Area for bio, which was then evaluated based on the habitat requirements of the species, existing conditions within the Affected Area for bio, and occurrence details of the species records. The Affected Area for bio is defined as 100 feet on both sides of the alignment and around the stations, MSF site, TPSS sites, and parking facilities.

For purposes of the jurisdictional delineation, available background information was reviewed to better characterize the nature and extent of potential jurisdictional waters and wetlands, including aerial photographs of all potential jurisdictional waters within the corridor; regional and site-specific topographic maps; the Supplement to the Soil Survey, Los Angeles County, California, Southeastern Part (United States Department of Agriculture [USDA], Natural Resources Conservation Service [NRCS] 2017). The *National Wetlands Inventory* (USFWS 2020) and the *National Hydrography Dataset* (United States Geological Survey 2020) were reviewed to determine if any wetlands or other waters had been previously documented and mapped within the Affected Area for bio. To determine if any soil map units mapped in the site were classified as hydric, the *National Hydric Soils List by State: California* (USDA 2020) was also reviewed.

Other resources included the California Native Plant Society Online Inventory of Rare, Threatened, and Endangered Plants of California (California Native Plant Society 2017), CDFW Special Animals List (CDFW 2017c), and CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2017d).

Field Reconnaissance Survey

A field reconnaissance survey of the Affected Area for bio was completed between 10 a.m. and 4 p.m. on May 11, 2017. The purpose of the survey was to document existing biological conditions within the Affected Area for bio, including plant and wildlife species, vegetation communities, jurisdictional waters and wetlands, and the potential for the presence of special-status species and/or habitats. The biologists conducted the survey along the route primarily by car; however, where the route crossed drainages, a detailed examination was conducted via pedestrian survey. Where portions of the Affected Area for bio were inaccessible (e.g., private property), the biologists visually inspected those areas with binoculars (power rating of 10 x 40). Weather conditions during the survey included an average temperature of 70 degrees Fahrenheit, winds between 3 and 5 miles per hour, and zero percent cloud cover.

An additional field reconnaissance survey was conducted on July 24, 2020, during which all potential jurisdictional waters within the Affected Area for bio were delineated. This survey is further described in the Jurisdictional Waters section.

Vegetation Classification

All vegetation communities observed within the accessible portions of the Affected Area for bio were surveyed by vehicle and on foot using binoculars and aerial photography interpretation, as necessary. Vegetation communities were classified using *A Manual of California Vegetation* (Sawyer et. al. 2009), where appropriate.

Flora

All plant species observed in the Affected Area for bio were noted, and plants that could not be identified in the field were identified later using taxonomic keys and reference materials (Jepson Flora Project 2017, Hatch 2007). The reconnaissance survey included a directed search for special-status plants that would have been apparent at the time of the survey. Floral nomenclature for native and non-native plants follows Baldwin et al. (2012) as updated by The Jepson Online Interchange (University of California, Berkeley 2014). The approximate number of street trees within the project footprint was estimated based on engineering plans overlaid on aerial imagery of the Affected Area for bio.

Fauna

Animal species observed directly or detected from calls, tracks, scat, nests, or other signs were documented. The detection of wildlife species was limited by seasonal and temporal factors. The survey was conducted during spring; therefore, potentially occurring winter migrants may not have been observed. Because the survey was performed during the day, identification of nocturnal animals was limited to remnant signs (e.g., scat, tracks), if present onsite. Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (2017); for mammals, Wilson and Reeder (2005); and for amphibians and reptiles, Crother (2012).

Jurisdictional Waters

The reconnaissance-level field survey also evaluated the Affected Area for bio for the presence of aquatic features potentially subject to the jurisdiction of the USACE, RWQCB, and CDFW. Such aquatic features are referred to generally as "jurisdictional resources." The reconnaissance survey was based solely on visual inspection of the Affected Area for bio; a formal jurisdictional delineation of waters and wetlands was not conducted.

An additional reconnaissance-level survey was performed on July 24, 2020, during which all potential jurisdictional features identified within the Affected Area for bio were inspected to record existing conditions and determine jurisdictional limits.

Drainage features, width measurements, and wetland sample points were mapped using a Trimble® GeoXT GPS unit and recent aerial photography. Width measurements for USACE jurisdiction were determined based on the lateral extent of the Ordinary High Water Mark (OHWM). RWQCB jurisdiction was determined in accordance with the previously listed methodologies to identify waters of the U.S. The procedures of State Water Resources Control Board's (SWRCB) *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019) were applied, and the Affected Area for bio was reviewed for features that may have fallen outside federal jurisdiction due to lack of connectivity or insufficient

flow. CDFW jurisdiction was delineated in accordance with Section 1602(a) of the California Fish and Game Code and measured laterally from bank to bank at the top of the channel or to the outer drip-line of associated riparian vegetation, if present.

One OHWM data sheet and one wetland sample point were completed at a representative location within the Affected Area for bio of each crossing to determine the presence/absence of wetland indicators, such as hydrophytic vegetation, hydric soils, and wetland hydrology. Soil test pits were not conducted because the Affected Area for bio consists of concrete-lined channels devoid of soils. Initial coordination with the USACE was not conducted prior to the delineation. The preliminary jurisdictional delineation request was submitted to the USACE on November 5, 2020, for its review and approval. In a letter dated February 9, 2021, the USACE responded to the preliminary jurisdictional delineation request submitted for this study. Consistent with that request and the findings presented herein, the USACE preliminarily determined that waters of the U.S. may be present in three locations in the Affected Area for bio (at the Los Angeles River, Rio Hondo channel, and San Gabriel River crossings).

Impact Analysis

Potential biological effects of the LPA were evaluated by examining existing biological conditions within the Affected Area for bio. This analysis considered potential impacts on special-status plant and wildlife species or aquatic resources subject to USACE jurisdiction, and whether the LPA would conflict with applicable biological plans, policies, or regulations. General indicators of significance, based on guidelines or criteria in NEPA, include the following:

- Potential modification or destruction of habitat, movement corridors, or breeding, feeding, and sheltering areas for endangered, threatened, rare, or other special-status species
- Potential measurable degradation of protected habitats, sensitive vegetation communities, wetlands, or other habitat areas identified in plans, policies, or regulations
- Potential loss of a substantial number of any species that could affect the abundance or diversity of that species beyond the level of normal variability
- Potential indirect impacts, both temporary and permanent, from excessive noise that elicits a negative response and avoidance behavior

The CEQA thresholds of significance are presented in Section 4.8.5.

4.8.2 Affected Environment/Existing Conditions

4.8.2.1 Topography and Soils

The Affected Area for bio is located in the Los Angeles Basin, which is an oval-shaped, alluvial plain spanning approximately 40 miles northwest to southeast. The Los Angeles Basin is bordered by the Santa Monica Mountains on the north, the Puente Hills to the east, the Pacific Ocean to the west, and the Santa Ana Mountains to the south. The topography of the Affected Area for bio is generally flat and includes urban/developed lands and roads and channelized drainages. Elevation ranges from 45 feet on the southeastern end to 175 feet above mean sea level on the northwestern end (U.S. Geological Survey [USGS] 1964a, 1964b, and 1965). The LPA will be within previously developed areas, such as public rights-of-way and industrial, commercial, and residential areas.

Urban/Developed Lands

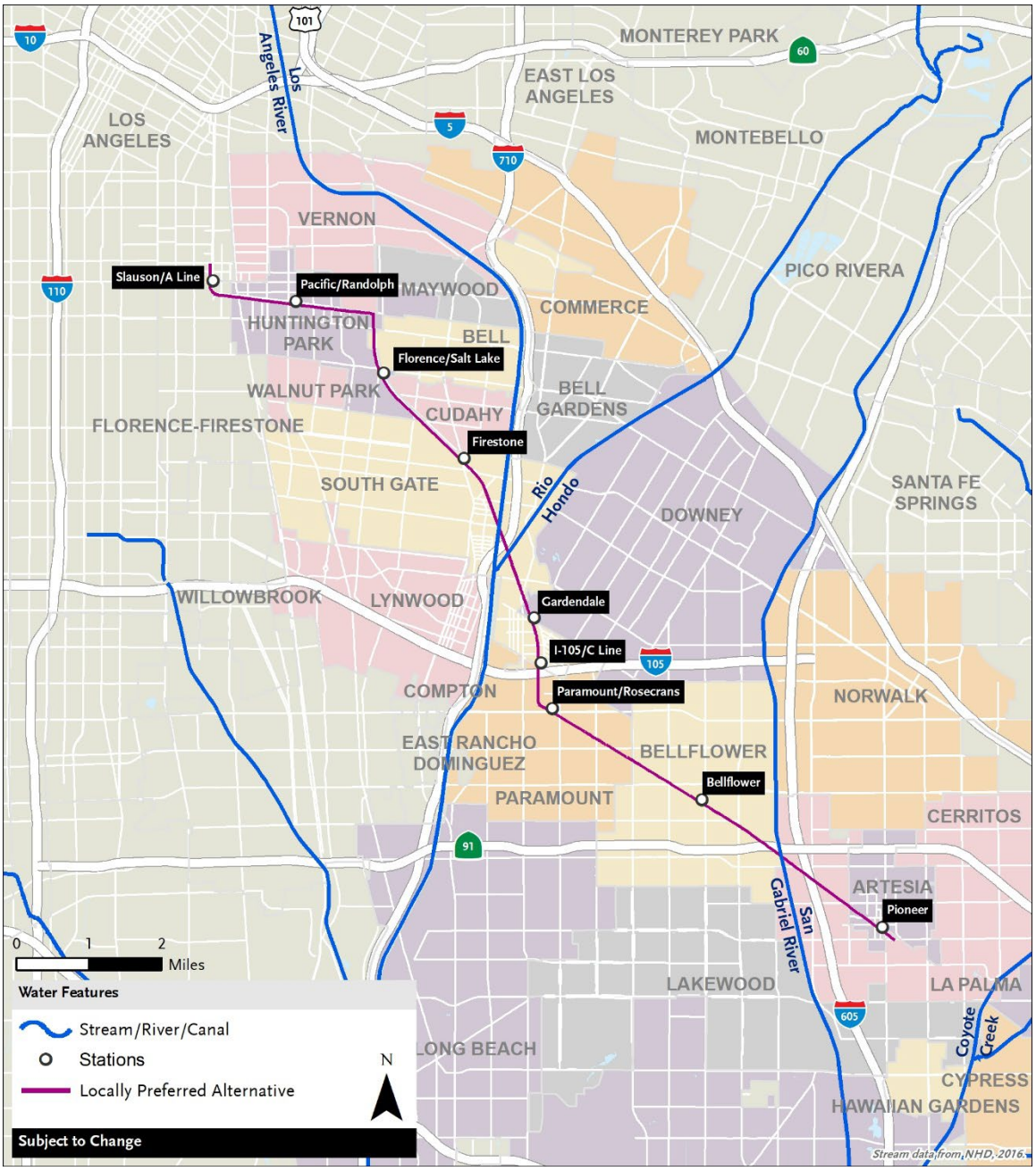
Urban/developed lands include areas that have been developed with structures, streets, sidewalks, or other hardscape elements or otherwise physically altered to an extent that native vegetation is no longer supported. Urban/developed lands are characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. Areas that have been physically disturbed (by previous human activity) and are no longer recognizable as a native or naturalized vegetation association, but continue to retain a soil substrate, may also be considered urban/developed lands.

Specifically, areas identified as urban/developed lands within the Affected Area for bio include paved roads and associated landscaping. Landscaping incorporates both native and non-native species including, but not limited to, coast live oak (*Quercus agrifolia*), various other oaks (*Quercus* spp.), California black walnut (*Juglans californica*), gum trees (*Eucalyptus globulus, E. camaldulensis, E.* spp.), Peruvian pepper (*Schinus molle*), tree of Heaven (*Ailanthus altissima*), juniper (*Juniperus* spp.), various pines (*Pinus* spp.), persimmon (*Diospyros* sp.), Canary Island date palm (*Phoenix canariensis*), Mexican fan palm (*Washingtonia robusta*), queen palm (*Syagrus romanzoffiana*) and various other palms (*Phoenix* spp., *Washingtonia* spp.), elderberry (*Sambucus nigra*), coast myoporum (*Myoporum laetum*), Callery pear (*Pyrus calleryana*), black locust (*Robinia pseudoacacia*), lemon (*Citrus limon*), various ornamental figs (*Ficus* spp.), bird of paradise (*Stelitzia reginae*), bottlebrush (*Callistemon* sp.), and oleander (*Nerium oleander*).

Drainages

The LPA will cross three drainages within the watershed of the Los Angeles River (Figure 4.8-1). The LPA will cross the Los Angeles River and the Rio Hondo channel (a tributary to the Los Angeles River) near I-710, and the San Gabriel River at SR-91 in the City of Bellflower. The streambeds at the crossings are entirely channelized and consist of concrete with scattered ruderal and emergent wetland plant species, such as spikerush (*Eleocharis* sp.), within seams in the concrete. However, the vegetation does not constitute an intact wetland vegetation community due to the extremely sparse distribution. In addition, the alignment will cross numerous storm drain systems. However, these storm drains consist primarily of belowground concrete pipes. The LPA will not cross any soft-bottomed drainage channels with a natural substrate.

Figure 4.8-1. Drainage Locations



Source: Project data from WSP and Metro 2022; stream data from NHD 2016

General Wildlife

The Affected Area for bio and surrounding areas provide habitat suitable for wildlife species that commonly occur in urban areas within Southern California. The identified wildlife species are common in the highly urban, developed areas, and none of these species are

special-status. For details of the wildlife species encountered, refer to the Biological Resources Impact Analysis Report.

The Los Angeles River, Rio Hondo channel, and San Gabriel River are all highly channelized and provide limited vegetated riparian habitat for wildlife. However, several bird species associated with aquatic environments find suitable foraging habitat along the banks of streams or drainages with slow-moving water. Several of these species were observed during the reconnaissance survey, primarily at the Los Angeles River and Rio Hondo channel crossings, and included great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), mallards (*Anas platyrhynchos*), black-necked stilt (*Himantopus mexicanus*), western gull (*Larus occidentalis*), and killdeer (*Charadrius vociferous*).

The elevated structures spanning the drainages (i.e., railroad trellises over the Los Angeles River and Rio Hondo channel and the SR-91 bridge over the San Gabriel River) create adequate nesting habitat for several avian species. An American kestrel (*Falco sparverius*), northern rough-winged swallows (*Stelgidopteryx serripennis*), and white-throated swifts (*Aeronautes saxatalis*) were observed exhibiting nesting behavior under the SR-91 bridge over the San Gabriel River during the reconnaissance survey. Barn swallows (*Hirundo rustica*) were observed over the Los Angeles River at the SR-91 bridge crossing.

4.8.2.2 Special-Status Biological Resources

This section discusses special-status biological resources observed within the Affected Area for bio during the field survey and evaluates the potential for the Affected Area for bio to support other special-status resources based on existing conditions. The potential for each special-status species to occur in the Affected Area for bio was evaluated according to the following criteria:

- *Not Expected:* Habitat on and adjacent to the site is clearly unsuitable for the species' requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- *Low Potential:* Few of the habitat components meeting the species' requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- *Moderate Potential:* Some of the habitat components meeting the species' requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- *High Potential:* All of the habitat components meeting the species' requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- *Present:* The species was observed on the site or has been recorded (e.g., CNDDB, other reports) on the site within the last five years.

Special-Status Species

The CNDDB identified 18 special-status plant species and 18 special-status wildlife species within a 5-mile radius of the Affected Area for bio. Table 4.1 in the Biological Resources Impact Analysis Report provides the species name, status, habitat requirements for all special-status species identified within a 5-mile radius of the Affected Area for bio, and their potential to occur within the Affected Area for bio.

Special-Status Plant Species: During the site survey on May 11, 2017, no rare or sensitive plant species were observed within the Affected Area for bio, with the exception of Southern California black walnut (California Rare Plant Rank 4.2), which is a planted street tree. No other special-status plant species are expected to occur based on the existing development and disturbances and a lack of suitable habitat.

Special-Status Wildlife Species: During the field assessment on May 11, 2017, no special-status wildlife species were observed or otherwise detected, although some species (i.e., great blue heron) are considered sensitive when nesting. While individuals were observed, habitat capable of supporting heron rookeries is not present within the Affected Area for bio; therefore, nesting great blue heron are not expected in the Affected Area for bio. Special-status wildlife species typically have very specific habitat requirements that may include, but are not limited to, vegetation communities, elevation levels and topography, and availability of primary constituent elements (i.e., space for individual and population growth, breeding, foraging, and shelter). As the Affected Area for bio consists of mostly developed rights-of-way and associated landscaping and street/community trees, most of the special-status wildlife species listed in Table 4.1 in the Biological Resources Impact Analysis Report are not expected to occur due to lack of suitable habitat.

The portions of the Affected Area for bio that cross the aforementioned drainages may provide temporary migratory and foraging territory for reptile species that inhabit slow-moving, intermittent streams and seasonal wetlands. The western pond turtle (Emys marmorata) has a low potential to occur based on prior development, existing disturbances, and poor habitat quality within the drainages.

Habitat with the potential to support protected nesting birds, including raptor species, is present within the Affected Area for bio. The typical nesting season for raptors occurs from February 1 to May 31. The reconnaissance survey resulted in no observations of existing raptor nests.

Limited low-quality roosting habitat is available for western mastiff bat (*Eumops perotis californicus*), primarily within the existing bridges crossing the Los Angeles River, Rio Hondo channel, and San Gabriel River. The portions of the Affected Area for bio that cross the aforementioned drainages may provide temporary movement corridors for mammals. However, due to the highly developed nature of the surrounding upland, it is unlikely that mammals use the channelized drainages. The remainder of the Affected Area for bio consists of highly developed urban areas that are unsuitable to wildlife as movement corridors.

Special-Status Vegetation Communities

Special-status vegetation communities have not been mapped 3 miles north of the Affected Area for bio. Multiple California black walnut trees were observed within the Affected Area for bio; however, these individuals are planted street trees and do not constitute a walnut forest community.

Jurisdictional Waters

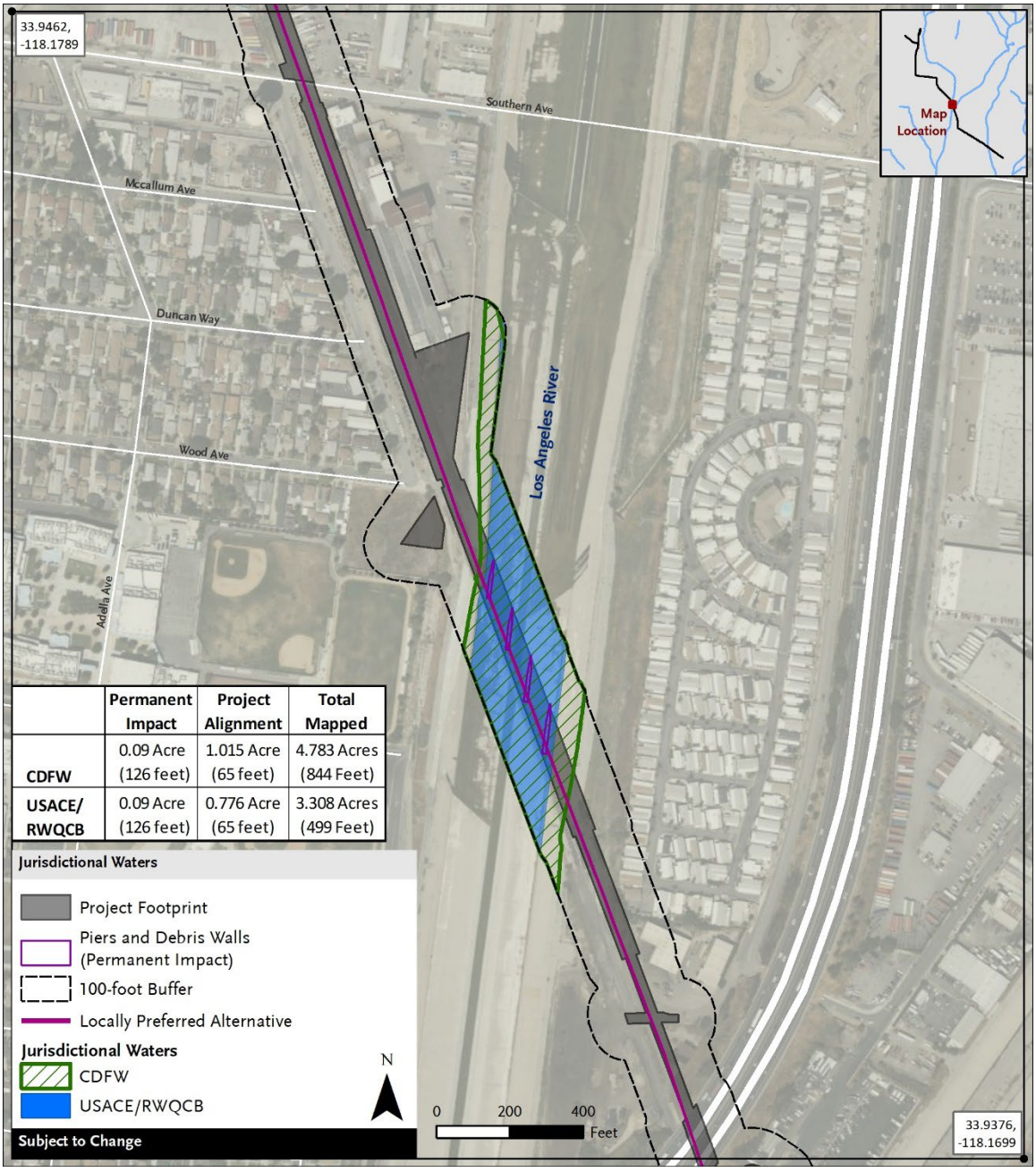
The Affected Area for bio is located within the western edge of the Los Angeles River watershed. The watershed encompasses and is shaped by the path of the Los Angeles River, which flows from its headwaters in the Simi Hills and Santa Susana Mountains eastward to the northern corner of Griffith Park. From Griffith Park, the channel continues southward through the Glendale Narrows before it flows across the coastal plain and into the Pacific Ocean via San Pedro Bay near Long Beach. Based on the findings of the jurisdictional delineation conducted for this

study, the Los Angeles River, Rio Hondo channel, and San Gabriel River are subject to USACE, RWQCB, and CDFW jurisdiction. All three drainages contain an OHWM and bed, bank, and channel features, although riparian vegetation is absent. No wetlands are present due to the absence of soils and the extremely limited distribution of vegetation. These drainages are classified as USACE non-wetland waters. No isolated waters of the state are present.

As discussed previously, the LPA crosses aboveground drainages in three locations (Figure 4.8-1):

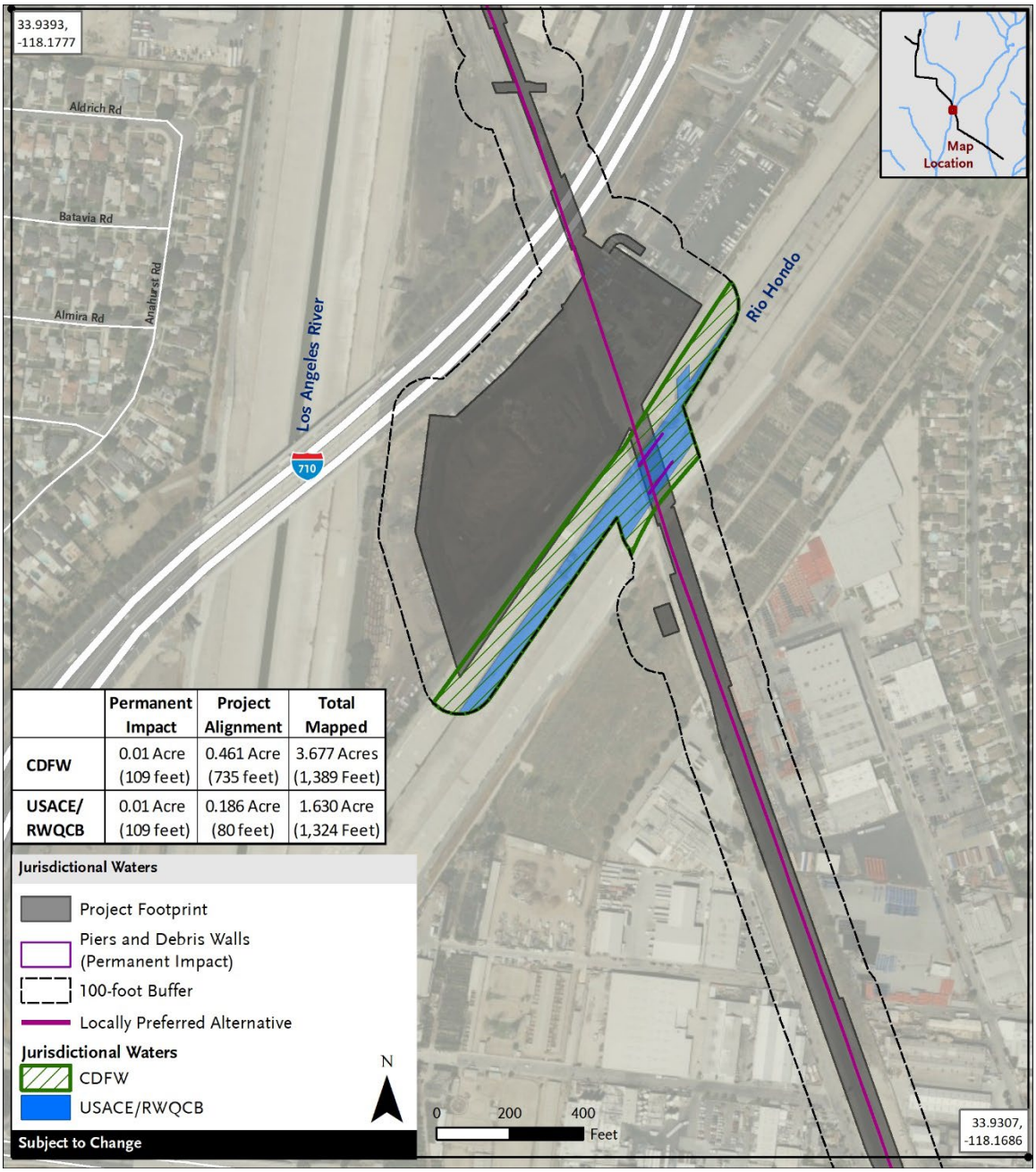
- Drainage Crossing 1: Located at the Los Angeles River between the southern end of Wood Avenue and I-710 in the City of Lynwood. Within the Affected Area for bio, the Los Angeles River contains approximately 3.31 acres of waters subject to the jurisdiction of the USACE and RWQCB (Figure 4.8-2). Because the Los Angeles River is a Traditional Navigable Water and a tributary to the Pacific Ocean, it is subject to the jurisdiction of USACE under Section 404 of the CWA. As a USACE-constructed flood control channel, it is also subject to the jurisdiction of USACE under Section 408 of the RHA. Within the Affected Area for bio, the Los Angeles River contains approximately 4.78 acres of non-riparian streambed subject to the jurisdiction of CDFW. This represents the furthest extent of jurisdictional area within the river. The river's measured bank-to-bank width ranged from 320 feet to 345 feet.
- Drainage Crossing 2: The LPA will cross the Rio Hondo channel, a tributary to the Los Angeles River, between I-710 and Ruchti Road in the City of Lynwood. Within the Affected Area for bio, the Rio Hondo channel contains approximately 1.63 acres of waters subject to the jurisdiction of the USACE and RWQCB (Figure 4.8-3). Because the Rio Hondo channel regularly contributes surface flow to the Los Angeles River—a Traditional Navigable Water tributary to the Pacific Ocean—it is subject to the jurisdiction of USACE under Section 404 of the CWA. As a USACE-constructed flood control channel, it is also subject to the jurisdiction of USACE under Section 408 of the RHA.
- Drainage Crossing 3: The LPA will cross the San Gabriel River at SR-91 in the City of Bellflower. Within the Affected Area for bio, the San Gabriel River contains approximately 0.86 acre of waters subject to the jurisdiction of the USACE and RWQCB (Figure 4.8-4). Because the San Gabriel River regularly contributes surface flow to the Pacific Ocean in a typical year, it is subject to the jurisdiction of USACE under Section 404 of the CWA. As a USACE-constructed flood control channel, it is also subject to the jurisdiction of USACE under Section 408 of the RHA.

Figure 4.8-2. Drainage Crossing 1 Jurisdictional Delineation



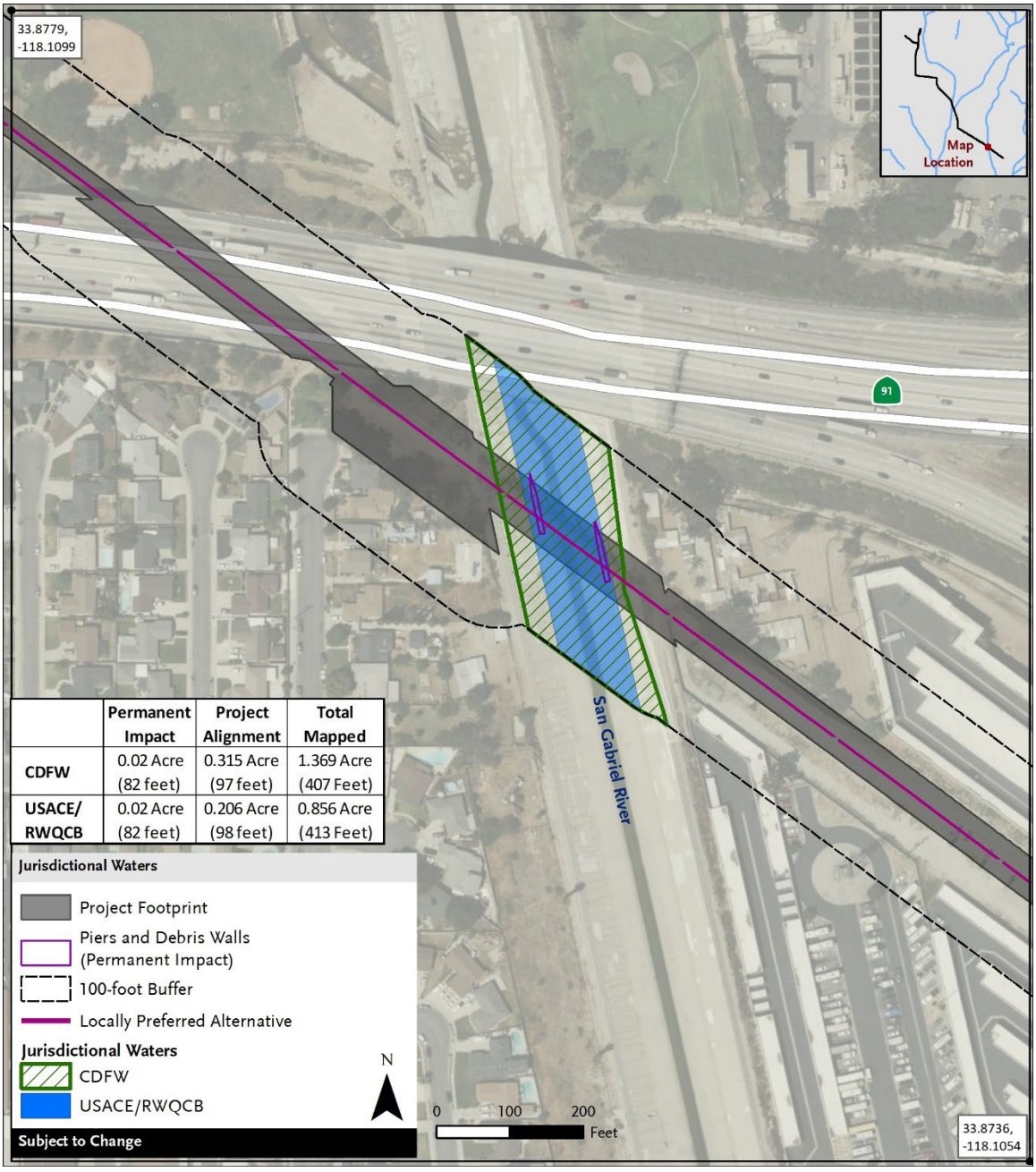
Source: Prepared for Metro in 2022

Figure 4.8-3. Drainage Crossing 2 Jurisdictional Delineation



Source: Prepared for Metro in 2022

Figure 4.8-4. Drainage Crossing 3 Jurisdictional Delineation



Source: Prepared for Metro in 2022

Wildlife Movements

The Project will be located within highly developed urban areas; therefore, it is unlikely that wildlife uses the immediate area for regional movement. Furthermore, the CDFW does not include any mapped California Essential Habitat Connectivity areas within the Affected Area for bio nor does it contain any Missing Linkages as identified by the South Coast Wildlands Network.

Resources Protected by Local Policies and Ordinances

Approximately 85 street trees protected by the Cities of Los Angeles, Huntington Park, Bell, South Gate, Downey, and Cerritos are present within the Affected Area for bio.

Conservation Plans

The Affected Area for bio is not identified as a Biological Resource Area or Significant Ecological Area by the City of Los Angeles, LA County, or any other jurisdictions traversed by the Affected Area for bio. In addition, the Affected Area for bio is highly urbanized and not within or proximate to any native wildlife corridors, native wildlife nursery sites, critical habitat, land trust, Habitat Conservation Plan, or any other regional planning areas, as identified by the City of Los Angeles or any other local, regional, state, or federal agency.

4.8.3 Environmental Consequences/Environmental Impacts

4.8.3.1 No Build Alternative

Under the No Build Alternative, the LPA would not be developed. However, several infrastructure and transportation-related projects would be implemented and built in the vicinity of the project alignment. Projects in the No Build Alternative would undergo environmental analyses to determine if they would result in physical impacts to jurisdictional resources or protected trees. It is anticipated that mitigation would be identified and implemented as needed by the individual projects. Therefore, no adverse impacts related to biological resources would occur under the No Build Alternative.

4.8.3.2 Locally Preferred Alternative

Operation of the LPA will have the potential to result in direct and/or indirect adverse impacts to nesting birds, roosting and/or foraging bats, jurisdictional resources, and protected trees. Those potential impacts are outlined in the following sections.

Special-Status Species

The LPA will be located in a heavily developed/disturbed area that does not support any plant species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS[6]. Therefore, operation of the LPA will not result in adverse direct or indirect impacts on any candidate, sensitive, or special-status plant species identified in such plans, policies, or regulations.

Certain special-status wildlife species may be present, however. The western mastiff bat and pallid bat, CDFW Species of Special Concern, and silver-haired bat, a special-status G5/S3S4 species, may use buildings or bridges within the Affected Area for bio as roosting habitat, specifically within existing bridges crossing the Los Angeles River, Rio Hondo channel, and San Gabriel River. Big free-tailed bat, a CDFW Species of Special Concern, may use the Affected Area for bio as foraging habitat. As described in Section 4.19.3.8, a Bat Habitat Suitability Assessment (as described in Mitigation Measure BIO-1 [Bats]) will be conducted by a qualified bat biologist during the bat maternity season (June 1–October 31) within the Affected Area for bio to determine the potential for impacts resulting from project construction. If active maternity roosts would be affected by construction of the LPA, a

[6] In a meeting held on September 12, 2018, with representatives from the USFWS, Metro, and FTA and in follow-up email correspondence, a representative from the USFWS expressed no concerns with the project alignment in regard to the special status species list.

CDFW-approved Bat Relocation Plan will be prepared, which will include an evaluation of the availability of nearby alternative bat maternity colony sites. If alternative roosting habitat is not available, substitute maternity roost sites will be installed prior to relocation efforts. Alternate roost sites will remain in place following project construction to provide long-term substitute roosting habitat. Because long-term substitute roosting habitat will be provided prior to construction, operation of the LPA will not present a new or unusual use within the Affected Area for bio near occupied roosting habitat; therefore, project operation will not result in adverse effects to special-status bats.

Additionally, nesting bird habitat is present throughout the Affected Area for bio, including within station areas, the MSF site, TPSS sites, and parking facilities. Nesting bird species are protected by the Migratory Bird Treaty Act and the California Fish and Game Code. Increased noise or increased human presence in the Affected Area for bio may result in adverse effects to special-status wildlife. However, the LPA is located in a heavily developed and disturbed area, and as such, operation of the LPA is not expected to present a new or unusual use within the area; therefore, it would be unlikely to affect wildlife species if present. Under NEPA, operation of the LPA will not result in adverse effects related to special-status species and mitigation is not required.

Jurisdictional Waters

Based on the jurisdictional delineation conducted for this study, three crossings of jurisdictional water resources (i.e., the Los Angeles River, Rio Hondo channel, and San Gabriel River) occur within the Affected Area for bio. None of these crossings contain intact riverine or wetland vegetation. The LPA will span these resources. Operation of the LPA will not impact these jurisdictional water resources because there will be no disturbance to the bed, banks, and any associated vegetation, nor will there be a discharge of fill material into the features. Under NEPA, operation of the LPA will not result in adverse effects related to jurisdictional water resources and mitigation is not required.

Invasive Species

The spread of invasive species could occur if invasive plant species are introduced within landscaped areas of the LPA. Pursuant to Project Measure BIO PM-2 (described in Section 4.19.3.8 [Construction-related Biological Resources Section]), invasive species will not be used in landscape plans prepared for the Project; accordingly, operation of the LPA will not result in the spread of invasive species.

Protected Trees

Operation of the LPA will not result in adverse effect related to protected trees within the Affected Area for bio and mitigation is not required.

4.8.3.3 Design Option: Close 186th Street

186th and 187th Streets are roughly 1,000 feet apart and are substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA without the design option are applicable to the LPA with the design option.

4.8.3.4 Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions from the LPA are applicable to the MSF, and operation of the MSF will not result in impacts to biological resources.

4.8.3.5 United States Army Corps of Engineers Facilities

The LPA will cross USACE facilities within the Los Angeles River, Rio Hondo channel, and San Gabriel River. Operation of the LPA will not impact these facilities because there will be no disturbance to the bed, banks, and any associated vegetation, nor will there be discharge of fill material into the features.

4.8.4 Project Measures and Mitigation Measures

No biological impacts are anticipated as a result of operation of the LPA. Therefore, project and mitigation measures are not required.

4.8.5 California Environmental Quality Act Determination

4.8.5.1 Threshold BIO-1: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and no new infrastructure would be built within the Affected Area for bio as a result of the LPA. The existing freight tracks within the rail ROWs and the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no direct or indirect impacts to special-status species.

Locally Preferred Alternative

The LPA will be located in a heavily developed/disturbed area, and as such, operation of the LPA is not expected to present a new or unusual use within the area. As a result, the LPA will be unlikely to affect wildlife species should they be present. Therefore, direct and indirect effects to special-status species as a result of LPA operation will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

186th and 187th Streets are roughly 1,000 feet apart and are substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA without the design option are applicable to the LPA with the design option. Direct and indirect effects to special-status species as a result of operation of the design option would be less than significant.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA is applicable. Direct and indirect effects to special-status species as a result of operation of the MSF will be less than significant.

4.8.5.2 Threshold BIO-2: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

No Project Alternative

As noted above, under the No Project Alternative, the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no impact on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS, and no impacts would occur.

Locally Preferred Alternative

The LPA will be located in a highly developed, urban area, and no quality habitat that would support native riparian plant or wildlife species is present. Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in CNDDB. Similar to special-status plant and wildlife species, vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked with a scale of global (G) or state/providence (S) as 1 through 3 considered sensitive. The vegetation that is present throughout the Affected Area for bio is ruderal or ornamental in nature. Therefore, impacts to sensitive natural communities will not occur as a result of operation of the LPA. There will be no impact, and mitigation will not be required.

Design Option: Close 186th Street

186th and 187th Streets are substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, direct and indirect impacts to riparian habitat or sensitive natural communities as a result of the LPA with the design option would not occur, and mitigation would not be required.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, direct and indirect impacts to riparian habitat or sensitive natural communities as a result of MSF operation will not occur, and mitigation will not be required.

4.8.5.3 Threshold BIO-3: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no impact on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means, and no impacts would occur.

Locally Preferred Alternative

Operation of the LPA will not result in impacts to state or federally protected wetlands. Therefore, no impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

No state or federally protected wetlands are located in the vicinity of the design option. Therefore, impacts to state or federally protected wetlands would not occur as a result of the design option, and no mitigation would be required.

Maintenance and Storage Facility

The MSF site does not contain state or federally protected wetlands. Therefore, impacts to state or federally protected wetlands will not occur as a result of the MSF.

4.8.5.4 Threshold BIO-4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Project Alternative

The LPA would not be constructed under the No Project Alternative, and the environmental setting would remain in current conditions. Under the No Project Alternative, there would be no interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites; therefore, no impacts would occur.

Locally Preferred Alternative

The LPA will be located within developed, urban areas and operation of the LPA will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. As a result, it is unlikely that wildlife uses the immediate area for regional movement. Furthermore, CDFW does not identify any mapped California Essential Habitat Connectivity areas within the Affected Area for bio, nor does the Affected Area for bio contain any Missing Linkages, as identified by the South Coast Wildlands Network. Therefore, no impacts will occur, and mitigation measures will not be required.

Design Option: Close 186th Street

186th and 187th Streets are substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the LPA with the design option would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impacts would occur as a result of operation of the LPA with the design option.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, MSF operation will not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impacts will occur as a result of MSF operation.

4.8.5.5 Threshold BIO-5: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Project Alternative

The LPA would not be constructed under the No Project Alternative and the environmental setting would remain in current conditions. Under the No Project Alternative, there would not be conflicts with any local policies or ordinances protecting biological resources, and no impacts would occur.

Locally Preferred Alternative

Operation of the LPA will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Therefore, no impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with the LPA without the design option, operation of the LPA with the design option would not conflict with any local policies or ordinances protecting biological resources. Therefore, no impacts would occur, and mitigation would not be required.

Maintenance and Storage Facility

Operation of the MSF will not conflict with any local policies or ordinances protecting biological resources. Therefore, no impacts will occur, and mitigation will not be required.

4.8.5.6 Threshold BIO-6: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and the environmental setting would remain in current conditions. Under the No Project Alternative, there would not be conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan, and no impacts would occur.

Locally Preferred Alternative

Operation of the LPA will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Therefore, no impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with the LPA without the design option, operation of the LPA with the design option would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Therefore, no impacts would occur, and mitigation would not be required.

Maintenance and Storage Facility

Operation of the MSF will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Therefore, no impacts will occur, and mitigation will not be required.

4.9 Geotechnical, Subsurface, and Seismic

This section summarizes the applicable regulatory setting, existing conditions, and potentially significant impacts associated with the geotechnical, subsurface, and seismic conditions that underlie the Affected Area for geotechnical, subsurface, and seismic resources (hereafter referred to as the geotech Affected Area). Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Geotechnical, Subsurface, and Seismic Impact Analysis Report* (Metro 2024e).

The regulatory setting has been revised since the Draft EIS/EIR to summarize coordination that will occur with USACE as design of the LPA advances. Additionally, the Draft EIS/EIR indicated that Mitigation Measure GEO-1 (Hazardous Gas [Operations]) would be implemented during operation to reduce potential landfill/soil vapor impacts to transit operators and the public. Mitigation Measure GEO-1 (Hazardous Gas [Operations]) was removed from this section of this Final EIS/EIR as the LPA does not overlap with any active landfills where methane has been detected, does not include tunnels or underground stations, and does not overlap with oil or gas fields. The impact determination for geotechnical, subsurface, and seismic conditions in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

4.9.1 Regulatory Setting and Methodology

4.9.1.1 Regulatory Setting

Federal

There are no federal policies or regulations directly applicable to the geology and soils analysis for the Project. The LPA will cross three existing concrete-lined flood channels (Los Angeles River, Rio Hondo channel, and San Gabriel River) that are under the jurisdiction of the USACE. LPA geotechnical design requirements for the channel crossings are discussed in the following subsections. In accordance with the *West Santa Ana Branch Transit Corridor Project Final Advanced Conceptual Engineering Report* (Metro 2024cc), coordination with the USACE will occur during future stages of design to confirm freeboard (clearance above flood waters), analyze and minimize impact to channel flood conveyance, and obtain agency approval for construction impacts (both temporary and permanent). See the *West Santa Ana Branch Transit Corridor Project Final Water Resources Impact Analysis Report* (Metro 2024d) and Section 4.11 (Water Resources) of this Final EIS/EIR for discussion of the USACE 404 and 408 permit requirements. Metro will coordinate with USACE as design of the LPA advances to confirm consistency with USACE geotechnical requirements for the flood channels.

State and Local

Alquist-Priolo Earthquake Fault Zoning Act: The California legislation protecting the population of California from the effects of fault-line ground-surface rupture is the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] 2621 et seq.). This legislation was enacted in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and published maps showing these zones. The Alquist-Priolo Act (California Geological Survey [CGS] 2018) is the state's principal guidance to prevent the construction of habitable structures on the surface trace of active earthquake faults. The Alquist-Priolo Act only addresses the hazard of surface fault rupture and does not consider other earthquake hazards.

Seismic Hazards Mapping Act: The California Seismic Hazards Mapping Act (PRC 2690-2699.6) became effective in 1991 to identify and map seismic hazard zones for the purpose of assisting cities and counties in preparing the safety elements of their general plans and to encourage land use management policies and regulations that reduce seismic hazards. The recognized hazards include strong ground shaking, liquefaction, landslides, and other ground failure. The Act has resulted in the preparation of maps delineating liquefaction and earthquake-induced landslide Zones of Required Investigation. In addition, the CGS's Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (2008), provides guidance for the evaluation of earthquake-related hazards for projects in designated Zones of Required Investigations and for recommending mitigation measures as required by PRC Section 2695(a).

Surface Mining and Reclamation Act: The State Surface Mining and Reclamation Act (PRC 2710 et seq.) became effective in 1975 to establish policy for the reclamation of mined lands and the conduct of surface mining operations. The geotech Affected Area is not located on an existing or previously mined area, and no local ordinances or regulations allow surface mining within the geotech Affected Area; however, this study does evaluate the issue of loss of mineral resources because of the Project.

California Building Code: In addition to the preceding state acts, California regulations protecting the public from geo-seismic hazards are contained in the CCR Title 24, Part 2 California Building Code (CBC). For surface structures, other than guideways and bridges, the MRDC require conformance with the latest version of the LA County Building Code, which is based on the CBC. The CBC dictates the requirements for design of structures and includes requirements to perform site-specific geotechnical investigations and prepare design reports in accordance with the CBC-specified methodologies. These investigations and reports will be conducted as the design of the LPA advances and will address the hazards (for surface structures other than guideways and bridges) discussed in this section of this Final EIS/EIR.

California Division of Occupational Safety and Health (Cal/OSHA): Construction activities included with the LPA are subject to occupational safety standards for excavation, shoring, and trenching as specified in Cal/OSHA regulations (CCR, Title 8). This includes the Cal/OSHA normal ventilation requirements for underground work areas, which include the following:

- Fresh air must be supplied to all underground work areas in sufficient amounts to prevent any dangerous or harmful accumulation of dusts, fumes, mists, vapors, or gases. If natural ventilation does not provide the necessary air quality through sufficient air volume and air flow, the employer must provide mechanical ventilation such that each employee working underground has at least 200 cubic feet of fresh air per minute.
- When performing work that is likely to produce dust, fumes, mists, vapors, or gases, the linear velocity of air flow in underground work areas must be at least 30 feet per minute. When such operations are complete, the ventilation systems must exhaust smoke and fumes to the outside atmosphere before resuming work.

Metro: The MRDC establish the design criteria for Metro's transit projects, including aboveground features of LRT projects. Section 5 (Structural/Geotechnical) of the MRDC states the following:

> The criteria and codes specified herein shall govern all matters pertaining to the design of Los Angeles County Metropolitan Transportation Authority (Metro) owned facilities including bridges, aerial guideways, cut-and-cover subway structures, tunnels, passenger stations, earth-retaining structures, surface buildings, miscellaneous structures such as culverts, sound walls, and equipment enclosures, and other non-structural and operationally critical components and facilities supported on or inside Metro structures. These criteria also establish the design parameters for temporary structures. The main reference document controlling the seismic design of Metro facilities under these criteria is Section 5 Appendix, Metro Supplemental Seismic Design Criteria.

The MRDC provide guidance on the procedures and methods to be used during design of structures. Section 5 of the MRDC also provides detailed design requirements that address the geologic conditions and hazards discussed in this section. Specifically, MRDC Section 5.6 (Geotechnical) provides geotechnical design requirements, including subsurface investigation and laboratory testing, geotechnical reporting, temporary excavations, and detailed foundation design requirements that will address the hazards discussed in this section.

All new structures must be designed to resist the earthquake forces and ground displacement stipulated in the criteria. The MRDC Section 5 Appendix, Metro Supplemental Seismic Design

Criteria (SDC), dictates the required seismic performance criteria for structures. For structures other than aboveground and underground guideways and bridges, such as buildings and some retaining walls, the MRDC require conformance with the LA County Building Code, which is based on the CBC. For bridges and aerial structures, the MRDC require mandatory conformance with the latest version of the Caltrans Bridge Design Specifications, Caltrans SDC (Caltrans 2017) and the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design Bridge Design Specifications or the American Railway Engineering and Maintenance-of-Way Association (AREMA) specifications, as applicable, depending on the location of the structure. Retaining walls subject to LRT loading will also be designed in conformance with the AASHTO with Caltrans Amendments, per MRDC Section 5.1.3.C.5. Underground structures will be designed to conform with Metro design specifications for underground guideways and structures.

The Metro Supplemental SDC will be used during design of the LPA to provide seismic design recommendations for the LPA. In concert with these recommendations, Metro has a two-level design approach for both aerial and underground structures:

1. The operating design earthquake (ODE), defined as an earthquake event likely to occur only once during the design life, where structures are designed to respond without significant structural damage. The ODE has a 150-year average return period.
2. The maximum design earthquake (MDE), defined as an earthquake event with a low probability of occurring during the design life, where structures are designed to respond with repairable damage and to maintain life safety. The MDE has a 2,500-year average return period.

The Metro Supplemental SDC also require the following:

- Bridges, aerial, and underground structures will be designed in accordance with the Metro MDE, which has a 2,500-year average return period.
- Surface structures not covered by the Caltrans SDC will be designed in accordance with the LA County Building Code, which uses the Maximum Considered Earthquake, with a 2,500-year average return period.
- Bridges supporting railroad loads will be designed in accordance with the requirements of the MRDC, the applicable railroad, or in accordance with AREMA standards in lieu of specific railroad requirements. The average return period for AREMA-owned facilities varies, depending on the structure importance classification, and ranges from a 50- to 2,400-year average return period.

If a structure is governed by more than one set of SDC and a conflict exists, the most critical set of requirements will apply to the design.

4.9.1.2 Methodology

The geotech Affected Area is defined as the area within 250 feet of the LPA. Specifically, the 250-foot buffer extends out from the anticipated area of work/disturbance, including the alignment, the MSF site, design option, temporary (construction) areas, and permanent project areas. Considering that the geotech Affected Area is relatively flat, the 250-foot width would cover potential impacts from the LPA upon the geology and soils of the area. Existing geologic and geotechnical data were reviewed to assess the geotech Affected Area for known geologic hazards and identify potential impacts. If stations or structures are proposed within or directly adjacent to known geologic hazard areas, the potential for an impact has been identified and assessed.

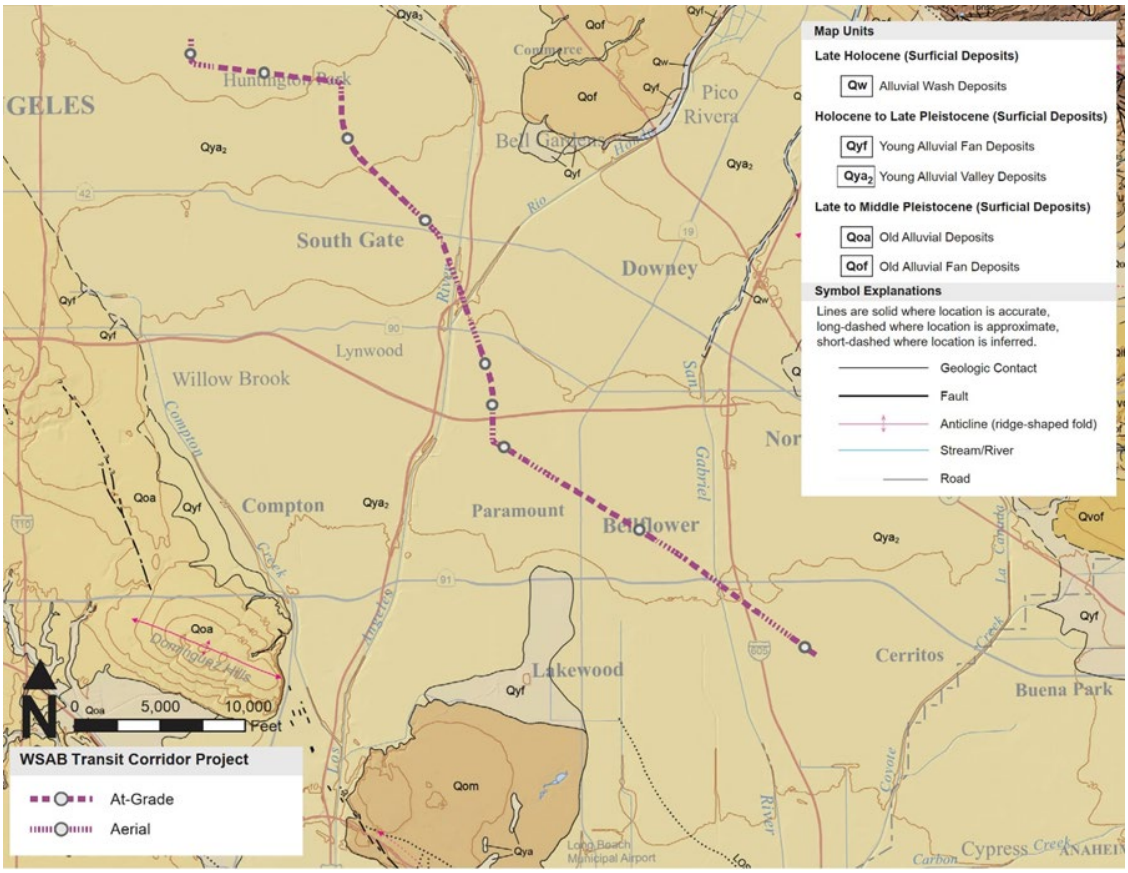
To satisfy CEQA requirements, geology and soils impacts are analyzed in accordance with Appendix G of the *CEQA Guidelines*, identified in Section 4.9.5. Part (f) of the Geology and Soils portion of the CEQA Appendix G Checklist is addressed in Section 4.14.5.3, Paleontological Resources.

4.9.2 Affected Environment/Existing Conditions

4.9.2.1 Regional Geologic Setting

The geotech Affected Area is located within the LA Basin portion of the Peninsular Ranges geomorphic province of California. The Peninsular Ranges province is characterized by a series of northwest-trending mountains, valleys, and faults, all of which generally parallel the San Andreas Fault system. The Elysian Park-Repetto Hills, as well as the Newport-Inglewood Fault Zone, are prime examples of this northwest-trending regional structure. The LA Basin is a structural trough overlying bedrock formations between the Western Continental Shelf and the San Gabriel Mountains. Near the central part of the basin, this structural trough has been filled with nearly 30,000 feet of marine and alluvial deposits of the Quaternary (up to 2.6 million years old) and Tertiary (2.6 to 65 million years old) age (Yerkes et al. 1965). These Quaternary and Tertiary units are underlain by Cretaceous-age (65 to 145 million years old) crystalline bedrock. The geology of the geotech Affected Area is shown on Figure 4.9-1; given the scale of the figure, the limits of the geotech Affected Area are not illustrated.

Figure 4.9-1. Geologic Map



Sources: Prepared by Jacobs in 2023 (geologic base map from Saucedo et al. 2016)

4.9.2.2 Physiography and Topography

The geotech Affected Area is on a gently sloping (relatively flat) alluvial surface (composed of sediment deposited by a river, such as the inactive Los Angeles and San Gabriel River floodplains) within the LA Basin. Elevations along the geotech Affected Area vary from approximately 175 feet above mean sea level (msl) on the northwestern end to 45 feet msl on the southeast end (USGS 1964a, 1964b, and 1965). Overall, the geotech Affected Area slopes toward the south and southwest.

The geotech Affected Area is transected by three river crossings, the concrete-lined Los Angeles River channel, and Rio Hondo channel just west and east, respectively, of I-710, and the concrete-lined San Gabriel River channel just west of I-605 (Figure 4.9-1).

4.9.2.3 Stratigraphy

The following subsections summarize the geotech Affected Area geologic units. In addition to the mapped geologic units present in the geotech Affected Area (Figure 4.9-1), artificial fill soils overlie the alluvial deposits locally. Sedimentary, igneous, and metamorphic bedrock is also present in the geotech Affected Area, at depths well below that of any of the improvements included in the LPA. Because of these depths, bedrock is not a geological concern for the LPA.

Artificial Fill Soil

Within the geotech Affected Area, artificial fill soils have been placed during the construction of some past projects to generally raise the grade (ground level) at a site or to replace soils that were considered detrimental to a proposed development. The depth and lateral extent of these fill soils depend on the original topography as well as urban development within the geotech Affected Area. Fills on the order of 2 to 3 feet to 20 feet thick may be present throughout the geotech Affected Area, although local areas may be underlain by thicker fills. The composition of the fill soils is variable, depending on the source.

Alluvial Soil

Young alluvial valley deposits (unit Qya_2, as shown on Figure 4.9-1) are present in the geotech Affected Area. These alluvial soils generally consist of unconsolidated interbedded lenses and/or discontinuous layers of fine-grained sediment (silt and clay) and coarse-grained sediment (sand, gravel, cobbles, and boulders).

4.9.2.4 Surface Water and Groundwater

Surface Water

The geotech Affected Area is transected (from west to east) by the concrete-lined Los Angeles River, Rio Hondo channel, and San Gabriel River. The geotech Affected Area drains by sheet flow to these major drainages or to secondary drainages, which all ultimately drain into the Pacific Ocean.

Groundwater

In the geotech Affected Area, based on Caltrans as-built log of test boring sheets, groundwater levels varied from 5 feet bgs in the 1950s at I-710 and the Los Angeles River, 40 feet bgs in the 1980s at I-105 and the Union Pacific Railroad crossing, and 20 feet bgs in the 1960s at I-605 and Artesia Boulevard.

Based on experience with the underground excavation projects in the downtown Los Angeles area, such as the Metro Regional Connector, B and D Lines, it is known that substantial amounts of groundwater inflows can be expected locally in alluvial deposits where situated below groundwater. The groundwater levels used during the design of the LPA structures will be based on site-specific geotechnical investigations.

4.9.2.5 Faulting and Seismicity

General Setting

The Southern California region is seismically active because of the influence of several earthquake fault systems resulting from interaction between the Pacific and North American crustal plates. An active fault is defined by the Alquist-Priolo Earthquake Fault Zone Act as a sufficiently active and well-defined fault that has exhibited surface displacement within the last approximately 12,000 years. A potentially active fault is defined by the Alquist-Priolo Earthquake Fault Zone Act as a fault with a history of movement between approximately 12,000 and 1.6 million years ago. Some faults may be active but do not actually rupture the ground surface; these faults are termed blind thrust faults. Hazards associated with active faults include fault-induced ground rupture and ground shaking.

No known active faults capable of ground rupture are mapped within the geotech Affected Area, and the LPA is not located in an Alquist-Priolo Earthquake Fault Zone (CGS 2016a, 2016b, and 2016c). The Puente Hills active blind thrust fault system underlies the geotech Affected Area. This fault system does not extend to the ground surface and is not considered capable of ground rupture during an earthquake. Known active and potentially active faults that are mapped near the geotech Affected Area are summarized in Table 4.9.1 and are described below. Nearby active and potentially active faults are shown on Figure 4.9-2.

Table 4.9.1. Summary of Nearby Active and Potentially Active Faults

Fault Name	Fault Type[1]	Slip Rate[1] (mm/yr)	Maximum Moment Magnitude (M_{max})[1]	Closest Distance to Geotech Affected Area (miles)[2]
Puente Hills Fault – LA Section	Blind Thrust	0.9	6.9	0
Puente Hills Fault – Santa Fe Springs Section	Blind Thrust	0.9	6.6	0.8
Lower Elysian Park Fault	Blind Thrust	0.1	6.7	1
Los Alamitos Fault	Uncertain	Uncertain	Uncertain	2.6
Puente Hills Fault – Coyote Hills Springs Section	Blind Thrust	0.9	6.8	3.1
Newport-Inglewood-Rose Canyon Fault	Strike-Slip	1.0 to 5.0	7.2	4.9
Upper Elysian Park Fault	Blind Thrust	1.9	6.6	5

Sources: Caltrans 2017; USGS and CGS 2006
Notes:
[1] Caltrans 2017
[2] Blind thrust faults – Caltrans 2017 (distance tabulated is the vertical projection of the blind thrust fault to the surface)
Other faults – USGS and CGS 2006; see Figure 4.9-2.
mm/yr = millimeters per year; M_{max} = maximum moment magnitude

Figure 4.9-2. Fault Location Map

Sources: Prepared by Jacobs in 2023 (based on information from Caltrans 2017; USGS and CGS 2006)
Note: Fault locations are approximate. A Historic fault is a fault that has ruptured in the last 150 years. A Holocene-Latest Pleistocene fault is a fault that has ruptured in the last 15,000 years. A Late Quaternary fault is a fault that has ruptured in the last 130,000 years.

Nearby Active Faults

Surface Faults

The closest active faults capable of ground rupture near the geotech Affected Area are the Raymond, Hollywood, and Newport-Inglewood Faults. As shown on Figure 4.9-2, these faults do not cross the geotech Affected Area.

One potentially active fault is located near the geotech Affected Area, the Los Alamitos Fault, which is mapped approximately 2.6 miles southwest of the geotech Affected Area in the vicinity of the San Gabriel River (USGS and CGS 2006). The exact location, slip rate, and potential earthquake magnitude have not been established specifically for the Los Alamitos Fault as it is a relatively new fault that is currently being studied. Yeats and Verdugo (2010) theorize that the Los Alamitos Fault is related to the LA Segment of the Puente Hills Blind Thrust Fault (PHBT) and the Newport-Inglewood Fault Zone, which is mapped farther southwest from the Los Alamitos Fault, as shown on Figure 4.9-2. The Southern California Earthquake Data Center indicates that the Los Alamitos Fault may be a part of the larger Compton-Los Alamitos Fault, located south of the LPA.

Blind Thrust Faults

The geotech Affected Area is underlain by the active PHBT (Shaw and Suppe 1996; Shaw et al. 2002). In addition, the Lower Elysian Park Blind Thrust Fault (EPBT) is mapped 1 mile north of the geotech Affected Area. The PHBT is not included in an Alquist-Priolo Earthquake Fault Zone and is not considered capable of ground rupture. The projection of the PHBT Los Angeles Section to the ground surface intersects the geotech Affected Area for the LPA in the general vicinity of Florence Avenue (Bergen et al. 2017 and Rollins et al., 2018). The PHBT is a deep feature and direct evidence for surface expression (deformation) has not been noted for the PHBT in the Los Angeles Basin. As an example, the 1987 Whittier Narrows Earthquake occurred on the PHBT, and rupture of the PHBT did not break the ground surface (Hauksson et. al. 1988). The PHBT fault does not penetrate Quaternary-aged sediments in the LA Basin; the fault tip is buried by the sediment, which is very broadly folded as a result of the fault (Rollins et al. 2018).

The EPBT and PHBT are considered in the seismic (ground shaking) design for the LPA. These faults and all other known active faults in the region are considered when developing the parameters that will be used during design of the project structures (see Section 4.9.1.1 for details on the required design criteria).

4.9.2.6 Seismic Hazards

Seismic Shaking

The geotech Affected Area is located within the seismically active region of Southern California and may be subject to seismic ground shaking over time. During an earthquake, seismic waves are produced that extend in all directions from the fault rupture. Seismic waves can produce strong ground shaking that is typically strongest near the fault and attenuates as waves move away from the source. The severity of ground shaking is a function of the magnitude of the fault rupture; the distance from the fault to the geotech Affected Area; and the type, thickness, and condition of the underlying geologic materials in an area. Areas underlain by unconsolidated recent alluvium or fill (such as those anticipated in the geotech Affected Area) may amplify the strength and duration of strong ground motion. Significant seismic shaking can result in structural damage and potentially

structural collapse. Preliminary seismic analysis was conducted for the geotech Affected Area using the USGS seismic design maps (American Society of Civil Engineers 2023). These maps consider the effects of a potential earthquake on all the known faults in the region.

Considering the conceptual level of the LPA, the MDE (see Section 4.9.1.1) is used to provide a general frame of reference for the ground accelerations (the severity of ground shaking) that will be used in the design of the LPA. USGS parameter PGA_M is the peak ground acceleration (PGA) corrected for site effects (i.e., subsurface conditions). The PGA is an estimate of the maximum ground shaking a site can experience over a specified period of time. The period of time considered is termed the average return period. The average return period is dictated by the MRDC, as discussed in Section 4.9.1.1. Based on available subsurface data from historic borings, soils within the upper 100 feet of the geotech Affected Area can be generally classified as Site Class D for this conceptual level of study. Using the 2017 USGS Seismic Design Maps, PGA_M varies along the geotech Affected Area, ranging from 0.82g (g = acceleration due to gravity) near the northern end (near Slauson Avenue) to 0.73g near the southern end (near South Street). The actual PGA that will be used during design of the LPA structures will be developed as the design progresses and will use the Site Class developed as a result of the geotechnical field investigation that will be performed for the Project.

Liquefaction

Soil liquefaction occurs in the upper 50 to 75 feet bgs when saturated, loose soils lose their strength because of excess pore water pressure caused by earthquake ground shaking. The space between the soil particles is completely filled with water, which exerts pressure on the soil particles, thereby influencing how tightly the soil particles are pressed together. Prior to an earthquake, the water pressure is static depending on the depth below the groundwater table; however, the shaking caused by an earthquake can increase the pore water pressure to a point where the soil loses strength and ground deformation can occur.

The primary factors affecting the possibility of liquefaction in a soil deposit are the intensity and duration of the earthquake shaking, the soil type, the relative density of the soil, the pressures of material above the soil, and the depth to groundwater. The types of soils most susceptible to liquefaction are clean, loose, uniformly graded, fine-grained sands; non-plastic silts that are saturated; and silty sands. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support structures is reduced. The potential impacts of liquefaction may include settlement of the ground surface, additional forces pushing down on foundation piles as a result of soil settlement above the liquefied layers (downdrag), lateral spreading (similar to a landslide), and reduction of the shear strength of the liquefied soil, resulting in reduced load-carrying capacity. Liquefied soils can also exert additional dynamic pressures on retaining walls, which can cause them to tilt or slide.

Liquefaction-induced ground failure has historically been a major cause of earthquake damage in Southern California. As shown on Figure 4.9-3, the alignment from the Pacific/Randolph Station south will be located in a Liquefaction Zone of Required Investigation (CGS 2016a, 2016b, 2016c). The alignment from the Pacific/Randolph Station west will not be situated in a Liquefaction Zone of Required Investigation. Liquefaction Zones of Required Investigation are areas that have historically experienced liquefaction, or areas where conditions favorable to liquefaction exist, as described above. The Seismic Hazards Mapping Act requires a detailed liquefaction evaluation when improvements are proposed within a CGS-delineated Zone of Required Investigation.

Figure 4.9-3. Seismic Hazard Zones Map

Sources: Prepared by Jacobs in 2023 (based on information from CGS 2016a, 2016b, 2016c)

Seismically Induced Landslides

The potential for seismically induced landslides (landslides that are triggered by an earthquake) depends on the steepness of the slope, strength and structure of the soil/rock, groundwater depth and extent, and level of ground shaking. The geotech Affected Area is relatively flat and no significant slopes are present. The geotech Affected Area is not located in an Earthquake-induced Landslide Zone of Required Investigation (CGS 2016a, 2016b, 2016c).

Seismically Induced Settlement

Loose, unsaturated granular soils are susceptible to settlement during an earthquake as the earthquake shaking causes the soil grains to rearrange and densify. This settlement can result in structural distress as the ground settles. Seismically induced settlement occurs primarily within loose to moderately dense sandy soils due to volume reduction during or shortly after an earthquake event. The artificial fill soils present along the alignment are expected to be undocumented and could include these loose soils. In addition, a portion of the alluvial soils along the alignment is anticipated to be loose to medium dense. Within the entire geotech Affected Area, unsaturated (above the groundwater table), undocumented fill soils and granular alluvial soils in the upper 50 to 75 feet bgs are potentially susceptible to seismically induced settlement.

Seismically Induced Inundation

Seismically induced inundation can occur when an earthquake causes catastrophic failure of a water-retaining structure such as a reservoir, dam, or levee, and subsequent flooding occurs due to the release of water from the structure. Based on a review of state inundation maps, floodwaters resulting from dam inundation are not expected to affect the LPA. The LPA alignment will be outside of the dam inundation areas identified by the California Dam Breach Inundation Maps produced by the California Department of Water Resources (DWR).

Tsunamis and Seiches

Tsunamis are waves typically generated offshore or within large, open bodies of water, primarily during an earthquake that occurs underwater, or by an underwater landslide. Seiches are waves generated within a large, closed body of water and can also be caused by an earthquake that occurs underwater, by an underwater landslide, or by ground shaking as a result of more distant earthquakes. At its closest point to the LPA, the Pacific Ocean is more than 8 miles to the southwest. There are no closed bodies of water within or adjacent to the geotech Affected Area. Based on the distance between the geotech Affected Area and large bodies of water, the risk for tsunami or seiche in the geotech Affected Area is negligible.

4.9.2.7 Non-seismic Hazards

Potential non-seismic geologic hazards may exist within the geotech Affected Area, as summarized in the following subsections.

Slope Stability

The stability of a slope depends on the inclination, geology and geologic structure, soil and rock strength, and ground and surface water conditions within the slope. The geotech Affected Area is relatively flat and no significant slopes are present.

Expansive Soils

Expansive soils are clay-rich soils that swell and shrink with wetting and drying. The shrink-swell capacity of expansive soils can result in differential movement below or adjacent to a structure. This differential movement can result in significant damage to pavements, as well as foundations and associated structures. Clay-rich soils may exist locally within alluvial soils present in the geotech Affected Area.

Ground Settlement and Collapsible Soils

Near the surface, ground settlement can occur when new loads are added to soil, or when a change in water levels results in a decrease in pore water pressures within compressible soils. Collapsible soils consist predominantly of sand- and silt-size particles arranged in a loose "honeycomb" structure. This loose structure is held together by small amounts of water softening cementing agents, such as clay or calcium carbonate. When the soil becomes wet, these cementing agents soften and the honeycomb structure collapses and generates ground settlement. The entire geotech Affected Area is underlain by alluvial soils, as shown on Figure 4.9-1. The alluvial soils may be prone to collapse/settlement, which can result in differential movement beneath foundations, potentially causing structural distress.

Regional Subsidence

Regional subsidence results from the withdrawal of groundwater and/or hydrocarbons from the subsurface. DWR (2014) estimated the potential for future land subsidence within the geotech Affected Area to be low because groundwater withdrawal is restricted and managed, and, where performed, is compensated for by reinjection of water in volumes similar to what is withdrawn. Regional subsidence is not considered to be a significant hazard in the geotech Affected Area.

Naturally Occurring Oil and Gas

Naturally occurring oil and gas are not considered a major hazard in the geotech Affected Area. The naturally occurring subterranean methane hazard recognized in parts of the City of LA (City of Los Angeles 2004) has not been recognized in the geotech Affected Area. Although not anticipated, if subsurface gases were to be encountered during excavations for the LPA viaduct foundations or other support structures, this could pose a fire/explosion hazard during construction. As detailed in Section 4.10.2.5 of the Hazards and Hazardous Materials Section, one reportedly abandoned oil/gas well is known to exist in the geotech Affected Area. Oil and gas wells have not been identified in the geotech Affected Area at the location of the design option or MSF.

4.9.2.8 Mineral Resources

The geotech Affected Area is situated atop alluvial soils, some of which could likely be used as construction aggregate. However, considering the highly urbanized nature of the geotech Affected Area, mining of these materials is not economically viable; therefore, there will be no loss of viable mineral resources.

4.9.3 Environmental Consequences/Environmental Impacts

This section presents the environmental impacts and consequences of operation of the LPA as they relate to geology, soils, and seismicity. The following comparative discussion is based on the existing conditions described in Section 4.9.2.

4.9.3.1 No Build Alternative

Under the No Build Alternative, regional and local projects would continue to be built, with the exception of the LPA. These projects would be designed and operated to established standards, and adherence to these criteria and standards would minimize geologic and geotechnical-related impacts and avoid adverse effects.

4.9.3.2 Locally Preferred Alternative

Seismic Shaking and Fault-induced Ground Rupture

As discussed in Section 4.9.2.5, no known active faults capable of ground rupture are mapped within the geotech Affected Area, and the LPA alignment is not located in an Alquist-Priolo Earthquake Fault Zone, in accordance with Division of Mines and Geology Special Publication 42 (CGS 2018, 2016a, 2016b, 2016c). As shown on Figure 4.9-2, the closest active faults considered capable of ground rupture near the geotech Affected Area are the Raymond Fault, approximately 4.5 miles north of the geotech Affected Area, and the Hollywood and Newport-Inglewood Faults; neither of these faults cross the geotech Affected Area. As a result, there is no potential for ground rupture from known active faulting for the LPA.

Because the geotech Affected Area is within the seismically active region of Southern California, operation of the LPA could subject people and structures to moderate-to-strong seismic ground shaking, which could result in human injury or death, or damage to structures. Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1, will include development of site-specific design parameters to account for seismic ground shaking. The intensity of ground shaking at a given location depends primarily upon the earthquake magnitude, the distance from the source, and the site response characteristics. As indicated in Section 4.9.2.6, the conceptual PGA varies along the geotech Affected Area, ranging from 0.82g near the northern end (near Slauson Avenue) to 0.73g near the southern end (near South Street) for the MDE. The estimated levels of ground shaking are integral parameters considered during the geotechnical and structural designs of the LPA.

As mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]), the LPA will be designed in accordance with the MRDC design standards (or equivalent), as discussed in Section 4.9.1.1. Structures included with the LPA will be designed to perform in accordance with the MDE and ODE thresholds indicated in Section 4.9.1.1. As also described in Section 4.9.1.1, the design criteria (MRDC, Caltrans Seismic Design Criteria, or the LA County Building Code/CBC, or equivalent) dictate the average return period that will be used in the design, which is directly correlated to the predicted intensity of shaking that a project could experience (the longer the return period, the greater intensity). Above-grade and at-grade structures will be designed and will perform in accordance with the thresholds for seismicity indicated in Section 4.9.1.1. By implementing the mandatory design requirements indicated in Section 4.9.1.1, structures included as part of the LPA will be designed and constructed to withstand the estimated seismic ground shaking and resulting ground loads and deformations (per MRDC requirements or equivalent). Under NEPA, impacts from the LPA will be minimized; adverse effects will be avoided; and no mitigation measures will be required.

Liquefaction/Seismically Induced Settlement

As discussed in Section 4.9.2.6 and shown on Figure 4.9-3, the LPA alignment from the Pacific/Randolph Station south is located in a Liquefaction Zone of Required Investigation. The alignment from the Pacific/Randolph Station west is not in a Liquefaction Zone of Required Investigation. Sites within a Liquefaction Zone of Required Investigation have historically experienced liquefaction or have conditions favorable for liquefaction. In addition, the alluvial soils above the groundwater table within the geotech Affected Area are susceptible to seismically induced settlement. As such, operation of the LPA could subject people and structures to the effects of liquefaction or seismically induced settlement, which could result in human injury or death, or damage to structures.

Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1 requires that the LPA be designed in accordance with design standards, including standards specific to liquefaction and seismic settlement, such as the MRDC Section 5, Structural; Metro's Supplemental Seismic Design Criteria (2017g); and the California Seismic Hazards Mapping Act. These design standards (included in GEO PM-1) dictate that during design, a geotechnical investigation will be conducted for the LPA. The investigation will also be in accordance with Metro's comprehensive geologic/geotechnical field investigation program that is currently being developed (Metro 2020c) and will include a detailed evaluation of these hazards. The design-level geotechnical investigations will provide information pertaining to the depths and areal extents of liquefaction and an estimate of the anticipated ground deformation associated with liquefaction, lateral spread, and seismically induced settlement.

During the design process, if it is determined that these hazards could result in an unacceptable soil or structural response (depending on the type of structure), the following ground improvements could be implemented consistent with the design standards provided in Section 4.9.1.1: stone columns, jet grouting, cement deep-soil mixing, and compaction grouting. Such ground improvements will reduce the potential for deformation to acceptable levels (depending on the type of structure). In lieu of ground improvements, structures and foundations will be designed to tolerate the estimated displacement. Structures included with the LPA will be designed to perform in accordance with the MDE and ODE thresholds indicated in Section 4.9.1.1.

Design plans for the LPA will incorporate the design requirements mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]) and described in Section 4.9.1.1. Under NEPA, implementation of these mandatory design requirements will minimize impacts from the LPA; adverse effects will be avoided; and mitigation will not be required.

Seismically Induced Inundation

Seismically induced inundation can occur when an earthquake causes catastrophic failure of a water-retaining structure, such as a reservoir, dam, or levee, and subsequent flooding occurs from the release of water from the structure. Based on review of state inundation maps, floodwaters resulting from dam inundation are not expected to impact the LPA. The geotech Affected Area is outside of the dam inundation areas identified by the California Dam Breach Inundation Maps produced by the California DWR (2023). However, if seismically induced inundation were to impact the LPA, the inundation would be short-lived, and the water would be drained by the existing drainage system and future drainage improvements. As part of the LPA, modifications to local storm drain systems will be required to discharge runoff from the project alignment. New drainage pipes under at-grade

track will direct stormwater to earthen or concrete drainage swales running parallel to the track, which will discharge to the existing local stormwater infrastructure. Drainage systems within the portions of elevated track will similarly collect and discharge stormwater. Therefore, under NEPA, impacts on the LPA will be minimized; adverse effects will be avoided; and mitigation will not be required.

Expansive Soils

As discussed in Section 4.9.2.7, clay-rich soils may exist locally within the alluvial soils present in the geotech Affected Area. The placement of structures on expansive soil could result in structural distress. As such, operation of the above-grade and at-grade structures associated with the LPA could subject people and structures to the effects of expansive soils, which could result in damage to structures.

As part of Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1, the LPA will be designed and constructed in accordance with the recommendations to be included in the detailed geotechnical design report. Expansive soil remediation could include soil removal and replacement, chemical treatment, or structural enhancements. Therefore, under NEPA, impacts from the LPA related to expansive soils will be minimized; adverse effects will be avoided; and mitigation will not be required.

Ground Settlement and Collapsible Soils

As discussed in Section 4.9.2.7, alluvial soils within the geotech Affected Area may be prone to collapse or settlement, which can result in differential movement beneath foundations potentially causing distress to above-grade and at-grade structures. As such, operation of the above-grade and at-grade structures associated with the LPA could subject people and structures to the effects of ground settlement, which could result in damage to structures.

Detrimental ground settlement from new structures or earth loads is typically alleviated by removal and replacement of the settlement-prone or collapse-prone soils. Implementation of ground improvement methods (similar to those indicated for liquefaction) and structural support systems can also minimize the potential for impacts related to collapse or settlement.

As part of Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1, the LPA will be designed in accordance with the recommendations to be included in the detailed geotechnical advance design report. Recommendations specific to detrimental ground settlement from new structures or earth loads will be provided, based on site-specific geotechnical investigation. Therefore, under NEPA, impacts from the LPA related to settlement-prone or collapse-prone soils will be minimized; adverse effects will be avoided; and mitigation will not be required.

Naturally Occurring Oil and Gas

As discussed in Section 4.19.3.9, (Construction-related Geotechnical, Subsurface, and Seismic Impacts), foundation excavations for LPA viaducts or other support structures may encounter hazardous gases resulting in a construction hazard. The LPA alignment is not in a Methane Hazard Zone, and there are no oil or gas fields in the geotech Affected Area. Therefore, under NEPA, naturally occurring oil and gas hazards are not anticipated to be a concern during operation of the LPA; there will be no adverse effects; and mitigation will not be required.

4.9.3.3 Design Option: Close 186th Street

The design option would close the 186th Street at-grade crossing and introduce an at-grade crossing at 187th Street. 186th and 187th Streets are roughly 1,000 feet apart and are underlain by the same alluvial soil deposits as the overall LPA. The risks and effects related to seismic shaking and fault-induced ground rupture, liquefaction/seismically induced settlement and inundation, expansive soils, ground settlement, collapsible soils, and naturally occurring oil and gas at the design option site would be substantially similar to those effects identified for the LPA along other portions of the alignment and discussed in Section 4.9.3.2.

As part of Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1, the LPA, including with or without the design option, would be designed in accordance with the recommendations to be included in the detailed geotechnical design report. Recommendations addressing seismic shaking and fault-induced ground rupture, liquefaction/seismically induced settlement and inundation, expansive soils, ground settlement, collapsible soils, and naturally occurring oil and gas would be provided based on the site-specific geotechnical investigation. Therefore, under NEPA, the design option site impacts related to these hazards would be minimized; adverse effects would be avoided; and mitigation would not be required.

4.9.3.4 Maintenance and Storage Facility

In addition to train storage tracks, which are similar to those included as part of the LPA, the MSF will include a number of building structures. As with the LPA, the MSF will be subject to the prescribed standards, requirements, and guidance related to the design of the proposed building structures, including the requirements of the LA County Building Code, or equivalent. The MSF and the LPA have substantially similar geologic settings and potential geotechnical operational impacts and effect determinations. The risks and effects related to seismic shaking and ground rupture, liquefaction/seismically induced settlement and inundation, expansive soils, ground settlement, collapsible soils and naturally occurring oil and gas at the MSF site will be substantially similar to those effects identified for the LPA.

As part of Project Measure GEO PM-1 (Geotechnical Design [Operation]), described in Section 4.9.4.1, the LPA, including the MSF, would be designed in accordance with the recommendations to be included in the detailed geotechnical design report. Recommendations addressing seismic shaking and ground rupture, liquefaction/seismically induced settlement and inundation, expansive soils, ground settlement, collapsible soils, and naturally occurring oil and gas will be provided based on the site-specific geotechnical investigation. Therefore, under NEPA, the MSF impacts related to these hazards will be minimized; adverse effects will be avoided; and mitigation will not be required.

4.9.3.5 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three USACE facilities: the concrete-lined Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel. The new bridge crossings will result in footprints in the existing facilities that are similar to the current footprints. Similar to the existing river crossing bridge foundations, the new bridge foundations will connect to the bridge columns through the channel bottom, resulting in a fully concrete-lined channel. At each of the river crossings, the new and existing structures are underlain by alluvial soil deposits that are common to the entire geotech Affected Area (Unit Qya_2 on Figure 4.9-1). Accordingly, the impact determinations presented in Section 4.9.3.2 for the LPA are applicable to the three USACE facility crossings. In accordance with GEO PM 1 (Geotechnical Design

[Operation]), described in Section 4.9.1.1, site-specific geotechnical exploration will be performed to characterize the subsurface conditions for the LPA at the river crossings. With implementation of Project Measure GEO PM-1 (Geotechnical Design [Operation]), the geology and soils below the concrete-lined channels and adjacent areas will not be adversely affected by operation of the LPA. Therefore, the LPA, from a geology and soils perspective, will not impact the USACE facilities during operation. Under NEPA, with implementation of the measures indicated in Section 4.9.4, no adverse effects will occur during operation of the LPA crossings of the USACE facilities.

4.9.4 Project Measures and Mitigation Measures

As discussed in Section 4.9.3.2, potential impacts associated with the design and operation of the LPA, design option (if selected), and MSF will be minimized through compliance with established design standards discussed in Section 4.9.1.1 and implemented through Project Measure GEO PM-1 (Geotechnical Design [Operation]).

4.9.4.1 Project Measures

Metro will verify that the following project measure (developed in accordance with the design requirements summarized in Section 4.9.1) is implemented to reduce geologic, soil, and seismicity-related impacts. The project measure is required and is considered part of the LPA.

GEO PM-1: Geotechnical Design (Operation)

A number of geotechnical design reports are required for the Project, as detailed in the MRDC, Section 5.6, Geotechnical Investigations, Analysis and Design. Section 5.6 of the MRDC provides detailed requirements for planning and conducting a geotechnical investigation, geotechnical design methodologies, and reporting. In addition, and as referenced in the MRDC, Caltrans and the County of Los Angeles Building Code have their own design requirements for bridges and aerial structures (Caltrans) and building structures (County of Los Angeles) that are required.

In accordance with the MRDC, geotechnical report recommendations will be incorporated into the project plans and specifications. These recommendations will be a product of the LPA design process and will address the subsurface hazards identified in this report. Without these report recommendations, the project plans and specifications will not be approved, and the LPA will not be allowed to advance into the final design stage or ultimately into construction. As a part of the Project, Metro has developed a comprehensive geotechnical field investigation and laboratory testing program (Metro 2020c) and is in the process of implementing the program. Findings from that program will be used to verify the information presented in the Final EIS/EIR.

4.9.4.2 Mitigation Measures

As required by the project measure, hazards related to geology and soils will be investigated during design-level geotechnical studies that will be performed for the LPA. These studies will quantify the hazards and allow for appropriate geotechnical design recommendations to be incorporated into the plans for the LPA. Therefore, operation of the LPA will not be significantly affected by potential geologic hazards, and geology and soils-related hazard mitigation measures are not required.

4.9.5 California Environmental Quality Act Determination

To satisfy CEQA requirements, geology and soils operational impacts have been analyzed in accordance with Appendix G of the *CEQA Guidelines*. The CEQA determinations presented below are based on the existing conditions described in Section 4.9.2 of this Final EIS/EIR and the environmental impacts analysis presented in Section 4.9.3.

CEQA is only concerned with the effects of a project on the environment, not the effects of the environment on the Project. For informational purposes, however, the following subsections analyze the potential impacts of developing the LPA within the seismically active region of Southern California. The following analysis also considers whether the LPA might exacerbate geological, seismic, and related hazards (see state CEQA Guidelines, CCR Title 14 §15126.2(a)). The analysis is based on the questions presented in Appendix G of the *CEQA Guidelines*. Would the project:

4.9.5.1 Threshold GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Project Alternative

Under the No Project Alternative, the geotech Affected Area would remain unchanged. There would be no impact on geology (including faulting) and soils in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and no mitigation measures would be required.

Locally Preferred Alternative

The LPA is not underlain by a known active fault capable of ground rupture and is not located within an Earthquake Fault Zone established by the State of California Alquist-Priolo Earthquake Fault Zoning Act (CGS Special Publication 42). As such, operation of the LPA will not result in potentially significant impacts, including the risk of loss, injury, or death, from ground rupture of a known earthquake fault. There will be no impacts related to ground rupture along a known active earthquake fault, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the proposed improvements of the LPA with the design option are substantially similar to those included as part of the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. There will be no impacts related to ground rupture along a known active earthquake fault, and mitigation will not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. There will be no impacts, and no mitigation measures will be required.

4.9.5.2 Threshold GEO-2: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

No Project Alternative

Under the No Project Alternative, there would be no impact related to strong seismic ground shaking in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and no mitigation measures would be required.

Locally Preferred Alternative

As discussed in Section 4.9.3.2, the LPA could be exposed to strong seismic ground shaking. However, as discussed in Section 4.9.1 and as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), the LPA will be designed to accommodate the anticipated levels of ground shaking associated with a design seismic event, and structures will perform in accordance with the MRDC MDE and ODE thresholds.

The potential to experience substantial seismic ground shaking is a common hazard for every project in Southern California, and the hazard cannot be avoided. Structures (aerial, at-grade, and underground) have been and continue to be successfully designed and constructed based on mandatory design criteria. Considering the seismic design requirements mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]), operation of the LPA will not result in substantial adverse effects, including the risk of loss, injury, or death, related to seismic shaking.

Operation of the LPA will not have an adverse effect on the geologic environment. The design features being considered are not uncommon for the Los Angeles region and will not exacerbate existing geologic conditions related to seismic shaking. Therefore, impacts related to seismic shaking will be less than significant with design and construction performed in accordance with applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]), and no mitigation measures will be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the proposed improvements of the LPA with the design option are substantially similar to those included as part of the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. Impacts related to seismic shaking would be less than significant with design and construction performed per applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation would not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to seismic shaking will be less than significant with design and construction performed in accordance with applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation will not be required.

4.9.5.3 Threshold GEO-3: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

No Project Alternative

Under the No Project Alternative, there would be no impact on geology and soils (including seismic-related ground failure and liquefaction potential) in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and no mitigation measures would be required.

Locally Preferred Alternative

As discussed in Section 4.9.3.2, the LPA could be exposed to seismic-related ground failure, including liquefaction, lateral spreading, and seismically induced settlement. However, as discussed in Section 4.9.1 and as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), the LPA will be designed to accommodate the anticipated levels of deformation associated with a design seismic event, and structures will perform in accordance with the MRDC MDE and ODE thresholds discussed in Section 4.9.1.

The seismic-related ground failure hazard is a well-known hazard in Southern California and structures (aerial, at-grade, and underground) have been and continue to be successfully designed and constructed based on the referenced mandatory design criteria. Where warranted by site-specific subsurface conditions identified during the geotechnical investigations for the LPA, design enhancements (e.g., ground improvements or structural enhancements) can reduce potentially significant impacts to acceptable limits for the structure. Considering the seismic design requirements mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]), operation of the LPA will not result in substantial adverse effects, including the risk of loss, injury, or death related to seismic-related ground failure, including liquefaction. Operation of the LPA will not have an adverse effect on the geologic environment. The design features being considered are not uncommon for the Los Angeles region and will not exacerbate existing geologic conditions related to seismic-related ground failure. Therefore, impacts will be less than significant with design and construction performed in accordance with applicable design criteria, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the LPA with the design option is substantially similar to the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. Impacts related to seismic-related ground failure would be less than significant with design and operation performed in accordance with applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation would not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to seismic-related ground failure will be less than significant with design and operation performed in accordance with applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]) [Section 4.9.4.1]), and no mitigation measures will be required.

4.9.5.4 Threshold GEO-4: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

No Project Alternative

Under the No Project Alternative, there would be no impact on geology (including landslides) and soils in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The landscape within the geotech Affected Area is relatively flat, and no landslides have been mapped in the vicinity of the geotech Affected Area. Natural landslides are not considered a hazard to the LPA. Operation of the LPA will not have a potentially significant impact on the geologic environment. The design features being considered are not uncommon for the Los Angeles region and will not exacerbate existing geologic conditions. Therefore, with design and operation performed per applicable design criteria as mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation]), impacts will be less than significant, and mitigation will not be required. Temporary excavations, which could introduce the potential for construction-related landslides, are discussed in Section 4.19.3.9 (Geology and Soils Construction Impacts).

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the proposed improvements of the LPA with the design option are substantially similar to those included as part of the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. Impacts related to landslides would be less than significant with design and construction performed per the applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]). Mitigation would not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to landslides will be less than significant with design and construction performed per the applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]). Mitigation will not be required.

4.9.5.5 Threshold GEO-5: Result in substantial soil erosion or the loss of topsoil?

No Project Alternative

Under the No Project Alternative, there would be no impact on geology and soils (including loss and erosion) in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA is located in an urban setting and the topsoil layer in most of the geotech Affected Area has been disturbed or concealed by previous human activities. Potential impacts could involve the loss of topsoil as an agricultural resource and loss of an erosional barrier. Post-construction operation of the LPA will not result in ground-surface disturbance, site clearance, excavation, or

grading that would otherwise create the potential for soil erosion to occur. The LPA will operate on designed and constructed facilities implemented in accordance with state and local guidelines regarding erosion. Additionally, a required Stormwater Pollution Prevention Plan and Water Quality Control Plan will be in place as part of operation, among other regulatory requirements, as detailed in Section 4.11.1.1 in the Water Resources Section.

The geotech Affected Area is not used for agricultural purposes and the topsoil layer has already been disturbed or concealed by previous human activities. Considering the design requirements associated with erosion and mandatory best management practices detailed in Section 4.11.3.1 in the Water Resources Section, operation of the LPA will not result in substantial soil erosion or loss of topsoil. Therefore, impacts will be less than significant with design and construction performed in accordance with applicable design criteria, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the LPA with the design option is substantially similar to the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. The LPA with the design option would not result in substantial soil erosion or loss of topsoil, and impacts would be less than significant with design and operation performed in accordance with applicable design criteria, including those identified in Section 4.11.1.1 in the Water Resources Section; mitigation would not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to substantial soil erosion or loss of topsoil will be less than significant with design and operation performed in accordance with applicable design criteria, including those identified in Section 4.11.1.1 in the Water Resources Section, and mitigation will not be required.

4.9.5.6 Threshold GEO-6: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

No Project Alternative

Under the No Project Alternative, there would be no LPA impact on geology and soils that would affect the potential for these hazards in the geotech Affected Area. Therefore, operational-related impacts for the No Project Alternative would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

Operational analysis and impact determinations for the LPA related to liquefaction, lateral spreading, and landslides are provided in Section 4.9.3.2. See Section 4.9.5.3 regarding the CEQA determination for ground failure (including liquefaction and lateral spreading) and Section 4.9.5.4 for the landslide hazard determination.

The geotech Affected Area may be prone to collapse or settlement, which can result in differential movement beneath foundations potentially causing distress to above-grade and at-grade structures. As such, operation of the above-grade and at-grade structures associated with the LPA could subject people and structures to the effects of ground settlement, which could result in damage to structures.

Detrimental ground settlement from new structures or earth loads is typically alleviated by removal and replacement of the settlement/collapse-prone soils. Additionally, implementation of ground improvement methods (similar to those indicated for liquefaction) and structural support systems will minimize the potential for impacts related to collapse or settlement. As part of Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), the LPA will be designed in accordance with the mandatory design requirements of the MRDC or equivalent, including design criteria identified in the geotechnical design reports from site-specific geotechnical investigations. The geotechnical design reports' recommendations will specifically address detrimental ground settlement from new LPA structures or earth loads. Based on the analysis presented above, operation of the LPA will not result in potentially significant impacts related to the risk of settlement or collapsible soil. Therefore, impacts related to settlement or collapsible soil will be less than significant with design and construction performed in accordance with applicable design criteria, and no mitigation measures will be required.

Regional subsidence results from the withdrawal of groundwater and/or hydrocarbons from the subsurface. The California DWR (2014) estimated the potential for future land subsidence within the geotech Affected Area to be low because groundwater withdrawal is restricted and managed, and, where performed, it is compensated for by reinjection of water in volumes similar to what is withdrawn. Potential impacts related to regional subsidence will be a less than significant hazard to the LPA, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the LPA with the design option is substantially similar to the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. Impacts related to collapse, settlement, and subsidence would be less than significant with design and operation performed in accordance with applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation would not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to collapse, settlement, and subsidence will be less than significant with design and operation performed in accordance with applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1), and mitigation will not be required.

4.9.5.7 Threshold GEO-7: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Project Alternative

Under the No Project Alternative, there would be no LPA impact on geology and soils (including expansive soil potential) in the geotech Affected Area. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

As discussed in Section 4.9.3.2, clay-rich soils may exist locally within alluvial soils present in the geotech Affected Area. The placement of structures on expansive soil could result in structural distress. Therefore, operation of the at-grade and above-grade structures associated with the LPA could subject people and structures to the effects of expansive soils, which could damage structures.

As mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), structures to be constructed as part of the LPA will be designed and constructed in accordance with MRDC and LA County Building Code standards (the Uniform Building Code is no longer applicable) or equivalent (see Section 4.9.1) specific to expansive soils. These required design standards will yield structures that will tolerate the effects of expansive soil or the expansive soils will be remediated. Expansive soil remediation could include soil removal and replacement, chemical treatment, or structural enhancements.

As part of Project Measure GEO PM-1 (Geotechnical Design [Operation]), the LPA will be designed in accordance with the recommendations to be included in the detailed geotechnical design reports. Considering the mandatory design requirements associated with expansive soils, operation of the LPA will not result in significant impacts, including the risk of loss, injury, or death related to expansive soils. Therefore, impacts related to expansive soils will be less than significant with design and construction performed in accordance with applicable design criteria, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located within the geotech Affected Area, and the LPA with the design option is substantially similar to the LPA without the design option. Therefore, the determination provided above for the LPA without the design option is applicable to the LPA with the design option. Impacts related to expansive soils will be less than significant with design and operation performed in accordance with applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation will not be required.

Maintenance and Storage Facility

The MSF is located within the geotech Affected Area, and the proposed improvements of the MSF are substantially similar to those included as part of the LPA. Therefore, the determination provided above for the LPA is applicable to the MSF. Impacts related to expansive soils will be less than significant with design and operation performed in accordance with applicable design criteria mandated by Project Measure GEO PM-1 (Geotechnical Design [Operation] [Section 4.9.4.1]), and mitigation will not be required.

4.9.5.8 Threshold GEO-8: Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Project Alternative

The geotech Affected Area for the No Project Alternative is in a highly urbanized area served by existing municipal sewage systems. Therefore, the operational-related impacts for the No Project Alternative would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA is located in a highly urbanized area served by existing municipal sewage systems. The use of septic tanks or alternative wastewater systems is not anticipated under the LPA. Therefore, the LPA will not expose people or structures to significant impacts involving the adequacy of soils to support septic tanks or alternative waste disposal systems. No impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

The proposed improvements of the LPA with the design option and LPA without the design option are substantially similar and both are located in a highly urbanized area served by existing municipal sewage systems. The use of septic tanks or alternative wastewater systems is not anticipated for the design option. Therefore, the LPA with the design option would not expose people or structures to significant impacts involving the adequacy of soils to support septic tanks or alternative waste disposal systems. No impacts would occur, and mitigation would not be required.

Maintenance and Storage Facility

The proposed improvements of the MSF and the LPA are substantially similar and both are located in a highly urbanized area served by existing municipal sewage systems. The use of septic tanks or alternative wastewater systems is not anticipated for the MSF. Therefore, the MSF will not expose people or structures to significant impacts involving the adequacy of soils to support septic tanks or alternative waste disposal systems. No impacts will occur, and mitigation will not be required.

4.9.5.9 Threshold GEO-9: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

For determination, see Section 4.14, Paleontological Resources.

4.10 Hazards and Hazardous Materials

This section describes existing hazards and hazardous materials (hazmat) in the Affected Area for hazards and hazmat. This section also summarizes the potential adverse effects under NEPA and significant impacts under CEQA resulting from the introduction of hazardous materials or the mobilization of hazardous materials under the No Build Alternative and operation of the LPA, including the design option and MSF. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Hazardous Materials Impact Analysis Report* (Metro 2024p).

A review of the State of California, Los Angeles County Fire Hazard Severity Zone and CalFire Local Responsibility Area Maps indicates that the Affected Area for hazards and hazmat is located in an urban area not subject to wildland fires. Additionally, there are no

airports located within 4 miles of the LPA. Therefore, wildland fires and airport hazards are not discussed further in this section. Refer to Section 4.18, Safety and Security, of this Final EIS/EIR for an analysis of effects on adopted emergency response plans and emergency evacuation plans from operation of the LPA.

This section has been revised since the Draft EIS/EIR based on the identification of the LPA, inclusive of refinements, and based on comments received on the Draft EIS/EIR. Consistent with the Draft EIS/EIR, the Affected Area for hazards and hazmat, generally encompasses a 200-foot radius surrounding project components. The boundaries of the Affected Area for hazards and hazmat have been updated since the Draft EIS/EIR to encompass the footprint of the LPA including the design option and MSF, inclusive of refinements. Within the updated Affected Area for hazards and hazmat, a similar number of educational facilities, pipelines, and oil and gas wells have been identified as were identified for Alternative 3 in the Draft EIS/EIR, although the specific educational facilities and pipelines have changed slightly as a result of the updated boundaries of the Affected Area for hazards and hazmat. In addition, since circulation of the Draft EIS/EIR, the USEPA provided supplemental groundwater well location information for the three adjacent Superfund sites identified in the Draft EIS/EIR, which has been integrated into this section. The newly identified groundwater wells are located within the Affected Area for hazards and hazmat, and one groundwater well is located in close proximity to the project footprint.

In response to a comment from a stakeholder, this section was also updated to integrate information related to high-pressure natural gas pipelines and hazardous material pipelines in the Affected Area for hazards and hazmat. While none of the newly identified groundwater wells overlap the project footprint, one newly identified hazardous material pipeline overlaps the project footprint at the MSF. Four natural gas pipelines were identified that either cross or trend alongside the project footprint. Additionally, in response to refinements to the LPA, additional liquid hazardous material pipelines were identified in the Affected Area for hazards and hazmat and the project footprint.

The Draft EIS/EIR summarized the use, handling, and transport of hazmat during operation of the Build Alternatives, including at the MSF or if soil disturbance was required for maintenance. This information was clarified and amplified to better explain that maintenance of the LPA could require use, handling, and transport of limited quantities of hazmat along the LPA and at the MSF, including herbicides, cleaners, and degreasers.

The project measures and mitigation measures included or referenced in this section have also been updated since the Draft EIS/EIR. The Draft EIS/EIR indicated that Mitigation Measure GEO-1 (Hazardous Gas [Operations]) would be implemented during operation to reduce potential landfill/soil vapor impacts to transit operators and the public. Mitigation Measure GEO-1 (Hazardous Gas [Operations]) was included in Section 4.9.4.2 (Geotechnical, Subsurface, and Seismic Impacts) of the Draft EIS/EIR but is not included in the corresponding section of this Final EIS/EIR because the LPA does not overlap with any active landfills where methane has been detected, does not include tunnels or underground stations, and does not overlap with oil or gas fields. However, Project Measure HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]), has been updated to indicate that Landfill Gas Accumulation Management Plan will be prepared, if necessary, and will reduce potential impacts associated with methane, if present, from the South Gate Rod and Gun Club by establishing provisions per Metro's contractor specifications for the disturbance of contaminated materials (known and undocumented) and

compliance with federal and/or state guidance. The South Gate Rod and Gun Club was previously identified in the Draft EIS/EIR as having the potential to affect operation of the LPA.

The Draft EIS/EIR also identified a mitigation measure to reduce impacts associated with the use of hazardous materials near educational facilities during operation, Mitigation Measure HAZ-1 (Hazardous Materials and Nearby Educational Facilities [Operation]). However, it has since been determined that the use of extremely hazardous materials in quantities equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety Code will not be used during operation or maintenance of the LPA. Therefore, this mitigation measure has been removed from the Final EIS/EIR.

The impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. No new significant adverse effects or substantially more severe impacts have been identified.

4.10.1 Regulatory Setting and Methodology

4.10.1.1 Regulatory Setting

Hazards and hazardous materials are regulated at the federal, state, and local/regional levels. The following agencies and organizations have published guidelines or requirements for evaluation of subsurface hazardous substances: USEPA, the City and County of Los Angeles, ASTM International, and California Department of Toxic Substances Control (DTSC). Additionally, city and county general plans and emergency response plans that cover the Affected Area for hazards and hazmat include hazardous material policies. A summary of applicable laws and regulations is included below. For a comprehensive discussion of applicable regional and local plans and regulations related to hazards and hazardous materials, refer to Section 3 of the Hazardous Materials Impact Analysis Report.

Federal

The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 et seq.) regulates the identification, generation, transportation, storage, treatment, and disposal of solid and hazardous materials and hazardous wastes through comprehensive “cradle to grave” tracking requirements.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Section 9601 et seq.) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This act established the National Priorities List of contaminated sites and the Superfund cleanup program. CERCLA establishes requirements for abandoned hazardous waste sites and provides for liability of persons responsible for releases of hazardous waste at these sites.

The Superfund Amendments and Reauthorization Act (SARA) amends CERCLA and increases state involvement by requiring Superfund actions to consider state environmental laws and regulations. SARA also established a regulatory program for underground storage tanks (UST) and the Emergency Planning and Community Right-to-Know Act.

The Clean Air Act (42 U.S.C. Section 7401 et seq.) protects the public from exposure to airborne contaminants that are known to be hazardous to human health. Under the Clean Air Act, the USEPA 2019 established National Emissions Standards for Hazardous Air Pollutants, which includes asbestos.

The Clean Water Act (Section 402[p]) (33 U.S.C. Section 1342[p]) regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

The Safe Drinking Water Act (42 U.S.C. Section 300[f] et seq.) regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality.

The Toxic Substances Control Act (15 U.S.C. Section 2601 et seq.) regulates manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. It addresses the production, importation, use, and disposal of specific chemicals, including polychlorinated biphenyls (PCBs), asbestos-containing materials (ACM), and lead-based paint (LBP).

The Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Section 136 and 40 CFR Parts 152.1 to 171) regulates the manufacturing, distribution, sale, and use of pesticides.

The Hazardous Materials Transportation Act (49 U.S.C. Section 5101 et seq. and 49 CFR Parts 101, 106, 107, and 171-180) regulates the transport of hazardous materials by motor vehicles, rail, marine vessels, and aircraft.

The Hazardous Materials Transportation Uniform Safety Act (Public Law 101–615) regulates the safe transport of hazardous materials in intrastate, interstate, and foreign commerce. The statute includes provisions to encourage uniformity between different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

The Occupational Safety and Health Act of 1970 requires training handlers of hazardous materials, notifying employees who work in the vicinity of hazardous materials, acquiring Safety Data Sheets that describe the proper use of hazardous materials, and training employees to remediate any accidental releases of hazardous materials. It also regulates lead and asbestos as it relates to employee safety to reduce potential exposure. Additionally, it requires contractors conducting LBP and ACM surveys and removal to be certified by the U.S. Occupational Safety and Health Administration (OSHA).

U.S. Presidential Executive Order 12088, issued in 1978, requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from federal facilities and activities under control by federal agencies.

State

California's hazardous waste regulations are similar to federal law, but more stringent in their application. Similar to RCRA, the Hazardous Waste Control Law (Cal. Health and Safety Code, Section 25100 et seq.) empowers the DTSC to administer the state's hazardous waste program and implement the federal program in California, including UST regulation. The DTSC also compiles and maintains a list of potentially contaminated sites located throughout the state in accordance with the Cortese Statute (California Government Code, Section 65962.5). While the DTSC has the primary responsibility for enforcement and implementation of hazardous waste control laws in the state, the responsibility is shared with

other agencies, including the SWRCB, the Los Angeles Regional Water Quality Control Board (LARWQCB), and county and city governments.

The Department of Conservation's Geologic Energy Management Division (CalGEM, formerly the Division of Oil, Gas, and Geothermal Resources or DOGGR) is responsible for implementing Section 3208.1 of the PRC. As a result, CalGEM developed the Construction Site Well Review Program to assist local permitting agencies with identifying and reviewing the status of oil/gas wells located near or beneath proposed structures (CalGEM 2020).

Regional and Local

The Affected Area for hazards and hazmat is located within Los Angeles County and extends through portions of the following cities: Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, Artesia, and the unincorporated community of Florence-Firestone. The Los Angeles County Department of Public Works (LACDPW) is a Certified Unified Program Agency (CUPA) and a participating agency to the Los Angeles County CUPA, managed by the Los Angeles County Fire Department, Health Hazardous Materials Division. The LACDPW Environmental Programs Division permits and inspects USTs in the unincorporated areas of Los Angeles County and 77 cities, including Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia. The City of Vernon Health Department and the City of Los Angeles Fire Department manage their own CUPAs for USTs in their jurisdiction.

4.10.1.2 Methodology

Pursuant to NEPA regulations (40 CFR 1500–1508), project effects are evaluated based on the potentially affected environment. The effectiveness of measures to avoid, minimize, and/or mitigate effects is considered in making significance determinations under NEPA.

To satisfy CEQA requirements, hazmat-related impacts are analyzed in accordance with Appendix G of the *CEQA Guidelines*, identified in Section 4.10.5.

The assessment is based on the environmental concerns (or hazardous materials conditions) in the Affected Area for hazards and hazmat and on applicable laws and regulations related to hazards and hazardous materials issues (summarized in Section 4.10.1.1). The term "hazardous materials condition" refers to potential or existing site conditions that may present environmental health and safety concerns during operation of the LPA. For the purpose of the assessment, the Affected Area for hazards and hazmat encompasses a 200-foot radius surrounding the LPA, including the alignment, appurtenant structures (e.g., TPSS units), stations, park-and-ride facilities, the design option, and the MSF. This area is representative of the existing hazards and hazardous materials conditions that have the potential to result in impacts/effects due to implementation of the LPA. Therefore, this area provides an accurate basis for the assessment of the potential for the introduction or mobilization of hazardous materials to result from the LPA.

The California PRC § 21151.4 requires consultation with schools located within 0.25-mile of a project that could reasonably be anticipated to emit hazardous air emissions, or require handling of an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code. This analysis identifies educational facilities within 0.25-mile of the LPA that could be affected during operation. For the purposes of the analysis related to educational facilities, the Affected Area

for hazards and hazmat is 0.25-mile from the LPA (Affected Area for hazards and hazmat [educational facilities]). Similarly, due to the requirements of CCR Title 27, for the purpose of the analysis related to landfills, the Affected Area for hazards and hazmat is also 0.25-mile from the LPA (Affected Area for hazards and hazmat [landfills]).

The methodology for the identification of existing environmental concerns follows portions of ASTM International 1528-14 Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (ASTM 2014) and the Caltrans *Environmental Handbook,* "Chapter 10 – Hazardous Materials, Hazardous Waste, and Contamination" (Caltrans 2014).

Hazardous wastes and substances (materials) are defined by the California Department of Industrial Relations as follows.

A hazardous substance is:

> "any substance designated or listed under A. through D. below, exposure to which results or may result in adverse effects on the health or safety of employees:
>
> A. Any substance defined under Section 103(14) of CERCLA or under Sections 25316 and 25317 of the California Health and Safety Code;
> B. Any biological agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring;
> C. Any substance listed by the U.S. Department of Transportation and regulated as hazardous materials under 49 CFR 172.101 and appendices; and
> D. Hazardous waste as herein defined" (California Department of Industrial Relations [DIR], 2018)."
>
> A hazardous waste is a waste or combination of wastes as defined in:
>
> A. 40 CFR 261.3, or regulated as hazardous waste in California pursuant to Chapter 6.5, Division 20, California Health and Safety Code
> B. Those substances defined as hazardous wastes in 49 CFR 171.8 (DIR 2018)

Hazardous materials most prevalent within urban environments include petroleum products from gasoline and automotive service stations, cleaning solvents from dry cleaning operations, and various other hazardous materials at manufacturing and storage properties. In addition, methane and H_2S gas may be naturally present in the soil.

Known environmental concern sites are properties with known releases of hazardous materials to soil, groundwater, surface water, and/or soil vapor. These releases may be open or closed cases with local, regional, or state agencies such as the LACDPW, the Los Angeles City Fire Department, the LARWQCB, and/or the DTSC. Sites with open or closed releases may have residual contaminants remaining in soil, ground, or surface water, and/or soil vapor. Known environmental concern sites are considered high-risk sites likely requiring hazardous material management and special design features and/or long-term monitoring.

Potential environmental concern sites include properties with known storage, handling, and use of hazardous materials, for example those currently occupied by gasoline service stations, dry cleaning facilities, manufacturing and industrial sites, oil fields/wells, aboveground storage tank sites, and electrical substations. Potential environmental concern sites are considered medium-risk sites that require some environmental testing prior to construction to verify extent and nature of site contamination and possibly hazardous material management during construction; however, long-term monitoring is not expected.

Historical environmental concern sites include properties that may have formerly included storage, handling, and use of hazardous materials. They include properties that may have residual impacts from past uses; however, there is typically limited information available about such properties. Historical environmental concern sites are considered low-risk sites that may require environmental assessment or testing prior to construction and/or may require hazardous material management during construction.

The following are the key steps for identifying potential or existing environmental concerns that may present environmental health and safety concerns in the Affected Area for hazards and hazmat:

- Review regulatory databases: Review of federal, state, local, and tribal environmental database records of known or potentially hazardous waste sites, and sites currently under investigation for environmental violations, in the Affected Area for hazards and hazmat including the DTSC EnviroStor website, SWRCB GeoTracker website, and an environmental database report prepared by Lightbox/Environmental Data Resources (EDR). The database reports identify sites with documented use, storage, or release of hazardous materials or petroleum products (see Appendix C of the Hazardous Materials Impact Analysis Report for a complete list of queried databases and all sites identified within the 0.125-mile search radius of the alignment centerline).
- Review historical environmental records: Review and interpret available historical aerial photographs and Sanborn Fire Insurance Maps for evidence of previous site activities and development that would suggest the potential presence of hazardous substances in the Affected Area for hazards and hazmat.
- Perform site reconnaissance: Perform a windshield site reconnaissance of the Affected Area for hazards and hazmat from public rights-of-way to identify existing land uses and features that appear to have hazardous waste issues or visible indications of contamination.
- Apply ranking criteria: Rank environmental concern sites located in the Affected Area for hazards and hazmat based on its potential to result in adverse effects. Environmental concern sites were categorically ranked (known, potential, and/or historical environmental concern sites) in decreasing order of severity.

4.10.2 Affected Environment and Existing Conditions

4.10.2.1 Environmental Concern Sites Identified in Historical Aerial Photographs and Sanborn Fire Insurance Maps

A review of historical aerial photographs and maps indicate the presence of various commercial and industrial facilities of environmental concern in the Affected Area for hazards and hazmat. These facilities include, but are not limited to, auto repair shops, gasoline service stations, and dry cleaners. Rail lines and spurs that date back as far as 1894

are also present within and adjacent to the Affected Area for hazards and hazmat. Parcels with historical uses of concern were categorized as sites of historical environmental concern in Appendix B of the Hazardous Materials Impact Analysis Report.

4.10.2.2 Environmental Concern Sites Identified in Regulatory Databases

Environmental databases were reviewed to identify environmental concern sites in the Affected Area for hazards and hazmat and to determine if the environmental concern sites are likely to pose a concern for implementation of the LPA. The criteria used to identify environmental concern sites are described in Section 4.10.1.2. The database search identified the following environmental concern sites: historically contaminated properties; businesses that use, generate, or dispose of hazardous materials or petroleum products in their operations; and active contaminated release sites currently under assessment and/or remediation. Identified environmental concern sites are included in Appendix B and Appendix G of the Hazardous Materials Impact Analysis Report.

The total number of environmental concern sites (including known, potential, and historical) located in the Affected Area for hazards and hazmat are listed in Table 4.10.1. Additionally, Figure 4.10-1 and Figure 4.10-2 identify properties with known releases of hazardous materials to soil, groundwater, surface water, and/or soil vapor. These properties are considered high-risk sites that would likely require hazardous material management and special design features and/or long-term monitoring.

Table 4.10.1. Summary of Environmental Concern Sites in the Affected Area for Hazards and Hazmat

Environmental Concern Category	Locally Preferred Alternative	MSF	Design Option	Types of Regulatory Government Agency Listings
Known Environmental Concern	59	0	0	Known Release Sites (confirmed release sites)
Potential Environmental Concern	96	0	0	Potential Release Sites and Large Quantity Generators of Hazardous Materials and Storage Facilities
Historical Environmental Concern	152	3	1[1]	Sites with Historical Use of Hazardous Materials
Total Environmental Concerns	**307**	**3**	**1[1]**	**Known, Potential, and Historical**

Source: Metro 2024p
Note: Many parcels have more than one listing and were tallied according to their highest risk level.
[1] Also located within the Affected Area for hazards and hazmat
MSF = maintenance and storage facility

Figure 4.10-1. Known Environmental Concern Sites (Los Angeles to South Gate)

Source: Prepared on behalf of Metro in 2023

Figure 4.10-2. Known Environmental Concern Sites (South Gate to Artesia)

Source: Prepared on behalf of Metro in 2023

Three of the known release sites are identified as Cortese/Superfund hazardous material sites:

- Jervis B Webb – 9301 Rayo Avenue/5030 Firestone Boulevard, South Gate (Jervis site)
- Cooper Drum Co. – 9316 Atlantic Avenue, South Gate (Cooper Drum site)
- Southern Avenue Industrial Area[7] – 5211 Southern Avenue, South Gate (Southern Avenue Industrial Area site)

As a result of Metro's coordination with the USEPA in 2023, the USEPA provided supplemental groundwater well location information for these three adjacent Superfund sites, which were also identified in the Draft EIS/EIR. Based on this information, 10 groundwater wells associated with the Jervis site are present within the Affected Area for hazards and hazmat. One of these wells is located immediately east of the location identified for TPSS Site #10 near Firestone Boulevard. However, none of the wells are located within the project footprint.

The information provided by USEPA also identified that six groundwater wells associated with the Cooper Drum site are also present within the Affected Area for hazards and hazmat. However, none of the wells are located within the project footprint. The six wells are located north-northeast and east of the Cooper Drum site.

The information provided by USEPA identified that four groundwater wells associated with the Southern Avenue Industrial Area site are present within the Affected Area for hazards and hazmat. However, none of the wells are located within the project footprint. Three of the wells are located on the Southern Avenue Industrial Area parcel and one of the wells is located south of the Southern Avenue Industrial Area parcel.

The Cortese/Superfund hazardous material sites and associated groundwater wells are not located within the Affected Area for hazards and hazmat for the design option or MSF.

Groundwater Contamination

A list of environmental concern sites within the Affected Area for hazards and hazmat is included in Appendix B and Appendix G of the Hazardous Materials Impact Analysis Report. Twenty-one environmental concern sites with contaminated groundwater are located in the Affected Area for hazards and hazmat along the LPA. There are no known contaminated groundwater release sites within the Affected Area for hazards and hazmat for the design option and MSF.

Landfills

Municipal waste landfills have the potential to release methane gas that may present a health and/or explosion risk. Four current or former solid waste landfills were identified within the Affected Area for hazards and hazmat (landfills): Wilmington Avenue Dump, Huntington Park City Dump, Caltrans South Gate, and South Gate Rod and Gun Club (former landfill). Methane gas has not been detected at Wilmington Avenue Dump, Huntington Park City Dump, or Caltrans South Gate. However, it is unknown whether soil vapor testing for methane or other constituents has been completed at the South Gate Rod and Gun Club. Soil contamination from metals, organochlorine pesticides, petroleum

[7] Also known as Seam Master Industries.

hydrocarbons, semi-volatile organics, and toluene is a concern at the South Gate Rod and Gun Club site due to the following health risks associated with the known or potential contaminants:

- Methane gas is non-toxic, odorless, colorless, explosive, flammable, and acts as an asphyxiant by displacing oxygen in the atmosphere.
- Ingestion, inhalation, and dermal exposure to petroleum hydrocarbons can result in various cancers, birth defects, and/or other reproductive harm (Prop 65 2020).
- Inhalation and/or ingestion of organochlorine pesticides can cause thyroid, bladder, liver, kidney, and/or central nervous system damage, and possibly cancer (Delaware Health and Social Services [DHSS] 2020).
- Inhalation, ingestion, and/or dermal exposure to various metals can cause kidney, and blood damage as well as central nervous system, gastrointestinal system, reproductive system, and/or cardiovascular system health effects (Diagnose 2020).
- Inhalation, ingestion, and absorption of semi-volatile organic compounds can cause allergies, asthma, endocrine and thyroid disruption, reproductive toxicity, and fetal and child development delays (USEPA 2016).
- Inhalation of toluene can cause central nervous system damage and chronic exposure may cause hearing and color vision loss, or brain damage (Agency for Toxic Substances and Disease Registry [ATSDR] 2020d).

There are no known landfills within the Affected Area for hazards and hazmat (landfills) for the design option and MSF.

4.10.2.3 General Hazardous Materials Conditions

In addition to the existing railroad corridor ROW, existing land uses in the Affected Area for hazards and hazmat include industrial, commercial, retail, and residential uses. The hazardous materials described below are likely to be encountered in one or more locations in the Affected Area for hazards and hazmat.

Lead-Based Paint

LBP is recognized as a potential health risk due to the known toxic effects of lead on the central nervous system, blood stream, and other vital organs such as the kidney. Lead exposure occurs primarily through the ingestion of LBP. LBP was banned for residential and consumer use in 1978 and in lead solder used in plumbing in 1988. The use of LBP is still allowed for industrial purposes. LBP may be present in buildings and structures in the Affected Area for hazards and hazmat.

The risk of lead toxicity in LBP varies based on the condition of the paint and the year of its application. Structures built before 1978 are likely to contain elevated concentrations of LBP. Structures in the Affected Area for hazards and hazmat with the potential to contain LBP include residences and other structures (such as barns, sheds, commercial buildings, warehouses, industrial structures, equipment utility sheds, and bridges) painted prior to 1977. In addition, lead may be present on roads with yellow thermoplastic or yellow painted traffic stripes and pavement markings. Additionally, weathering and routine maintenance of paint on buildings may have contaminated nearby soils with lead.

Aerially Deposited Lead

Aerially deposited lead (ADL) was historically deposited by cars burning leaded gasoline and is often found in the soil adjacent to highways and roads. Elevated concentrations of ADL may be present along existing roadways, including those throughout the Affected Area for hazards and hazmat. If ADL is ingested, it can damage the nervous system and/or blood cells. Soil along highways in the Affected Area for hazards and hazmat may contain concentrations of lead exceeding state regulatory thresholds, and any waste generated from the disturbance of soil in these locations may be regulated as a hazardous waste. Soil at grade crossings within the Affected Area for hazards and hazmat are likely to be contaminated with ADL due to the proximity of several highways including, but not limited to, the following:

- Long Beach Freeway (I-710)
- Glenn Anderson Freeway (I-105)
- San Gabriel River Freeway (I-605)
- Artesia Freeway (SR-91)

In addition, multiple county and city roads have existed for decades in areas adjacent to or within the Affected Area for hazards and hazmat, including, but not limited to, Randolph Street and Salt Lake Avenue.

Asbestos-Containing Material

The inhalation of asbestos fibers can lead to various cancer and non-cancer diseases such as asbestosis, pleural disease, lung cancer, mesothelioma, and various other cancers (larynx, ovary, pharynx, stomach, and colorectum) (ATSDR 2020a). In December 1977, the United States Consumer Product Safety Commission restricted the use of ACMs, including patching compounds and artificial fireplace ash products. A review of historical aerial photographs indicates that many structures in the Affected Area for hazards and hazmat were constructed prior to 1989. Therefore, it is likely that ACMs are present in a majority of those structures, including residential, commercial, and industrial structures, throughout the Affected Area for hazards and hazmat.

Common Railroad Corridor Contaminants

The following railroad lines and spurs currently traverse the Affected Area for hazards and hazmat:

- Wilmington Branch ROW from south of Washington Boulevard to Slauson Avenue
- La Habra Branch ROW located along Randolph Street from Slauson Avenue to Salt Lake Avenue
- San Pedro Subdivision ROW from Randolph Street to Rosecrans Avenue
- PEROW from Rosecrans Avenue to South Street

In addition to existing railroad lines and spurs, former railroad lines and spurs were located in industrial areas in the Affected Area for hazards and hazmat. Contaminants common in railway corridors include petroleum hydrocarbons, naphthalene, pesticides and herbicides, polycyclic aromatic hydrocarbons (PAHs), and heavy metals, including arsenic and lead. Abandoned railroad ties may also remain in the Affected Area for hazards and hazmat and would require special handling and disposal. The following health effects are associated with these common railroad-associated contaminants if ingestion, inhalation, and/or dermal exposure were to occur:

- Various cancers, birth defects, and/or other reproductive harm (ATSDR 2020b; California Office of Environmental Health Hazard Assessment 2020)

- Cataracts or retinal hemorrhage, as well as reproductive and developmental effects (USEPA 2000)
- Thyroid, bladder, liver, kidney, and/or central nervous system damage (DHSS 2020)
- Dermal skin irritations, allergic reactions and nervous system disorders (Healthfully 2020)
- Increased risk for diabetes and high blood pressure (Centers for Disease Control and Prevention [CDC] 2020a)
- Kidney, blood, and nervous system damage (CDC 2020b)

Hazardous Material Pipeline Utility Corridor Contaminants

The Affected Area for hazards and hazmat includes urban areas and associated utilities, such as crude oil, natural gas, and hydrocarbon product pipelines. The following data have been adjusted since the Draft EIS/EIR based on comments received on the Draft EIR/EIS to include natural gas pipelines and updates to the Affected Area for hazards and hazmat made as a result of refinements to the LPA. As identified in Table 4.1 of the Hazardous Materials Impact Analysis Report, 32 liquid hazardous material pipelines and 4 high-pressure natural gas transmission pipelines are located within the Affected Area for hazards and hazmat for the LPA. In addition, five liquid hazardous material pipelines are located within the Affected Area for hazards and hazmat for the MSF. Ingestion, inhalation, and dermal exposure to petroleum hydrocarbons could result in various cancers, birth defects, and/or other reproductive harm (Prop 65 2020). Utility-related contaminants that may be present within the Affected Area for hazards and hazmat include petroleum hydrocarbons, volatile organic compounds, and metals.

Pesticides and Agricultural Use

A review of historical aerial photographs indicates that most of the development in the Affected Area for hazards and hazmat occurred prior to 1948. However, prior to development, regular applications of fertilizers, pesticides, or other chemicals for former agricultural use may have occurred in the Affected Area for hazards and hazmat. Although there are currently no agricultural properties located in the Affected Area for hazards and hazmat, it is possible that residue from agricultural chemicals may be present from the former use or storage in or adjacent to the Affected Area. Inhalation and/or ingestion of organochlorine pesticides could cause thyroid, bladder, liver, kidney, and/or central nervous system damage, cancer (DHSS 2020). Herbicides affect human health through dermal exposure, ingestion, or inhalation, which may result in dermal skin irritations, allergic reactions, cancers, and nervous system disorders (Healthfully 2020).

Polychlorinated Biphenyls

PCBs may be present in fluorescent lighting ballasts, transformers, elevators, electrical substations, vehicle service lifts, and other areas where hydraulic equipment have been used. During the site reconnaissance, pad and pole-mounted transformers, and stationary and mobile hydraulic equipment were observed at multiple locations in the Affected Area for hazards and hazmat. Inhalation, ingestion, and dermal exposure to PCBs may cause acne-like skin conditions in adults and neurobehavioral and immunological changes in children (ATSDR 2020c).

Structures in the Affected Area for hazards and hazmat were not accessible during the site reconnaissance, and no information regarding the age of lighting ballasts in these buildings or disposal of ballasts was available. Due to the lack of available data, PCBs are assumed to be present in ballasts in buildings within the Affected Area for hazards.

4.10.2.4 Educational Facilities in Proximity to Hazardous Materials

The Affected Area for hazards and hazmat, specifically for the purpose of the analysis related to educational facilities, is 0.25-mile from the LPA (referred to as the Affected Area for hazards and hazmat [educational facilities]). Educational facilities within the Affected Area for hazards and hazmat (educational facilities) along the LPA are identified in Table 4.5 and Figures 4-2 and Figure 4-3 of the Hazardous Materials Impact Analysis Report. Forty-five educational facilities were identified within the Affected Area for hazards and hazmat (educational facilities) along the LPA, two of which are also within the Affected Area (educational facilities) for the MSF. Individuals typically present at educational facilities (toddlers, children, teens, and young adults) are particularly sensitive to hazardous materials exposure. Therefore, additional protective regulations apply to projects that may use or disturb potentially hazardous materials near or at schools.

4.10.2.5 Oil and Gas Wells

Figure 4.10-3 depicts one abandoned oil/gas well, known as 'Elks' 1, in the Affected Area for hazards and hazmat. Naturally occurring methane and/or H_2S gases may be present near abandoned oil/gas wells.

Common issues associated with leaking oil/gas wells, or abandoned wells not plugged and abandoned to current standards, include the release of methane and/or H_2S gas, oil seepage, and contaminated soils and groundwater. Both methane and H_2S can seep from the surrounding soils, fractures, and/or faults in the deep bedrock, and into existing buildings, basements, manholes, utility vaults, sewer lines, open trenches, excavations, and tunnels where they can accumulate and create hazardous conditions.

Radon Gas: Radon gas is produced by the decay of uranium, which may be naturally present at varying levels in soil and rock. Once present, the gas moves through the ground and can enter structures through utility corridors, openings or cracks in foundations, and construction joints. Radon gas is very dense and can accumulate in basements or crawl spaces. Radon exposure has been linked to lung cancer. The USEPA action level for radon is above 4.0 pCi/l of air. The USEPA has mapped Los Angeles County as a Zone 2 radon area, which is defined as an area with a moderate potential for radon to be present. Average indoor radon levels in Zone 2 range from 2.0 and 4.0 pCi/l (USEPA 2019). Radon is not anticipated to be present at harmful concentrations in the Affected Area for hazards and hazmat and is therefore not discussed further.

Figure 4.10-3. Abandoned Oil/Gas Wells and Methane Zones and Buffer Zones

Source: Metro 2024p

4.10.3 Environmental Consequences and Environmental Impacts

4.10.3.1 No Build Alternative

Under the No Build Alternative, reasonably foreseeable capital transportation improvements and/or transit and highway operational enhancements would be built, with the exception of the LPA. These facilities would be designed and operated in compliance with established regulations and standards related to hazardous materials and hazards. Therefore, adverse effects related to hazards and hazardous materials are not anticipated during operation of these facilities. Because the LPA would not be implemented, use and transport of limited quantities of hazardous materials associated with maintenance of the LPA would not occur. However, under the No Build Alternative, the remediation of pre-existing contaminated areas that would take place as part of the LPA would not occur. Therefore, under the No Build Alternative, there would be no potential long-term benefits related to the remediation of pre-existing contaminated soils along the LPA alignment.

4.10.3.2 Locally Preferred Alternative

Environmental Concern Sites

Known, Potential, and Historical Concern Sites: There are 307 known, potential, and historical environmental concern sites in the Affected Area for hazards and hazmat. These sites, summarized in Table 4.10.1 and detailed in Appendix B of the Hazardous Materials Impact Analysis Report), are as follows:

- 59 known release sites (21 with contaminated groundwater)
- 96 potential environmental concern sites
- 152 historical environmental concern sites

Minimal soil disturbance may occur during operation of the LPA associated with maintenance activities (such as trenching to repair underground signal lines or utilities that pass through the area). As discussed further in Section 4.19.3.10 (Construction-related Hazards and Hazardous Materials), Project Measure HAZ PM-5 (Property Assessment-Phase I and II ESAs) requires that onsite soils be tested and remediated, if needed, prior to construction. Because pre-existing contaminants from environmental concern sites, if present, will be removed prior to operation and maintenance of the LPA, contaminants associated with environmental concern sites will not be encountered during operation and maintenance of the LPA. Under NEPA, operation and maintenance of the LPA will not result in adverse effects related to environmental concern sites.

Landfills: One former landfill (South Gate Rod and Gun Club) poses soil vapor concerns in the Affected Area for hazards and hazmat (landfills); this landfill is adjacent to the LPA alignment. Should methane or other gases be present at the landfill and accumulate near the LPA, a health and explosion hazard may exist in the Affected Area for hazards and hazmat (landfills) during operation. Specifically, underground methane accumulation could pose a hazard during operation along the LPA alignment at Miller Way in South Gate.

Because methane and other gases may be present within the Affected Area for hazards and hazmat (landfills), sampling to verify the presence of methane and other gases will be conducted to support project design. Project Measure HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]), described under Section 4.10.4.1, will be implemented to minimize potential effects of the landfill gas accumulation concerns to the workers and

general public in the vicinity of the LPA. As specified in this project measure, Metro will retain a qualified environmental consultant to prepare a Soil Vapor Management Plan (and/or Landfill Gas Accumulation Management Plan) to address the possibility of landfill gas accumulation concerns during operation of the LPA. This plan will provide information regarding proper management and disposition of contaminated soils and gases and will be prepared in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies). With implementation of this project measure, operation of the LPA will not result in adverse effects related to potential landfill gases.

Groundwater Contamination: Twenty-one sites with known groundwater contamination are present within the Affected Area for hazards and hazmat. In locations where groundwater has been contaminated, long-term groundwater monitoring or dewatering may be necessary during operation in order to manage and treat the contaminated groundwater. In locations where long-term contaminated groundwater dewatering is necessary, Project Measure HAZ PM-2 (Disposal of Groundwater [Operation]), which requires LARWQCB consultation and permit compliance, will be implemented. With implementation of HAZ PM-2 (Disposal of Groundwater [Operation]), operation of the LPA will not result in adverse effects related to groundwater contamination or dewatering.

General Hazardous Material Conditions

LBP, ADL, Asbestos/ACM, Railroad, Pipelines, Agriculture, PCBs: Operation of the LPA will not require disturbance of LBP, ACM, existing common railroad corridor contaminants, hazardous material pipeline utility corridor contaminants, pesticides from agricultural use, ADL, or PCBs. Minimal soil disturbance may result from maintenance activities (such as trenching to repair underground signal lines or utilities that pass through the area). As discussed further in Section 4.19.3.10 (Construction-related Hazards and Hazardous Materials Section), Project Measure HAZ PM-5 (Property Assessment-Phase I and II ESAs) requires that onsite soils be tested and remediated, if needed, prior to construction. Because pre-existing soil contaminants (such as LBP, ACM, existing common railroad corridor contaminants, hazardous material pipeline utility corridor contaminants, ADL, or PCBs), if present above regulatory limits, will be removed prior to operation of the LPA, these contaminants will not be encountered during maintenance of the LPA. However, there is still a potential for residual contamination or common railroad corridor contaminants (for example herbicides or cleaners) to be present in onsite soils. Maintenance activities could result in an adverse effect if soils with residual contamination or common railroad corridor contaminants are disturbed. In the event that soil disturbance is necessary for maintenance, Project Measures HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]) will be implemented to avoid and minimize the exposure of work crews and the general public to potentially contaminated soil. With implementation of HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]), operation of the LPA will not result in adverse effects related to potentially contaminated soil.

Operation of the LPA is not expected to require the use of large quantities of extremely hazardous materials above the threshold quantities specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code (Section 4.10.1.2). However, maintenance of the LPA may require the handling, use, and transport of limited quantities of hazardous

materials (such as herbicides or cleaners) associated with routine maintenance of rail facilities. The use of hazardous materials along the LPA will be limited during maintenance, and any use will occur in accordance with all federal and state regulatory requirements that are intended to manage hazards and prevent spills. Specifically, Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will be implemented to avoid and minimize the exposure of work crews and the general public from use, handling, and transport of hazardous materials. Therefore, under NEPA, maintenance of the LPA will not result in adverse effects related to common railroad corridor contaminants.

Educational Facilities

There are 45 educational facilities located within the Affected Area for hazards and hazmat (educational facilities). Hazardous materials in quantities equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code (Section 4.10.1.2) will not be used during operation or maintenance of the LPA. Additionally, operation of the LPA is not expected to create hazardous air emissions within the Affected Area for hazards and hazmat (educational facilities). Under NEPA, operation of the LPA will not result in adverse effects related to educational facilities.

Oil and Gas Wells

One abandoned oil well has been identified within the Affected Area for hazards and hazmat, but this well is located outside the footprint of the LPA. Although the known oil/gas well in the Affected Area for hazards and hazmat is reportedly abandoned, it may not have been abandoned to current standards. Additionally, unidentified abandoned oil wells may be present throughout the Affected Area for hazards and hazmat. Therefore, an accidental release of subsurface gas could occur as a result of damage to wells caused by project-related vibration.

The abandonment of known and undocumented oil/gas wells to current standards, if such wells are present, will occur during construction and is therefore discussed in Section 4.19.3.10 (Construction-related Hazards and Hazardous Materials Section). Following detection and proper abandonment (as outlined by Mitigation Measure HAZ-1 [Unidentified Oil and Gas Wells] and Project Measure HAZ PM-8 [Oil Well Abandonment]), the presence of abandoned oil/gas wells within 100 feet of the LPA footprint during operation and maintenance will not represent a hazard. See Section 4.19.3.10 for additional discussion regarding the discovery and abandonment of wells during construction.

4.10.3.3 Design Option: Close 186th Street

The LPA with the design option would not substantially modify operation or maintenance compared to the LPA without the design option as the design option would close a different at-grade crossing. Effects associated with operation and maintenance of the LPA with the design option would be similar to the LPA without the design option, as described in Section 4.10.3.2. The Affected Area for hazards and hazmat associated with the design option contains the following:

- One historic concern site
- No landfills
- No groundwater release sites
- One educational facility

- No hazardous material pipelines
- No known abandoned oil/gas wells; however, unidentified wells could be present

The historic concern site and educational facility are also in Affected Area for hazards and hazmat associated with the LPA at the location of the design option. Therefore, operation of the LPA with the design option would not expose people or the environment to additional hazardous materials when compared to the LPA without the design option. The assessment, project measures, and impact conclusions presented in Section 4.10.3.2 for the LPA without the design option are also applicable to the LPA with the design option. With implementation of the following project measures, the LPA with the design option would not result in adverse effects related to environmental concern sites, LBP, ADL, Asbestos/ACM, Railroad, Agriculture, PCBs, and educational facilities: Project Measures: HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]), HAZ PM-2 (Disposal of Groundwater [Operation]), and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation].

4.10.3.4 Maintenance and Storage Facility

Environmental Concern Sites

Known, Potential, and Historical Concern Sites: As shown in Table 4.10.1, there are three environmental concern sites, all of which are historical environmental concern sites, within the Affected Area for hazards and hazmat associated with the MSF. Disturbance of soil, soil vapor, and groundwater at known, potential, and historic concern sites is not expected during operation at the MSF. Therefore, environmental concern site contaminants will not be encountered during operation of the MSF. Under NEPA, operation of the MSF will not result in adverse effects related to environmental concern sites.

Landfills: No landfills are present within the Affected Area for hazards and hazmat (landfills) associated with the MSF. Therefore, operation of the MSF will not result in adverse effects related to landfill gases.

Groundwater Contamination: There are no known groundwater contaminants present within the Affected Area for hazards and hazmat associated with the MSF; therefore, operation of the MSF will not result in adverse effects related to groundwater contaminants or dewatering.

General Hazardous Material Conditions

LBP, ADL, Asbestos/ACM, Railroad, Pipelines, Agriculture, PCBs: Operation of the MSF will not require ground disturbance; therefore, disturbance of contaminated soil or groundwater is not a concern. Although there are five hazardous material pipelines in the Affected Area for hazards and hazmat associated with the MSF, the pipelines are underground and will not be affected by the aboveground operation of the MSF. Under NEPA, operation of the MSF will not result in adverse effects related to general hazardous material conditions, including hazardous material underground pipelines.

Operation of the MSF is not expected to include the use of large quantities of extremely hazardous materials. However, limited quantities of hazardous materials may be temporarily stored or handled at the MSF. Cleaners and degreasers that could contain small amounts of hazardous or extremely hazardous materials, substances, or wastes may be used during operation of the MSF. However, off-the-shelf products will be used in small quantities and exposure outside the facility will be unlikely. The potential for effects resulting from operation of the MSF is

generally consistent with those that will result from operation of the LPA. With implementation of the following project measure, the MSF will not result in adverse effects related to hazardous materials, LBP, ADL, Asbestos/ACM, Railroad, Agriculture, PCBs, and educational facilities: Project Measure: HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]).

Educational Facilities

Two educational facilities are located within the Affected Area for hazards and hazmat (educational facilities) associated with the MSF. Operation of the MSF will not emit hazardous air emissions. Mixtures containing extremely hazardous substances will not be used in quantities exceeding the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code. Additionally, Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will be implemented so that hazardous materials are managed appropriately during operation. With implementation of this measure, operation of the MSF will not result in adverse effects related to educational facilities.

Oil and Gas Wells

The MSF is not within an area characterized by known abandoned oil and gas wells. However, unidentified abandoned oil wells may be present in the Affected Area for hazards and hazmat associated with the MSF. The abandonment of known and undocumented oil/gas wells to current standards, if such wells are present, will occur during construction, as outlined by Mitigation Measure HAZ-1 [Unidentified Oil and Gas Wells] and Project Measure HAZ PM-8 [Oil Well Abandonment] (refer to Section 4.19.3.10 for additional discussion regarding the discovery and abandonment of wells during construction and a description of the project and mitigation measure). Following detection and proper abandonment, the presence of abandoned oil/gas wells during operation and maintenance will not represent a hazard. Therefore, operation of the MSF will not result in adverse effects related to oil/gas wells. Under NEPA, operation of the MSF will result in no adverse effects related to oil/gas wells.

4.10.3.5 U.S. Army Corps of Engineers Facilities

Operation of the LPA over the USACE facilities is substantially similar to operation of the LPA along other locations of the alignment. No ground-disturbing activities are proposed within USACE facilities during operation or maintenance of the LPA. Operation and maintenance of the LPA is not expected to require the use of hazardous materials over USACE facilities. However, maintenance of the LPA may require the handling, use, and transport of limited quantities of hazardous materials (such as herbicides or cleaners) associated with routine maintenance of rail facilities. The use of hazardous materials along the LPA will be limited during maintenance, and any use will occur in accordance with all federal and state regulatory requirements that are intended to manage hazards and prevent spills. Specifically, Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will be implemented to avoid and minimize the exposure of work crews and the general public from use, handling, and transport of hazardous materials. Therefore, there will be no adverse effects regarding hazardous materials or wastes over USACE facilities resulting from operation of the LPA.

4.10.4 Project Measures and Mitigation Measures

4.10.4.1 Project Measures

The following project measures have been identified to reduce potential adverse operational effects of the LPA.

HAZ PM-1 Handling, Storage, and Transport of Hazardous Materials or Wastes (Operation)

During operation of the LPA, hazardous materials may be temporarily stored, handled, or transported along the alignment and at the MSF.

As required by Metro, the operator will provide an industrial waste management plan and/or waste and hazardous materials management plan, such as a plan defined in Title 19 CCR or a Spill Prevention, Control, and Countermeasure Plan prior to the start of revenue service. This plan will identify the responsible parties and outline procedures for hazardous waste and hazardous materials handling, storage, and transport during operation of the LPA. The plan will be prepared to Metro Contractor specifications, submitted to Metro prior to operation, and will be implemented during operation. The plan will:

- Comply with prescribed best management practices (BMPs) to prevent hazardous material releases and cleanup of any hazardous material releases that occur
- Comply with the SWRCB Construction CWA Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials (SWRCB 2017)

Ground-disturbing activities could occur along the LPA if trenches or other soil disturbing activities are needed to maintain or replace the rails or underground rail features or utilities. If ground-disturbing activities occur during operation and undocumented hazardous materials are identified, the operator will comply with the plan identified above for known contaminant sources and applicable federal and state regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act.

HAZ PM-2 Disposal of Groundwater (Operation)

If disposal of contaminated groundwater is required during operation of the LPA, (decontamination water, purge water, dewatering, etc.), the LARWQCB will be consulted and Metro will comply with permits as required by the LARWQCB. LARWQCB may require that an individual National Pollutant Discharge Elimination System (NPDES) permit and/or waste discharge requirements (WDR) be obtained for dewatering and discharge activities. Additionally, the following agencies will be contacted as needed:

- City of Los Angeles Sanitation will be notified if contaminated groundwater will be discharged to the sewer system.
- City of Vernon Health and Environmental Control Department will be contacted if contaminated groundwater will be discharged to the stormwater system.
- County of Los Angeles Department of Public Health will be contacted if contaminated groundwater is encountered during dewatering within the boundaries of the following cities: Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, Artesia, and the unincorporated community of Florence-Firestone.

The groundwater discharge and disposal requirements vary by agency, location, concentration, and contaminants of concern and are therefore developed in consultation with the agency and the project proponent.

HAZ PM-3 Contaminated Soil, Soil Vapor, and Groundwater (Operation)

Prior to the start of operation of the LPA, the operator will retain a qualified environmental consultant to prepare a Soil Management Plan, Soil Vapor Management Plan (and/or Landfill Gas Accumulation Management Plan), Soil Reuse Management Plan, and Groundwater Management Plan or a combined Soil, Soil Vapor, Soil Reuse, and Groundwater Management Plan to address the possibility of encountering contaminated soil, soil vapor, and groundwater during operation. These plans will be completed to Metro's contractor specifications and submitted to Metro prior to operation and any ground-disturbing activities for the LPA.

Depending on the overall design of the LPA, contaminated soil, soil vapor, and/or groundwater may be encountered during normal operation of the LPA (dewatering or soil vapor venting) or during repairs and maintenance along the alignment that involve disturbance of soil, soil vapor, or groundwater (trenching, potholing, and utility repairs).

The Soil and Soil Vapor Management Plans (and/or Landfill Gas Accumulation Management Plan) must establish provisions per Metro's contractor specifications for the disturbance of contaminated materials (known and undocumented). Proper management and disposition of contaminated soils will be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

The Soil Reuse Management Plan must establish provisions per Metro's contractor specifications for the reuse of contaminated known or undocumented soils. Proper management and disposition of contaminated soils will be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

The Groundwater Management Plan must establish provisions per Metro's contractor specifications for encountering and managing contaminated groundwater (known and undocumented). Proper disposal of contaminated groundwater will be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

Where open or closed regulatory release cases are already managed by a regulatory agency (e.g., USEPA, DTSC, RWQCB) and Metro's operation involves plans to alter the use of the site and/or disturb contaminated soil and/or groundwater onsite, Metro will notify the regulatory agency of the planned land use changes prior to ground-disturbing activities at the location of the open or closed regulatory release site. The regulatory agency will determine the level of investigation and/or remediation (performance standards) necessary on a case-by-case basis. A closure or no further action determination letter from the regulatory agency will be obtained when investigation and/or remediation is complete.

4.10.4.2 Mitigation Measures

No hazardous material mitigation measures are required during operation or maintenance of the LPA, including the design option and MSF.

4.10.5 California Environmental Quality Act Determination

The hazards and hazardous materials CEQA determinations included in the following sections are based on the existing conditions presented in Section 4.10.2, the environmental impacts analysis presented in Section 4.10.3, and the project measures identified in Sections 4.10.4.1.

4.10.5.1 Threshold HAZ-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

No Project Alternative

Under the No Project Alternative, there would be no change to the Affected Area for hazards and hazmat. An increase in routine transport, use, or disposal of hazardous materials related to operation of a new light rail transit line would not occur within the Affected Area for hazards and hazmat. Therefore, the No Project Alternative would not result in significant impacts and mitigation would not be required. However, pre-existing contaminated areas that would be remediated under the LPA (which is a residual benefit of project implementation) would also not occur. Therefore, the No Project Alternative would not provide the potential long-term site remediation benefits of the LPA.

Locally Preferred Alternative

Operation of the LPA is not expected to include the use of large quantities of extremely hazardous materials. However, maintenance of the LPA may require use, handling, and transport of limited quantities of hazardous materials along the alignment. However, the routine transport, use, or disposal of hazardous materials or wastes will not exceed state threshold quantities specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code. Additionally, Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will be implemented so that hazardous materials are managed appropriately during operation and maintenance. Therefore, impacts related to the routine transport, use, or disposal of hazardous materials during operation of the LPA will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

The analysis presented for the LPA without the design option, including project measures, would also apply to the LPA with the design option; therefore, impacts would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Operation of the MSF is not expected to include the use of large quantities of extremely hazardous materials. However, operation of the facility may involve the use and storage of hazardous materials and wastes for maintenance and repair. The location of the MSF is currently occupied by a paintball and airsoft park, which does not generate large quantities of hazardous materials or wastes. Therefore, the public and environment will not be exposed to an increase in the use, storage, transport, and/or handling of hazardous materials due to operation of the MSF.

Compliance with existing regulations pertaining to hazardous material handling, transport, and disposal and required by Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will require appropriate management of hazardous materials during operation. With implementation of this project measure, potential hazards to the public or environment through the routine transport, use, or disposal of hazardous materials during operation of the MSF will be less than significant and mitigation will not be required.

4.10.5.2 Threshold HAZ-2: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Project Alternative

The No Project Alternative would not result in impacts related to the release of hazardous materials into the environment because no new operational activities are proposed that would alter existing conditions.

Locally Preferred Alternative

Operation of the LPA will not result in impacts from reasonably foreseeable upset and accident conditions. Operation of the LPA is not expected to include the use of large quantities of extremely hazardous materials. However, maintenance of the LPA may require the use of limited quantities of hazardous materials (such as herbicides or cleaners) associated with routine maintenance of rail facilities. The use of hazardous materials along the LPA will be limited during maintenance, and any use will occur in accordance with all federal and state regulatory requirements that are intended to manage hazards and prevent spills. With implementation of Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]), the risk of upset or accident of hazardous materials during operation will be less than significant and mitigation will not be required.

Soil disturbance for maintenance is not anticipated to encounter LBP, ACM, hazardous material pipeline utility corridor contaminants, pesticides from agricultural use, ADL, or PCBs. As discussed further in Section 4.19.3.10 (Construction-related Hazards and Hazardous Materials), Project Measure HAZ PM-5 (Property Assessment-Phase I and II ESAs) requires that onsite soils be tested and remediated, if needed, prior to construction. Because pre-existing soil contaminants, if present above regulatory limits, will be removed prior to operation of the LPA, these contaminants will not be encountered during maintenance of the LPA.

The potential exists for residual contamination or common railroad corridor contaminants to be present in onsite soils. If future maintenance involving soil disturbance is necessary during operation of the LPA, residual contamination or common railroad corridor contaminants present in onsite soils may create a hazard to the public or environment due to reasonably foreseeable upset and accident conditions involving the release of hazardous materials during soil disturbance. In the event that soil disturbance is necessary during operation, Project Measures HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]) will be implemented to identify and reduce potential contaminated soil disturbance impacts. With implementation of these project measures, impacts will be less than significant, and mitigation will not be required.

Twenty-one sites with known groundwater contamination are present within the Affected Area for hazards and hazmat and an adverse effect could occur. In locations where groundwater has been contaminated, long-term groundwater monitoring or dewatering may be necessary during operation in order to manage and treat the contaminated groundwater. If long-term groundwater dewatering or monitoring is required, risk of upset or accident of hazardous materials may occur during handling and disposal of contaminated groundwater. Project Measures HAZ PM-2 (Disposal of Groundwater [Operation]) and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]) require appropriate management of hazardous materials and affected groundwater. With implementation of these project measures, risk of upset and accident during groundwater dewatering during operation of the LPA will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

Operation of the LPA with the design option would result in impacts similar to those described above for the LPA without the design option. The evaluation and project measures identified for the LPA without the design option related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment are also applicable to the LPA with the design option. With implementation of Project Measures HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]), HAZ PM-2 (Disposal of Groundwater [Operation]), and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]), hazards related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant during operation of the LPA with the design option, and mitigation would not be required.

Maintenance and Storage Facility

Operation of the MSF will not require ground disturbance; therefore, disturbance of contaminated soil or groundwater is not a concern. Although operation of the MSF is not expected to include the use of extremely hazardous materials, operation of the MSF may involve storage of hazardous materials and wastes for maintaining and repairing rail equipment. Hazardous materials and wastes and storage equipment may include wash racks and storage tanks for fuel, lubricants, used oils, paints, coatings, and various solvents, which would likely be classified as hazardous substances or materials and wastes. Misuse of the hazardous materials or unintended releases of the hazardous materials may result in personnel or public exposure to hazardous materials. Therefore, the use of hazardous materials onsite may create a hazard to the public or the environment due to reasonably foreseeable upset and accident conditions involving the release of hazardous materials. However, the storage, handling, and transportation of hazardous materials at the MSF will be subject to existing federal regulations pertaining to hazardous material handling, transport, and disposal, as required by Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]). Implementation of this project measure will minimize the risk of exposure to the public or environment during operation of the MSF. Hazards related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment will be less than significant, and mitigation will not be required.

4.10.5.3 Threshold HAZ-3: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Project Alternative

Under the No Project Alternative, the LPA would not be implemented. Therefore, no direct impacts associated with increased hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste from operation of a new light rail transit line would occur within one-quarter mile of an existing or proposed school. However, the benefit of remediating sites with pre-existing hazardous conditions as a result of the LPA would also not occur. Therefore, the No Project Alternative would provide no potential long-term site remediation benefits.

Locally Preferred Alternative

There are 45 educational facilities located within the Affected Area for hazards and hazmat (educational facilities). Operation of the LPA will not result in hazardous emissions or require handling of acutely hazardous materials, substances, or waste within the Affected Area for hazards and hazmat (educational facilities). However, maintenance of the LPA may require the use of small quantities of hazardous materials (such as herbicides or cleaners) associated with routine maintenance of rail facilities. The use of hazardous materials along the LPA will be limited during maintenance, and any use will occur in accordance with all federal and state regulatory requirements that are intended to manage hazards and prevent spills. With implementation of Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) the risk of hazardous waste emissions within 0.25-mile of a school during operation will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

One educational facility is located within the Affected Area for hazards and hazmat (educational facilities) at the design option. This educational facility is also present within the Affected Area for hazards and hazmat (educational facilities) along the LPA. Operation of the LPA with the design option would not result in hazardous emissions or require the handling of acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school during operation (similar to the LPA without the design option). However, similar to the LPA without the design option, small quantities of hazardous materials would be used in accordance with federal and state regulatory requirements and Project Measure HAZ PM-1(Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]). The risk of hazardous waste emissions within 0.25-mile of a school during operation of the design option would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Two educational facilities are located within the Affected Area for hazards and hazmat (educational facilities) associated with the MSF, which are also located within the Affected Area for hazards and hazmat (educational facilities) along the LPA.

Operation of the MSF is not expected to include the use of large quantities of acutely hazardous materials. Metro has indicated that the use of cleaners and degreasers that could contain small amounts of hazardous or acutely hazardous materials, substances, or wastes may occur during

operation of the MSF. However, off-the-shelf products will be used in small quantities and exposure outside the facility will be unlikely.

Operation of the MSF will involve handling limited quantities of mixtures containing small amounts of hazardous or acutely hazardous materials, substances, or wastes during operation within 0.25-mile of an existing or proposed school. Project Measure HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]) will be implemented in situations where educational facilities are located within 0.25-mile of the MSF to manage hazardous materials appropriately during operation. With implementation of this project measure, impacts will be less than significant, and mitigation will not be required.

4.10.5.4 Threshold HAZ-4: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Project Alternative

No changes would occur to the Affected Area for hazards and hazmat under the No Project Alternative. Therefore, impacts would be less than significant.

Locally Preferred Alternative

Three hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese sites) are located in or partially in the Affected Area for hazards and hazmat along the LPA. With the exception of one TPSS (TPSS Site #10), the LPA will not operate within a Cortese site. Operation of the LPA will also occur on other regulatory-listed sites, including a landfill, with hazardous material impacts in the soil, soil vapor, and/or groundwater. Affected soil, soil vapor, and groundwater associated with these release sites may be present beneath the LPA. Minimal soil disturbance may be required for maintenance activities (such as trenching to repair underground signal lines or utilities that pass through the area). As discussed further in Section 4.19.3.10 (Construction-related Hazards and Hazardous Materials), Project Measure HAZ PM-5 (Property Assessment-Phase I and II ESAs) requires that onsite soils be tested and remediated, if needed, prior to construction. Because pre-existing contaminants from hazardous materials sites, if present, will be removed prior to operation of the LPA, contaminants associated with hazardous materials sites will not be encountered during the operation and maintenance of the LPA. As a result, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The design option would not be constructed directly within a Cortese site, although the design option footprint extends onto a historic concern site, a reported former fueling facility at 18713 Corby Avenue, Artesia (Appendix A and B of the Hazardous Materials Impact Analysis Report, site no. 811). As discussed above, remediation (if needed) would occur prior to operation. Thus, soil disturbance for maintenance would not encounter contamination from a hazardous materials site. Impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

The MSF will not be constructed directly within a Cortese site. However, operation of the MSF will occur on historical concern sites with potential hazardous material impacts in the soil, soil vapor, and/or groundwater. Although contaminated soil, soil vapor, and groundwater associated with these historic concern sites may be present beneath the MSF, operation of the MSF will not disturb soil, soil vapor, or groundwater. Impacts will therefore be less than significant, and mitigation will not be required (similar to the LPA).

4.10.5.5 Threshold HAZ-5: For a Project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

No airport hazards would occur under the No Project Alternative. There are no airports located within 2 miles of the LPA, design option, or the MSF. Therefore, no impact related to safety hazards at airports will occur from operation of the LPA.

4.10.5.6 Threshold HAZ-6: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The CEQA determinations for this threshold are discussed in Section 4.18.5, Safety and Security, of this Final EIS/EIR and Section 6.1 of *the West Santa Ana Branch Transit Corridor Project Final Safety and Security Impact Analysis Report* (Metro 2024c).

4.10.5.7 Threshold HAZ-7: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

No wildland fire hazards would occur under the No Project Alternative. No wildlands are located in the vicinity of the LPA, design option, or the MSF. Therefore, no impact will occur from operation of the LPA.

4.11 Water Resources

This section summarizes the applicable regulatory setting, existing conditions, and potential impacts on water resources from the LPA, including the design option and MSF. Specifically, this section discusses hydrology and surface waters, water quality, floodplains, and groundwater. Additional information on water resources is provided in the *West Santa Ana Branch Transit Corridor Project Final Water Resources Impact Analysis Report* (Metro 2024d).

This section has been updated since the Draft EIS/EIR to reflect the following regulatory changes: updates to the Regional Municipal Separate Storm Sewer System (MS4) Permit (Order No. R4-2021-0105) and to the LARWQCB WDR (Order No. R4-2018-0125) for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters. In Section 4.11.1.1, additional information was added to "Section 404" and to the Regional MS4 Permit to provide further clarification of regulatory responsibilities. The "Cobey-Alquist Floodplain Management Act," the "California Department of Transportation Statewide Stormwater Program," and a discussion of compliance with Los Angeles County Flood Control District (LACFCD) permits were also added as regional regulations. For the existing conditions, minor updates to the 303(d) list pollutants for the Los Cerritos channel and Coyote Creek are included based on the most recent SWRCB Integrated Report.

This section has also been updated to reflect the LPA, inclusive of refinements. Additionally, the section was updated in response to comments on the Draft EIS/EIR and stakeholder coordination. The changes to this section include updated estimates of the amount of existing impervious area within the project footprint that will be reconstructed or modified to accommodate the LPA (e.g., freight track realignment, relocation of bike trails). Refinements to the conceptual engineering design for the LPA have expanded the total footprint for rail facilities and local street modifications. In total, the new impervious area for the LPA is approximately 29 acres greater than the new impervious area identified for Alternative 3 in the Draft EIS/EIR. Compliance with the Caltrans Statewide MS4 Permit and Clean Water Act Section 408 compliance were added as project design features discussed in Section 4.11.3.1. As discussed in Section 4.9 (Geotechnical, Subsurface, and Seismic), ongoing coordination will occur with USACE as design of the LPA advances to confirm freeboard (clearance above flood waters), analyze and minimize impacts to channel flood conveyance, and obtain agency approval for impacts (both temporary and permanent). With the incorporation of stormwater best management practices and project design features, as well as compliance with regulatory standards, conditions, and permitting requirements, the increase in new impervious area will not increase the severity of impacts identified in the Draft EIS/EIR. Additionally, in response to comments on the Draft EIS/EIR, the analysis was updated to provide information on an existing high-capacity water well located in the City of Bellflower, which is outside the LPA footprint. Specific project measures and descriptions were added to clarify what measures will be implemented for project compliance and impact minimization strategies. These impact minimization strategies will address impacts previously identified in the Draft EIS/EIR. Environmental impacts related to the LPA are similar to the impacts (alignment, disturbed area, and impervious surface) associated with Alternative 3 in the Draft EIS/EIR. No new significant adverse impacts or substantially more severe impacts have been identified, and the impact conclusions in the Draft EIS/EIR remain unchanged.

4.11.1 Regulatory Setting and Methodology

4.11.1.1 Regulatory Setting

The following subsections summarize the regulatory context under which water resources are managed at the federal, state, regional, and local levels, and the statutes (ordinances, policies, and codes) that provide regulatory structure.

Federal

The following federal regulations are applicable to the Project:

- **Clean Water Act (U.S.C. Title 33, Section 1251 et seq.):**
  - **Section 401:** Under Section 401, a federal agency may not issue a permit for an activity that may result in a discharge to waters of the United States until the State of California has granted a §401 Certification. The State of California must issue this Certification to ensure that the discharge complies with state water quality standards. Waters of the U.S. within the project boundary are the Los Angeles River, Rio Hondo channel, and San Gabriel River.
  - **Section 402 (NPDES)**: Through delegated jurisdiction under the CWA, the SWRCB regulates point-source discharges to waters of the United States under the NPDES. Regulated discharges also include diffuse sources of discharge caused by general construction activities covering an area greater than 1 acre, and

stormwater discharges in municipal separate storm sewer systems (MS4s) in which runoff is carried through a developed conveyance system to specific discharge locations. The SWRCB issues both a construction general permit for protection of water quality from stormwater discharges during construction activities, and an industrial general permit for protection of water quality from stormwater discharges during industrial activities. During construction and operation of the LPA, Metro will be responsible for compliance with both NPDES permits.

  - **Section 404:** Under Section 404, USACE regulates the discharge of dredged or fill material into waters of the United States. This includes, but is not limited to, permanent bridge supports and temporary water diversions.
  - **Section 303(d):** U.S. Environmental Protection Agency (USEPA) has authority under the CWA to implement water pollution control programs. In California, this authority is delegated to the SWRCB. Section 303(d) requires states to develop a list of water-quality-impaired water bodies and to implement total maximum daily loads (TMDLs) for certain pollutants in order to meet water quality standards.

- **Rivers and Harbors Act of 1899, as amended (33 U.S.C. 408):** Under Section 14 of the RHA, USACE regulates alterations to (including occupation and use of) a Federal Project to ensure the alteration is not injurious to the public and does not impair the usefulness of the Federal Project. Engineering plans for the aerial crossings of the Los Angeles River, Rio Hondo channel, and San Gabriel River by the LPA must be reviewed and approved by USACE.
- **Executive Orders 11988 and 13690: Floodplain Management:** All federal agencies must avoid (to the extent possible) long- and short-term adverse effects associated with the occupancy or modification of floodplains. The Executive Orders establish an eight-step process that agencies should carry out as part of the decision-making process on projects with the potential to impact floodplains. Engineer Regulation 1165-2-26 describes how the USACE implements Executive Order 11988 to avoid development in a floodplain unless it is the only practicable alternative; reduce the hazard and risk associated with flooding; minimize the impacts of floods on human health, safety, and welfare; and restore the beneficial values of floodplains. Executive Order 13690 amends Executive Order 11988 to establish a federal flood risk management standard and a process for soliciting and considering stakeholder input.
- **National Flood Insurance Act (42 U.S.C. 4001 et seq.)**: The Federal Emergency Management Agency (FEMA) issues flood zone maps on a countywide level. 44 CFR 59-65 set the National Flood Insurance Program (NFIP) floodplain management building requirements delineating policies for development in floodplains. Among other provisions, applicable aspects of the NFIP regulations state that if the area of construction is located within a regulatory floodway, as delineated on the Flood Insurance Rate Map, any development must not increase base flood elevation levels. The term "development" means any man-made change to improved or unimproved real estate, including, but not limited to, buildings, other structures, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. A hydrologic and hydraulic analysis must be performed prior to the start of development and must demonstrate that the development will not cause any rise in base flood levels.

- **Fish and Wildlife Coordination Act:** Under the Fish and Wildlife Coordination Act and Reorganization Plan No. 4, any federal agency that proposes to control or modify any body of water must first consult with the USFWS or the National Marine Fisheries Service, as appropriate, and with the head of the appropriate state agency exercising administration over the wildlife resources of the affected state. Federal agencies are required to fully consider these agencies' recommendations in project reports and to include measures to reduce impacts on fish and wildlife in project plans.

State

The SWRCB and the nine RWQCBs are responsible for the protection of water quality in the state. The SWRCB establishes statewide policies and regulations mandated by federal and state water quality statutes and regulations.

Projects resulting in water discharges, whether to land or water, are subject to Section 13263 of the California Water Code. Through the mandates of this section, dischargers are required to comply with WDRs as developed by the RWQCB. The Project could produce stormwater and other discharges during construction and operation, and therefore will be regulated by the SWRCB and the LARWQCB. The Project will also be subject to additional state regulations related to water resources, including:

- **Porter-Cologne Water Quality Control Act**: The Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwater); regulates discharges to surface water and groundwater; and directs the RWQCBs to develop regional basin plans.
- **Fish and Game Code Section 1602:** The CDFW has jurisdiction over ephemeral, intermittent, and perennial waterways, including natural lakes and man-made reservoirs. CDFW's jurisdiction can also extend over the habitats adjacent to waterways. Under Section 1602, CDFW must be notified of any activity that substantially diverts or obstructs a waterway; changes or uses material from the bed, channel, or bank of a waterway; or deposits or disposes of debris, waste, or other material containing ground pavement where it may pass into any waterway. Notification of CDFW (through a Lake or Streambed Alteration Agreement) will be required prior to the start of construction.
- **State Antidegradation Policy**: This policy is enforced by the SWRCB to maintain high-quality waters in California. The policy requires that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge into high-quality waters will be required to meet WDRs to control the discharge and to avoid any pollution or nuisance from occurring.
- **Construction General NPDES Permit (CGP)**: This permit is enforced by the SWRCB to minimize impacts on stormwater during construction. The CGP requirements apply to any construction project that either results in the disturbance of at least 1 acre of land or is part of a larger common development plan. Additionally, the CGP is required for related construction or demolition activities, including clearing, grading, grubbing, or excavation, or any other activity that results in greater than 1 acre of land disturbance.
- **Industrial General NPDES Permit (IGP)**: This permit is enforced by the SWRCB to minimize impacts on stormwater from industrial activities. The Project will be subject to the regulations of the IGP because it is a transportation facility with vehicle maintenance shops and equipment cleaning operations. The Local and Suburban

Transit (4111) Standard Industrial Classification Code is applicable to the Project and regulated by the IGP. The IGP requires preparation of an industrial stormwater pollution prevention plan (SWPPP) and a monitoring plan for industrial facilities, including vehicle maintenance facilities associated with transportation operations.

- **Seismic Regulations**: Under jurisdiction of the California Department of Conservation, Geological Survey, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act regulate the construction and protection of structures used for human occupancy on the surface trace of active faults and on nonsurface active fault ruptures, respectively. State seismic regulations relate to water quality due to potential hazards related to dam failure and inundation caused by earthquake-induced ground shaking or a seiche event, erosion, improper siting and/or design, and rapidly rising floodwaters during heavy storm events.
- **Sustainable Groundwater Management Act (SGMA):** This Act is enforced by the California DWR for the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results (DWR 2019a). SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. SGMA empowers local agencies to form groundwater sustainability agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt groundwater sustainability plans for crucial groundwater basins in California (DWR 2019b). Water Code Section 10720.8 identifies adjudicated areas in SGMA, which have an existing defined entity administering the adjudication. Under SGMA, adjudicated portions of basins are exempt from developing a Groundwater Sustainability Plan and forming a GSA. However, the entities administering the adjudications are required to submit annual reports. The Central Groundwater Basin lies beneath the project site. It is adjudicated and managed by the Water Replenishment District of Southern California (WRD).
- **Cobey-Alquist Floodplain Management Act:** The Cobey-Alquist Floodplain Management Act (California Water Code 8400-8415) and Executive Order B-39-77 give support to the NFIP. The Act encourages local governments to plan, adopt, and enforce land use regulations for floodplain management to protect people and property from flooding hazards. The Act also identifies requirements that jurisdictions must meet to receive state financial assistance for flood control. In 2002, the California Floodplain Management Task Force created and recommended a proposed revised Executive Order for the state's consideration.
- **Caltrans Statewide Stormwater Program:** The SWRCB adopted the Statewide Stormwater Permit Order 2022-0033-DWQ on June 22, 2022 (the Caltrans Statewide MS4 Permit). This Order regulates both stormwater and nonstormwater discharges from Caltrans-owned MS4s and Caltrans rights-of-way. The Order serves as WDRs pursuant to the California Water Code and is issued pursuant to federal CWA Section 402. New construction within the Caltrans rights-of-way is required to comply with all conditions of this Order and must achieve the pollutant reductions described in this Order through compliance with Caltrans' approved Stormwater Management Plan, as described in Attachment C of the Order.

Regional

The LARWQCB has jurisdiction over stormwater and urban runoff discharges from 85 incorporated cities within the LACFCD, including the cities in the Affected Area for water resources. LACFCD permits will require the Project to include measures to ensure drainage patterns are maintained at all times during construction. Work involving LACFCD's storm drains and flood control channels will occur outside the period of October 15 through April 15 (storm season). This Project is expected to incur construction-related discharges to various downstream water bodies. Therefore, construction and operation of the LPA will be regulated by the following:

- Regional Phase 1 MS4 Permit (LARWQCB Order No. R4-2021-0105). This permit regulates the LACFCD, the County of Los Angeles, and 85 incorporated cities within the coastal watersheds of Los Angeles County (including the cities in the Affected Area for water resources) for discharges of stormwater and urban runoff from MS4s, also called storm drainage systems. The LA County MS4 NPDES permit requires new development and redevelopment projects to have post-construction controls to manage pollutants, pollutant loads, and runoff volume emanating from the project site. The Los Angeles River, Rio Hondo, and San Gabriel River channels are maintained by the LACFCD; therefore, construction and operation of the LPA within these water bodies will require review and approval by the LACFCD.
- LARWQCB Order No. R4-2018-0125 (NPDES No. CAG994004), Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Construction Dewatering Permit). This WDR is required for discharges to surface water from dewatering activities.
- LARWQCB Order No. 93-010, Waste Discharge Requirements for Specified Discharges to Groundwater in the Santa Clara River and Los Angeles River Basins covers construction dewatering and dust control application. The WDR requires that wastewater be analyzed prior to being discharged to determine if it contains pollutants in excess of the applicable Basin Plan Water Quality Objectives. Additionally, any wastewater that might be encountered and subsequently discharged to groundwater will need to comply with applicable water quality standards.
- LARWQCB Order No. 91-93, Waste Discharge Requirements for Discharge of Non-Hazardous Contaminated Soils and Other Wastes in Los Angeles River and Santa Clara River Basins protects waters of the state from contamination due to disposal of soils containing moderate concentrations of petroleum hydrocarbons, heavy metals, and other wastes.
- *Water Quality Control Plan, Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (LARWQCB 2014). This plan sets forth the regulatory water quality standards for surface waters and groundwater within the region.

In addition to the regional regulations set forth by the LARWQCB, various local ordinances and policies regulate construction and operational stormwater discharges, and/or project design impacts on water resources. The Project will also be subject to the following LA County plans and policies:

- LA County *General Plan* (LA County 2015)
- LA County Code (LA County 1998)

- *A Common Thread Rediscovered – San Gabriel River Corridor Master Plan* (LACDPW 2006) and the *Los Angeles River Master Plan* (LACDPW et al. 2022)
- General Management Water Use and Conservation Policy Statement (Metro 2009b)

Local

The Project traverses 12 local jurisdictions: the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the unincorporated Florence-Firestone community of LA County. As such, the Project will be subject to the applicable general plan policies and municipal code ordinances within each jurisdiction (see Table 3.1 in the Water Resources Impact Analysis Report). These plans and regulations set out policies and guidelines pertaining to water use, water quality, and floodplains. Some local approvals may be required; however, no specific permits are required by city codes and regulations.

4.11.1.2 Methodology

The methodology for the evaluation of impacts on water resources involves an analysis of existing data related to hydrology, flooding, drainage, and water quality, and an assessment of whether the Project will substantially degrade surface water or groundwater quality; alter drainage patterns in a manner that would cause flooding, erosion, or siltation; result in exposure of people and/or property to water-related hazards; or otherwise conflict with applicable laws related to hydrology and water quality. The Affected Area for water resources includes the area within 500 feet of the construction footprint. Impact significance, according to CEQA, is determined by comparing project impacts on the CEQA Appendix G thresholds, as summarized in Section 4.11.5.

Permanent impacts on water resources are evaluated by estimating the conversion of pervious to impervious surfaces. Conversion of pervious to impervious areas decreases infiltration, which increases the concentration and total pollutant load in stormwater runoff by increasing runoff volume and peak flow rates. Impacts on water quality from rail operations can be quantified based on the length of track because the track operations areas generate and discharge these pollutants in stormwater as nonpoint source pollution. As pollution generation rates caused by operations are generally similar along the Project's guideway alignment, the length of track is therefore a useful way to evaluate the LPA's magnitude, quality, and location of potential water quality impacts. Construction impacts on water resources are evaluated by estimating the total disturbance area during project construction. Construction will involve ground disturbance (e.g., excavation, stockpiling, and grading) that will expose bare soils to stormwater and could lead to erosion and sedimentation. The results of the construction analysis are included in Section 4.19.3.11, Construction-related Water Resources, of this Final EIS/EIR.

4.11.2 Affected Environment/Existing Conditions

4.11.2.1 Hydrology and Surface Water Bodies

The Affected Area for water resources is located within the watersheds of the Los Angeles and San Gabriel Rivers along with the watersheds of their major tributaries, including the Rio Hondo channel, Compton Creek, the Los Cerritos channel, and Coyote Creek. The alignment will cross the Los Angeles River, the Rio Hondo channel, and the San Gabriel River near existing railroad bridge crossings.

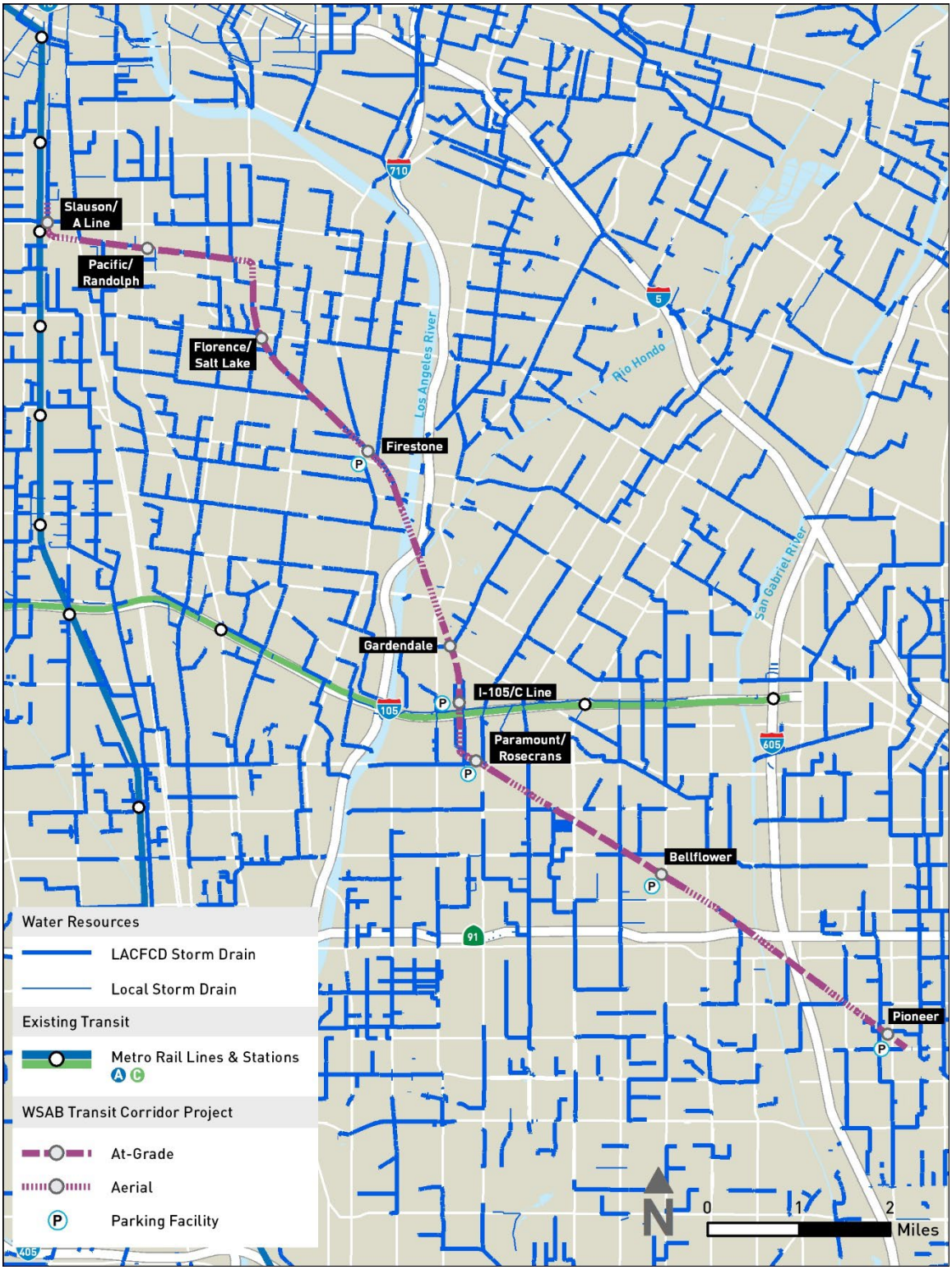
The LPA will be located within the coastal plain of LA County, which is generally flat with mild slopes draining south to southwest toward the ocean. The storm drainage system that exists today generally mirrors the historic locations of rivers and tributaries in the watersheds. Many of the original natural drainages have been engineered to serve as storm drainage for the LACDPW (LACDPW 2006). Land in the Affected Area for water resources is urbanized and largely covered with impervious surfaces associated with areas of asphalt, concrete, buildings, and other land uses that concentrate storm runoff. The LPA will be primarily along major roadway arterials or rail corridors with existing drainage infrastructure. Figure 4.11-1 shows the location of major flood-control channel crossings, including the Los Angeles River, the Rio Hondo channel, and the San Gabriel River. Throughout the Affected Area for water resources, stormwater and other surface water runoff is conveyed to municipal storm drains that eventually drain to surface waters, as shown on Figure 4.11-2.

Ownership and maintenance of the storm drainage infrastructure varies among the local jurisdiction, LACFCD, and Caltrans. Although USACE and LACFCD share jurisdiction over the Los Angeles and San Gabriel Rivers, locations of all potential river crossings are within LACFCD jurisdiction.

Figure 4.11-1. Hydrology and Surface Water Bodies

Source: Metro 2024d

Figure 4.11-2. Regional Storm Drain System



Source: Metro 2024d

4.11.2.2 Water Quality

The LARWQCB Basin Plan designates beneficial uses for surface and groundwater in the Los Angeles Basin area for both the Los Angeles and San Gabriel River watersheds. Table 4.11.1 lists the beneficial uses identified for surface waters within the Affected Area for water resources.

Table 4.11.1. Beneficial Uses of Surface Water in the Affected Area

Surface Water Body	Beneficial Uses[1]
Los Angeles River Reach 2 (Carson St to Rio Hondo Confluence)	Municipal and Domestic Supply (potential), Industrial Service Supply (potential), Groundwater Recharge, Warm Freshwater Habitat, and Wildlife Habitat (potential)
Compton Creek	Municipal and Domestic Supply (potential), Groundwater Recharge, Warm Freshwater Habitat, Wildlife Habitat, Wetland Habitat
Rio Hondo Reach 1 (Los Angeles River confluence to Santa Ana Freeway)	Municipal and Domestic Supply (potential), Groundwater Recharge (intermittent), Warm Freshwater Habitat (potential) and Wildlife Habitat (intermittent)
Los Cerritos Channel	Municipal and Domestic Supply (potential), Warm Freshwater Habitat (intermittent), Wildlife Habitat
San Gabriel River Reach 1 (San Gabriel River Estuary to Firestone Blvd)	Municipal and Domestic Supply (potential), Warm Freshwater Habitat and Wildlife Habitat (potential)
Coyote Creek	Municipal and Domestic Supply (potential), Industrial Service Supply (potential), Industrial Process Supply (potential), Warm Freshwater Habitat, Wildlife Habitat (potential), and Rare, Threatened or Endangered Species
Inland Surface Waters	Beneficial uses of inland surface waters generally include Water Contact Recreation and Warm Freshwater Habitat, Cold Freshwater Habitat, Inland Saline Water Habitat, or Commercial and Sport Fishing. In addition, inland waters are usually designated as Industrial Service Supply, Industrial Process Supply, Non-contact Water Recreation, and Wildlife Habitat, and are sometimes designated as Preservation of Biological Habitats and Rare, Threatened, or Endangered Species

Source: LARWQCB 2019
Note: [1] Beneficial uses are existing unless noted as "potential."

Water bodies not meeting the beneficial uses of state water quality standards are placed on the Section 303(d) List of Water Quality Limited Segments, and states are required to develop TMDLs for the pollutants causing the impairment. Table 4.11.2 lists the pollutants causing impairments in the surface water bodies within the Affected Area for water resources. The LPA will be a redevelopment within these watersheds that is subject to the TMDL standards.

Table 4.11.2. Section 303(d) List of Impaired Waters in the Affected Area

Water Body	Impairment	Source of Impairment	TMDL Completion Date
Los Angeles River Reach 2 (Carson St to Rio Hondo confluence)	Ammonia	Point and Nonpoint Sources	2004
	Indicator bacteria	Source Unknown	2012
	Copper	Source Unknown	2005
	Lead	Point and Nonpoint Sources	2005
	Nutrients (algae)	Point and Nonpoint Sources	2004
	Oil	Natural Sources	2019
	Trash	Nonpoint Source, Surface Runoff, Urban Runoff/Storm Sewers	2008
Compton Creek	Benthic community effects	Source Unknown	2021
	Copper	Source Unknown	2008
	Indicator bacteria	Source Unknown	2009
	Lead	Source Unknown	2005
	Trash	Nonpoint Source	2008
	Zinc	Source Unknown	2008
	pH	Point and Nonpoint Sources	2004
Rio Hondo Reach 1 (Los Angeles River confluence to Santa Ana Freeway)	Indicator bacteria	Source Unknown	2012
	Copper	Source Unknown	2005
	Lead	Point and Nonpoint Source	2005
	Toxicity	Source Unknown	2021
	Zinc	Point and Nonpoint Source	2005
	pH	Point and Nonpoint Source	2004
	Trash	Nonpoint Source, Surface Runoff, Urban Runoff/Storm Sewers	2008
Los Cerritos Channel	Chlordane (sediment)	Source Unknown	2019
	Ammonia	Source Unknown	2015
	Bis(2-ethylhexyl) phthalate	Source Unknown	2019
	Copper	Source Unknown	2019
	Indicator bacteria	Source Unknown	2019
	Lead	Source Unknown	2019
	Trash	Source Unknown	2019
	Zinc	Source Unknown	2019
	pH	Source Unknown	2021

Water Body	Impairment	Source of Impairment	TMDL Completion Date
San Gabriel River Reach 1 (San Gabriel River Estuary to Firestone Boulevard)	Temperature, water	Source Unknown	2027
	pH	Source Unknown	2009
Coyote Creek	Copper, Dissolved	Source Unknown	2016
	Indicator Bacteria	Source Unknown	2016
	Iron	Source Unknown	2027
	Malathion	Source Unknown	2027
	Toxicity	Source Unknown	2008
	pH	Source Unknown	2019

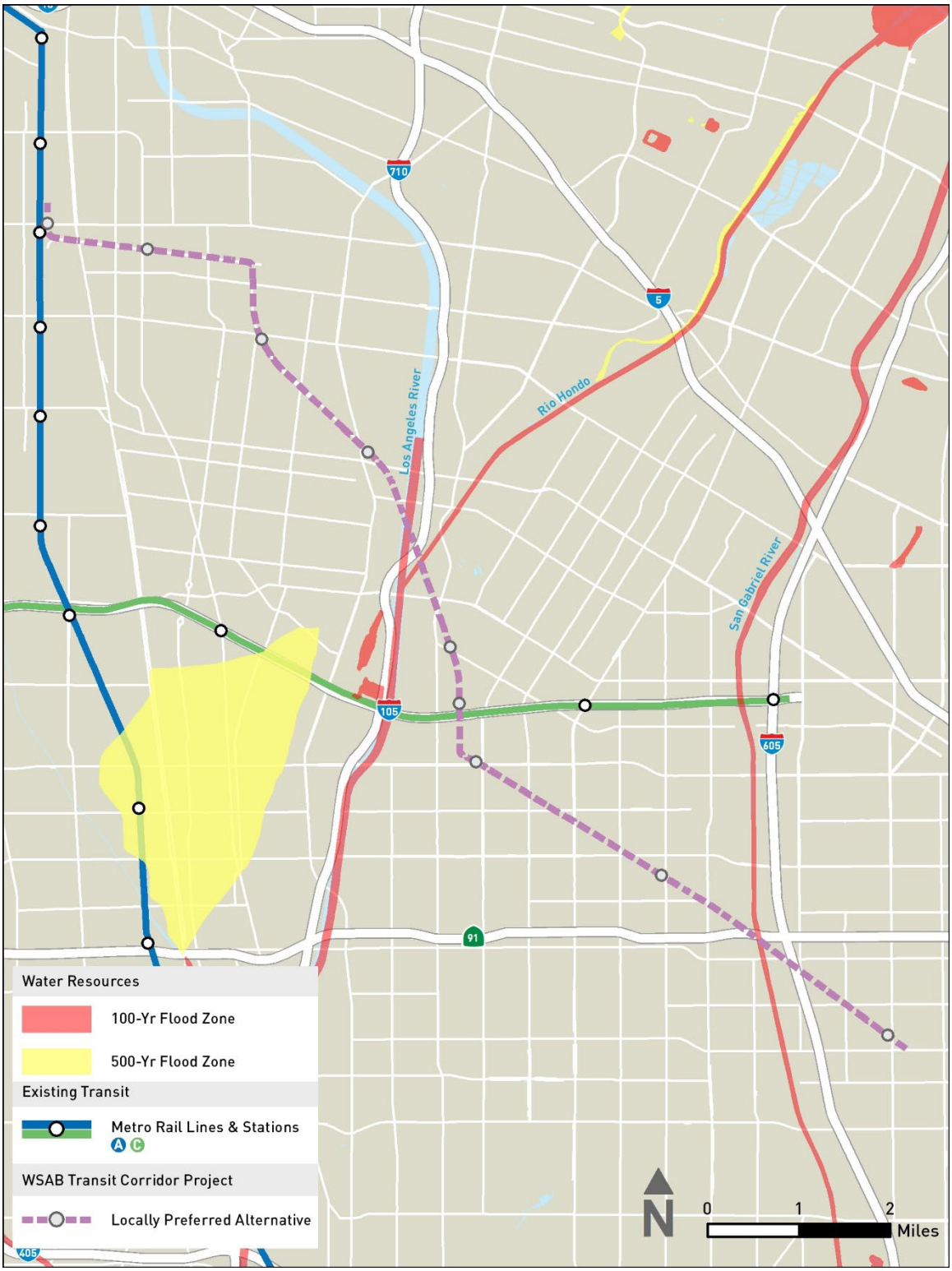
Source: SWRCB 2022
Note: TMDL = total maximum daily load

4.11.2.3 Floodplains

LA County is subject to a wide range of flood hazards, including floods caused by intense storms, earthquakes, and failure of man-made structures. Los Angeles and nearby cities are located in a relatively flat alluvial plain, about 30 miles wide, lying on uplift terraces surrounded by mountain ranges. FEMA Flood Insurance Rate Maps identify areas in LA County and surrounding cities that will be subject to flooding during 100-year and 500-year storm events.

Figure 4.11-3 presents the FEMA-established 100-year flood zones for the Los Angeles River, the Rio Hondo channel, the San Gabriel River, and Coyote Creek, which are each contained within their concrete-lined channel boundaries. Although the Affected Area for water resources is a tributary to Ballona Creek, the creek and associated flood zones are not within the Affected Area. A portion of the Affected Area for water resources is located within larger flood zones designated by FEMA Flood Insurance Rate Maps as "Zone X," which is characterized as "areas of 0.2 percent (500-year) annual chance of flood; areas of 1 percent (100-year) annual chance of flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance of flood." Dams, debris basins, and spreading grounds are considered integral flood-control infrastructure. Debris basins are used to capture the sediment, gravel, boulders, and vegetative debris that are washed out of the canyons during storms. Spreading grounds are areas located adjacent to river channels or within soft-bottom channels to permit water to percolate into groundwater basins for later pumping. There are no dams, debris basins, or spreading grounds within the Affected Area for water resources.

Figure 4.11-3. FEMA Flood Zones in Affected Area and Major Flood Control Facilities



Source: Metro 2024d

4.11.2.4 Groundwater

This section presents the evaluation of groundwater as a water resource (groundwater supply and quality). The evaluation of groundwater contamination is presented in the *West Santa Ana Branch Transit Corridor Project Final Hazardous Materials Impact Analysis Report* (Metro 2024p), and Section 4.10, Hazards and Hazardous Materials, of this Final EIS/EIR.

The Central Basin is a groundwater reservoir that underlies the Affected Area for water resources, as shown in Figure 4.11-4. The Central Basin is a subbasin of the Los Angeles Coastal Plain Groundwater Basins, which are incorporated into the Coastal Plain Hydrographic Subunit. The Central Basin, one of the most important basins in the hydrographic subunit, directly underlies the Affected Area for water resources. The basin is an unconfined aquifer with soils that allow water to percolate through the basin (LACDPW 2006).

Historical over-pumping of the Central Basin caused overdraft, seawater intrusion, and other groundwater management problems related to supply and quality. Adjudication of the basins in the early 1960s set a limit on allowable groundwater extractions to control over-pumping (WRD 2019). Under SGMA, adjudicated portions of basins are exempt from developing a Groundwater Sustainability Plan and forming a GSA. However, WRD is required to submit annual reports to confirm proper resource management. LACDPW, the WRD, and the U.S. Geological Survey conduct regional groundwater quality monitoring in the Central Basin. Groundwater is recharged within the Central Basin at the Rio Hondo Coastal Basin Spreading Grounds, the San Gabriel Coastal Spreading Grounds, and the Dominguez Gap Spreading Grounds. Groundwater quality information for the Central Basin is included in Section 4.4 of the Water Resources Impact Analysis Report.

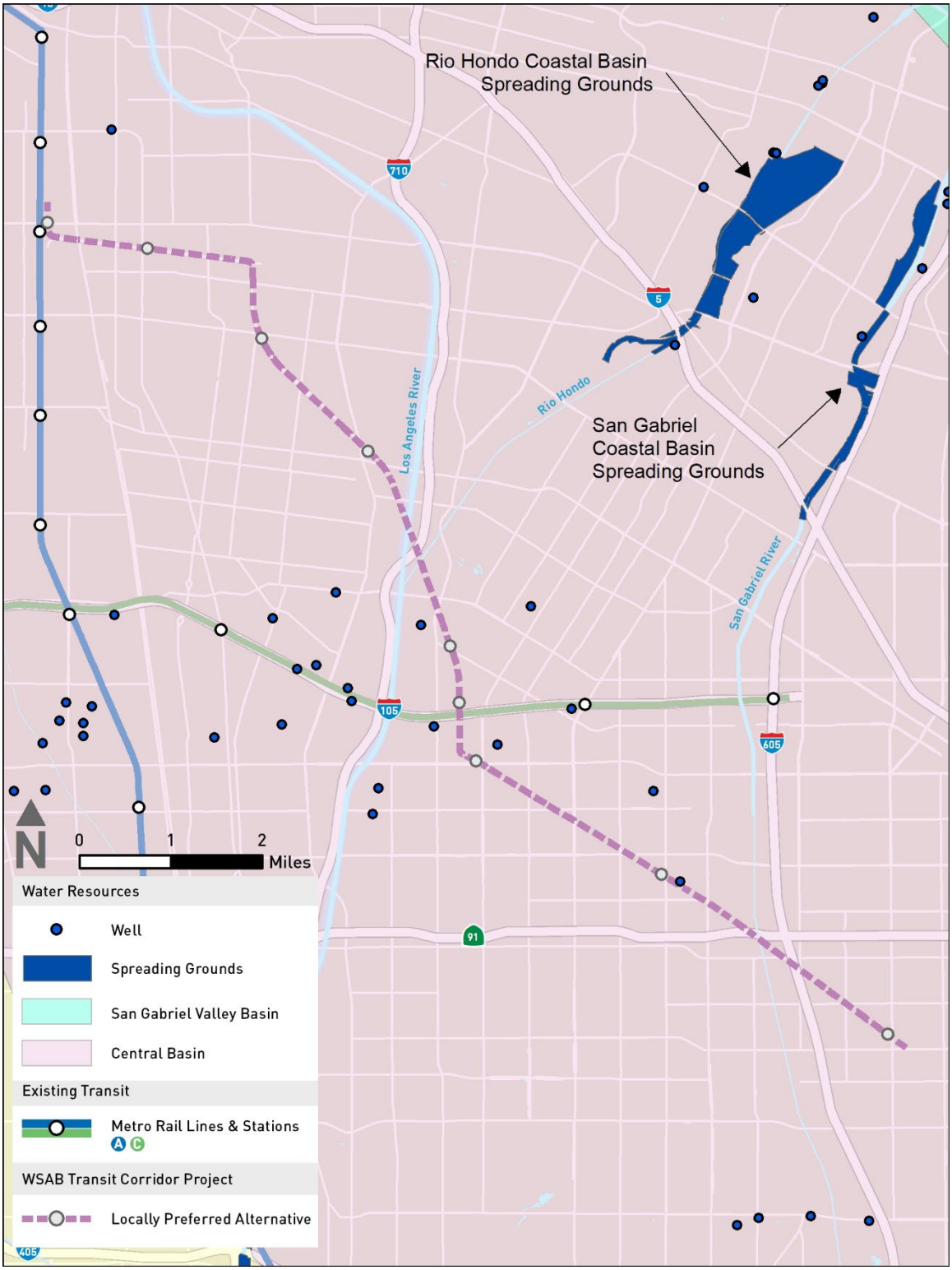
An existing underground high-capacity water well (referred to as High-Capacity Well No. 1) is located at 9944 Flora Vista Street in the City of Bellflower. The underground well extends from 800 to 1,300 feet below ground. Support facilities are located at-grade above the underground well at the closest distance of 20 feet to the edge of the railroad right-of-way. These facilities are outside the LPA footprint.

4.11.3 Environmental Consequences/Environmental Impacts

4.11.3.1 Project Design Features

The LPA will require construction activities (e.g., demolition and removal of built features, excavation, water flow diversions) and introduction of new or modified features (bridge abutments and columns) within and in the vicinity of existing rivers that could have direct and indirect water quality impacts. As a result, the LPA will be required to obtain various mandatory permits prior to construction, as described in Section 4.9.1.1 in the Geotechnical, Subsurface, and Seismic Section and Section 2.5.3 in Chapter 2, Alternatives Considered/ Project Description, of this Final EIS/EIR. Therefore, the design features summarized below are considered to be part of the LPA, and Metro will confirm that these design features are implemented to avoid and minimize impacts on water quality and water resources.

Figure 4.11-4. Groundwater Basins and Facilities



Source: Metro 2024d

The *West Santa Ana Branch Transit Corridor Project Environmental Study, Sustainability Stormwater Study – Revision 1* (Metro 2020a) was developed to evaluate the feasibility of capturing and managing stormwater and associated pollutants, prioritize projects for future implementation, and identify stormwater-related sustainability features and strategies along the project alignment to support Metro sustainability goals and to comply with stormwater quality regulations. The study provides recommendations for site design and low impact development (LID) stormwater BMP implementation locations along the project alignment. These BMPs will maintain pre-development flow volumes, peak flow rates, and times of concentration, and will avoid and minimize adverse effects to water quality and water resources. These recommendations will be included in the final construction contract as applicable to the LPA:

- **Stations:** General recommendations for LID BMPs at aerial and at-grade stations include bioretention/biofiltration planters for canopy, roof, and platform runoff; impervious area disconnection (direct impervious sheet flow to landscape areas); and permeable pavement.
- **Station Parking:** LID BMP implementation recommendations at station parking facilities include the following: grade parking facilities to perimeter landscaping areas, design and construction of zero-height curb or curb cuts to direct parking area sheet flow runoff into landscaping and biofiltration areas, bioretention/biofiltration within the perimeter (or interior) landscaped areas, and other LID features, such as tree wells and permeable pavement.
- **MSF:** Recommended LID BMPs for the MSF site include biofiltration and capture and reuse. Roof rainfall runoff could be collected from buildings, treated, and stored for use for the wash facilities; however, the feasibility of this is based on anticipated water demand/usage.
- **Aerial Crossings:** LID BMP implementation recommendations for aerial crossings consist of lined bioretention/biofiltration with underdrain between columns beneath viaducts and lined bioretention/biofiltration with underdrain adjacent to crossing/bridge abutments.
- **At-grade Track:** Stormwater sustainability, including water quality treatment options along the at-grade tracks, is typically limited because of the undesirability of infiltration and vegetation limitations in these areas. However, ballasted track maintains permeability and can be considered a self-treating area based upon research conducted by the Colorado Department of Transportation (2012).

During final design, the LID BMP recommendations will be validated. Where infiltration BMPs are proposed, site-specific geotechnical investigations will be conducted to verify the feasibility of installing the BMPs.

In addition to the LID BMPs recommended by the Sustainability Stormwater Study (Metro 2020a), the following design features will be applicable to the LPA:

- To comply with the LA County MS4 NPDES permit and LA County Standard Urban Stormwater Mitigation Plan (LACDPW 2000b), a site-specific LID plan will be developed for the LPA that will implement LID design standards such as incorporating structural and nonstructural treatment controls and hydromodification controls, and good housekeeping design BMPs intended to reduce erosion. Other

LID design standards intended to reduce or minimize generation of stormwater pollutants include the following:

- Do not exceed the estimated pre-development rate for developments where the increased peak stormwater discharge rate would result in increased potential for downstream erosion
- Conserve natural areas and minimize the extent of disturbed areas
- Protect slopes and channels
- Provide stenciling and signage for storm drain system
- Properly design outdoor materials storage areas
- Properly design trash storage areas
- Provide proof of ongoing BMP maintenance
- Design standards for structural or treatment control BMPs
- Design and construct appropriate onsite stormwater management facilities to control peak flow rates and volumes and to capture and treat runoff prior to discharge, especially for pollutant-generating surfaces such as station parking areas, access roads, new local street improvements, reconstructed interchanges, and new or relocated roads and highways
- Use LID techniques to retain runoff onsite and to reduce offsite runoff, to the extent practical; consider the use of constructed wetland systems, biofiltration and bioretention systems, wet ponds, organic mulch layers, planting soil beds, and vegetated systems (biofilters), such as vegetated swales and grass filter strips
- Locate all constructed stormwater BMPs outside of natural water bodies and streams
- Use portions of the maintenance site for onsite infiltration of runoff, if feasible, or for stormwater detention, if not feasible

- Comply with the IGP. The IGP requires preparation and implementation of an industrial SWPPP, which will identify BMPs to reduce or prevent industrial pollutants in stormwater and authorized nonstormwater discharges. The industrial SWPPP also requires implementation of a monitoring implementation plan and annual comprehensive facility compliance evaluation to assess BMP performance. The industrial SWPPP will include site-specific measures such as:

  - Implement nonstructural source-control BMPs, including good housekeeping, preventative maintenance, spill prevention and response, material handling and storage, waste handling and recycling, employee training, inspections, record keeping and internal reporting, and quality assurance
  - Construct berms, ditches, or simple curbing to prevent run-on and divert runoff water from around the industrial activity area
  - Provide cover over materials, chemicals, and pollutant sources to prevent contact with stormwater and unauthorized nonstormwater discharges; where possible, move outdoor operations indoors
  - Provide secondary containment around storage tanks and other areas to collect any leaks or spills
  - Develop a Spill Prevention, Control and Countermeasures Plan
  - Designate equipment wash areas
  - Comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and

accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and proper storage of hazardous materials

- Comply with the Caltrans Statewide MS4 Permit. This Order regulates both stormwater and nonstormwater discharges from Caltrans-owned MS4s and Caltrans rights-of-way. LID design features would be implemented in compliance with Caltrans Stormwater Management Plan requirements and design standards to avoid and minimize impacts to water resources.
- Establish track elevation to prevent saturation and infiltration of flood water into the subballast. During the design storm, maintain adequate freeboard between the subballast and the water surface elevation.
- Minimize impacts on existing flood control channels. Design and orient bridge piers to be parallel to the water flow direction.
- Maintain bridge deck low chord elevations to be higher than the existing Union Pacific Railroad rail crossings over the Los Angeles River, the Rio Hondo channel, and the San Gabriel River.
- Conduct engineering analysis of channel hydraulics during detailed final design to evaluate impacts on channel water surface elevation and available freeboard.
- Section 408 compliance will be a mandatory requirement and is therefore a project design feature. Compliance will be performed during the final design and permit approvals phase.

4.11.3.2 No Build Alternative

Under the No Build Alternative, the LPA would not be developed. However, several infrastructure and transportation-related projects would be implemented and built in the vicinity of the LPA alignment. These projects could have impacts on hydrology and surface water bodies, water quality, floodplains, and groundwater. Planned projects would be subject to separate environmental analyses to evaluate potential impacts. Implementation of these projects, including operations and maintenance, would be subject to the regulatory standards, conditions, and permitting requirements discussed in Section 4.9.1.1 in the Geotechnical, Subsurface, and Seismic Section, as applicable to the LPA. Compliance with these standards would minimize impacts, and residual impacts are expected to be minor. Therefore, no adverse effects to hydrology and surface water bodies, water quality, floodplains, or groundwater are anticipated from the No Build Alternative.

4.11.3.3 Locally Preferred Alternative

Hydrology and Surface Water Bodies

The LPA will convert existing pervious areas to impervious areas within the Affected Area for water resources. Specifically, increases in impervious surfaces will result from the alignment guideway, stations, parking facilities, local street improvements, MSF, and TPSS facilities. Conversion of pervious to impervious area decreases infiltration, which increases runoff volumes and peak flow rates, and changes the timing of peak flows. Development such as new parking areas, LPA-related structures, or other new surfaces within the already urbanized corridor will also affect existing grades or drainage lines, including local storm drains and regional flood control facilities that may need to be adjusted for project implementation. The project features and BMPs referenced in Section 4.11.3.1 include site design and LID stormwater BMPs that will maintain pre-development flow volumes, peak flow rates, and times of concentration. These BMPs will avoid and minimze adverse effects to the project area. Therefore, implementation of the LPA will not result in adverse effects to hydrology and water bodies.

As summarized in Table 4.11.3, the LPA total disturbed area is 208.2 acres, with a total of 37.3 acres that will be converted from pervious area to new impervious area because of construction of pavement, rooftops, and other hard surfaces. By comparison, 32 percent of the Los Angeles River watershed (169,800 acres) and 29 percent of the San Gabriel River watershed (118,800 acres) are estimated to be impervious based on assumptions of existing impervious land use type (LARWQCB 2017a; LACDPW 2017a; Weston Solutions, Inc. 2005). The increase in impervious area resulting from LPA implementation will affect approximately 0.01 percent of the overall watershed area (approximately 288,600 acres total) and, therefore, will cause a negligible overall decrease in infiltrative capacity in these watersheds. As such, the LPA implementation will not result in adverse effects to hydrology.

Table 4.11.3. Change in Impervious Area—Locally Preferred Alternative

Component	Watershed	Total Disturbed Area[1] (acres)	Existing Impervious Area[2] (acres)	Proposed Impervious Area[3] (acres)	New Impervious Area[4] (acres)
Rail/Stations/ Local Modifications	Los Angeles River, San Gabriel River	206.2	132.9	169.6	36.7
TPSS Facilities	Los Angeles River, San Gabriel River	2.0	1.3	1.9	0.6
Total	Los Angeles River, San Gabriel River	208.2	134.2	171.6	37.3

Source: Metro 2024d
Notes:
[1] Total Disturbed Area is the area of disturbed soil generated by the LPA.
[2] Existing Impervious Area is the pre-construction impervious surfaces that exist within the project right-of-way.
[3] Proposed Impervious Area is the area consisting of replaced impervious surfaces and new impervious surfaces within the project right-of-way.
[4] New Impervious Area is the conversion of existing pervious (unpaved) areas to impervious area (e.g., the difference between Existing Impervious Area and Proposed Impervious Area = New Impervious Area).
Totals due not equal due to rounding.
TPSS = traction power substation

The LPA alignment crosses several LA County, local, and regional storm drainage facilities, which are shown on Figure 4.11-2. A list of affected LACFCD regional storm drainage systems for the LPA is provided in Section 5.3.1 of the Water Resources Impact Analysis Report.

Modifications to local storm drain systems will be required to discharge runoff from the alignment. New drainage pipes under at-grade track will collect stormwater to earthen or concrete drainage swales running parallel to the track. Drainage systems within the portions of aerial track and near tunnel portals will collect and discharge stormwater to the existing local stormwater infrastructure. These modifications are required and are not expected to adversely affect existing storm drains because implementation of the LPA will not substantially alter the existing drainage patterns.

Implementation of the LPA will modify existing facilities by adding new rail structures. New and modified overhead rail structures at I-105 are likely to increase the amount of impervious surface area within the Caltrans rights-of-way. These modifications are not expected to substantially alter the existing drainage patterns or storm drainage systems.

To minimize impacts on hydrology and water bodies, implementation of the LPA will include the applicable design features discussed in Section 4.11.3.1 and will maintain pre-development hydrology characteristics. LPA implementation will comply with the post-construction and hydromodification requirements of the LA County MS4 NPDES permit and other local stormwater requirements, as discussed in Section 3 of the Water Resources Impact Analysis Report. New or modified storm drainage systems will be designed to meet local and regional standards. Under NEPA, LPA implementation will not result in adverse effects to hydrology and surface water bodies and mitigation will not be required.

Water Quality

The LPA will result in new impervious areas that will increase the pollutant concentration of site runoff, resulting in an increase of total pollutant loading on the existing stormwater system. As indicated in Table 4.11.3, the LPA will result in conversion of 37.3 acres from pervious area to impervious area. Conversion of pervious to impervious area decreases infiltration, which increases the concentration and total pollutant load in stormwater runoff. Because the LPA will be located in a highly urbanized area and along major roadways and rail corridors, and the new impervious surfaces will be distributed across the corridor, the new impervious area will represent a negligible overall increase in total impervious area with respect to the watersheds and the corresponding potential for increases in pollutant loads in stormwater runoff. Implementation of the LPA will be subject to the regulatory standards, conditions, and permitting requirements described in Section 4.9.1.1 in the Geotechnical, Subsurface, and Seismic Section (e.g., CWA and NPDES permit requirements). The applicable LPA design features described in Section 4.11.3.1 will be implemented to address potential effects and minimize direct impacts on water quality. Under NEPA, the LPA will not result in adverse effects to water quality in the Affected Area for water resources and mitigation will not be required.

Rail Operations: Rail operations will contribute pollutants in concentrations and amounts that are typical for transportation facilities, including total suspended solids, metals, oil and grease, and debris. As discussed in Section 4.11.1.2, impacts on water quality from rail operations can be generally quantified by length of track. The LPA will include 2.4 miles of aerial track and 12.1 miles of at-grade track. Because the LPA will be located in a highly urbanized area and along

existing major roadways and rail corridors, the character and concentration of pollutants in runoff will be similar to existing conditions. The applicable design features described in Section 4.11.3.1 will be implemented to minimize direct water quality impacts from rail operations. Under NEPA, the LPA will not result in adverse effects to water quality from rail operations.

Additionally, new rail facilities and impervious surfaces proposed within Caltrans rights-of-way will contribute pollutants in concentrations and amounts that are typical for transportation facilities. To minimize impacts on water quality within Caltrans rights-of-way, the applicable design features listed in Section 4.11.3.1 will be implemented, including site design and LID stormwater BMPs in compliance with the Caltrans Statewide NPDES Permit that will minimize potential direct water quality impacts resulting from new rail facilities and impervious surfaces.

Stations, Parking Facilities, and Local Street Improvements: Development of stations, parking facilities, and local street improvements could result in water quality impacts due to the new impervious surfaces that will be developed. Conversion of pervious to impervious area decreases infiltration, which increases the concentration and total pollutant load in stormwater runoff. In addition to new impervious surfaces, stations, street improvements, and parking facilities will increase vehicle and pedestrian traffic, which is expected to increase loads for pollutants associated with transportation facilities, such as heavy metals, nutrients, pesticides, sediments, trash and debris, oxygen-demanding substances, and oil and grease (California Stormwater Quality Association [CASQA] 2003). However, the types of pollutants will be similar to those under existing conditions. In addition, the design features described in Section 4.11.3.1 will be implemented to minimize direct water quality impacts resulting from stations, parking facilities, and local street improvements. Under NEPA, the LPA will not result in adverse effects to water quality from stations, parking facilities, and local street improvements.

Traction Power Substations: TPSS sites will result in water quality impacts due to associated new impervious surfaces. Conversion of pervious to impervious area decreases infiltration, which increases the concentration and total pollutant load in stormwater runoff. In addition to new impervious surfaces, TPSS operations and maintenance are expected to increase loads for pollutants associated with industrial activities, such as sediment, nutrients, trash, metals, oil and grease, and organics (CASQA 2003). However, the design features described in Section 4.11.3.1 will be implemented to address and minimize direct impacts on water quality associated with TPSS facilities. Under NEPA, the LPA will not result in adverse effects to water quality from TPSSs.

Floodplains

The LPA will cross three major flood control channels, each with FEMA-established floodplains: the Los Angeles River, the Rio Hondo channel, and the San Gabriel River. Historic floodplains are protected from these rivers by levees and engineered channels constructed by the USACE. The FEMA-delineated 100-year floodplains are contained within the banks of the flood control channels for all three water bodies. The LPA will be designed in compliance with Executive Orders 11988 and 13690. Tracks and structures associated with the LPA will be built above the existing river channel walls or levees. The LPA will not encroach along the length of the river or result in incompatible development within the floodplain. Therefore, impacts will be minimized, and the LPA will not result in adverse effects to floodplains.

The LPA alignment will cross the Los Angeles River, the Rio Hondo channel, and the San Gabriel River, and a portion of the alignment is located within Flood Zone X. Operation of the LPA will generally be outside the flood control channels and in areas of minimal flood hazard and, therefore, protected from flooding except during extreme events.

For each river crossing, a location hydraulic study was prepared to evaluate the bridge structure's effects on the hydraulic conditions within the river channel and to estimate the change in water surface elevations within the channel. The location hydraulic studies are included as appendices to the Water Resources Impact Analysis Report. The new bridge structures in the Los Angeles River and the Rio Hondo channel will be constructed in the floodplain north of the existing bridges. To limit impacts on floodwaters and the existing flood control channels, aerial LRT structures will be elevated above existing levees. Because the bridge piers will be built in the channel, they will be subject to flooding. The Project does not propose to alter or replace any existing embankments or piers within the channel. The impact on water surface elevation in each river channel will be minimal (less than 12 inches), and flood flows will continue to be fully contained within the channel (Metro 2017a; 2017b).

The new bridge structure in the San Gabriel River will be constructed in the floodplain to replace the existing bridge. To limit impacts on floodwaters and the existing flood control channel, aerial LRT structures will be elevated above the existing channel walls. Because the bridge piers will be built in the channel, they will be subject to flooding. The Project does not propose to alter or replace any existing embankments or piers within the channel. Due to the hydraulic conditions in the channel, the impact on water surface elevation will reduce the water surface in the channel near the project site, and flood flows will continue to be fully contained within the channel (Metro 2017e).

The LPA will not have a longitudinal encroachment into the floodplain or impact beneficial floodplain values. The LPA will not increase flooding risk by supporting incompatible development within the floodplain. Furthermore, compliance with local and federal floodplain regulations will avoid and minimize impacts on the flood control facilities. Under NEPA, the LPA will not result in adverse effects to floodplains and mitigation will not be required.

The I-710 and SR-91 freeway crossings occur near the 100-year flood zone as well. There will be no longitudinal encroachment into the floodplain or impact on beneficial floodplain values. Compliance with the Caltrans MS4 permit, along with local and federal floodplain regulations, will avoid and minimize impacts on the flood control facilities within Caltrans rights-of-way. Therefore, no adverse effects on floodplains will occur with Caltrans rights-of-way.

Groundwater

This section presents the evaluation of groundwater as a water resource (groundwater supply and quality). Evaluation of groundwater contamination is presented in the Hazardous Materials Impact Analysis Report.

LPA implementation will increase the impervious area, thereby decreasing groundwater recharge. As Table 4.11.3 shows, the LPA will convert 37.3 acres from pervious area to new impervious area. Although the amount of new impervious area has increased from that of Alternative 3 evaluated in the Draft EIS/EIR, the LPA's new impervious area represents a 0.01 percent increase in the impervious area in the watershed, which will cause a negligible impact on groundwater recharge. In comparison, 32 percent of the Los Angeles River watershed (168,800 acres) and 29 percent of the San Gabriel River watershed (118,800 acres) are estimated

to be impervious based on assumptions of land use type (LARWQCB 2017b; LACDPW 2017b; Weston Solutions, Inc. 2005). Groundwater recharge within the Central Basin is primarily from spreading grounds and overland surfaces. By comparison, the entire basin is 177,000 acres (DWR 2004).

Because the LPA will be in a highly urbanized area and along existing major roadways and rail corridors, the new impervious area represents a negligible overall increase in total impervious area with respect to the watersheds and the corresponding groundwater recharge areas. To minimize the impacts of new impervious area, implementation of the LPA will comply with the post-construction and hydromodification requirements of the LA County MS4 NPDES permit, as discussed in Section 3.3 of the Water Resources Impact Analysis Report, and will implement the applicable design features discussed in Section 4.11.3.1. These design features include LID treatment controls, such as landscaping, to help offset the loss of permeable surfaces. Furthermore, most recharge to the groundwater supply in LA County comes from large, natural stream systems or constructed groundwater recharge basins, which will be minimally affected by the Project. Therefore, the LPA impacts on groundwater resources will be minimized and will not result in adverse effects to groundwater.

An evaluation of groundwater with respect to geotechnical impacts is presented in the *West Santa Ana Branch Transit Corridor Project Final Geotechnical, Subsurface, and Seismic Impact Analysis Report* (Metro 2024e), and Section 4.9, Geotechnical, Subsurface, and Seismic of this Final EIS/EIR.

An existing high-capacity water well in the City of Bellflower is located near the LRT alignment. The existing grade and right-of-way will be maintained adjacent to the water well site boundary. This well is outside the footprint of the LPA, and the well production depth is 800 to 1,300 feet below ground. Therefore, after evaluation of the existing facility's proximity to the LRT alignment, no impact on existing water resources is anticipated. See Section 4.4 of the Water Resources Impact Analysis Report for additional information regarding this well.

4.11.3.4 Design Option: Close 186th Street

Hydrology and Surface Water Bodies: Impacts on hydrology and surface water bodies from the LPA with the design option are anticipated to be similar to the impacts of the LPA without the design option at this location. Therefore, conclusions provided for the LPA without the design option are also applicable to the LPA with the design option. Under NEPA, the LPA with the design option would not result in adverse effects to hydrology and surface water bodies.

Water Quality: Impacts on water quality from the LPA with the design option are anticipated to be similar to the impacts of the LPA without the design option at this location. Therefore, conclusions provided for the LPA without the design option are also applicable to the LPA with the design option. Under NEPA, the LPA with the design option would not result in adverse effects to water quality.

Floodplains: The design option is outside of the regulatory floodplains. Under NEPA, the design option would not generate floodplain impacts, and no adverse effects would occur.

Groundwater: The LPA with the design option is substantially similar to the LPA without the design option with regard to groundwater conditions, potential impacts, and effect determinations. Therefore, the conclusions provided for the LPA without the design option

are also applicable to the LPA with the design option. Under NEPA, the design option would not result in adverse effects to groundwater.

4.11.3.5 Maintenance and Storage Facility

Hydrology and Surface Water Bodies: The potential for hydrology and surface water body impacts from the MSF is attributable to changes in impervious surface. While the MSF is not immediately adjacent to surface waters, the MSF is located in the Los Cerritos channel subwatershed of the San Gabriel River watershed. The change in impervious area related to the MSF is provided in Table 4.11.4. To minimize impacts on hydrology and water bodies from the MSF, the design features discussed in Section 4.11.3.1 will be implemented and will maintain pre-development hydrology characteristics. The MSF will comply with the post-construction and hydromodification requirements of the LA County MS4 NPDES permit, as discussed in Section 3 of the Water Resources Impact Analysis Report. New or modified storm drainage systems will be designed to meet local and regional standards. Under NEPA, no adverse effects to hydrology and surface water bodies from the MSF will occur, regardless of facility location.

Table 4.11.4. Maintenance and Storage Facility Change in Impervious Area

Component	Watershed	Total Disturbed Area (acres)	Existing Impervious Area (acres)	Proposed Impervious Area (acres)	New Impervious Area[1] (acres)
MSF	San Gabriel River	22.0	6.6	10.2	3.6

Source: Metro 2024d
Notes: [1] New Impervious Area is the conversion of existing pervious (unpaved) areas to impervious area.
MSF = maintenance and storage facility

Water Quality: Development of the MSF will result in water quality impacts due to the new impervious surfaces required. Conversion of pervious to impervious area decreases infiltration, which will increase the pollutant concentration in site runoff, resulting in an increase of total pollutant loading on the existing stormwater system. In addition to new impervious surfaces, the maintenance and storage activities are expected to increase pollutant loads for pollutants associated with industrial activities, such as sediment, nutrients, trash, metals, oil and grease, pesticides, and organics (CASQA 2003). However, design features discussed in Section 4.11.3.1 will be implemented to minimize direct impacts on water quality associated with the MSF. Under NEPA, the MSF will not result in adverse effects related to water quality.

Floodplains: The MSF is located outside of the 100-year flood zone. Under NEPA, the MSF will not result in adverse effects related to floodplains.

Groundwater: The groundwater impacts associated with the MSF will result from increased impervious surfaces. To minimize the impacts of new impervious areas, the MSF will comply with post-construction and hydromodification requirements and will implement the applicable design features discussed in Section 4.11.3.1. These design features include LID treatment controls, such as landscaping and permeable materials, to help offset the loss of permeable surfaces and provide treatment before runoff infiltrates the ground. The MSF site is outside of groundwater recharge areas. Under NEPA, no adverse effects to these groundwater recharge facilities will occur as a result of the MSF.

4.11.3.6 U.S. Army Corps of Engineers Facilities

Impacts from No Project Alternative

LPA-related operation activities would not occur under the No Project Alternative; therefore, there would be no impacts on water quality standards.

Direct and Indirect Impacts from the Locally Preferred Alternative

New permanent structures will be implemented within USACE jurisdictional limits in the Los Angeles River, Rio Hondo, and San Gabriel River channels. The quantities of total fill materials will be determined during final design. To conservatively estimate the direct impacts of the LPA on USACE facilities, the areas of the LPA over the channels within USACE CWA Section 404 jurisdictional limits are used instead. These areas provide a comparative estimate of the level of impacts that will result from the discharge of dredged and fill materials. Table 4.11.5 summarizes these conservatively estimated permanent impacts within USACE jurisdictional limits.

Table 4.11.5. Area of Proposed Facilities within USACE Jurisdictional Limits

River Crossing	Maximum Permanent Impact Area of Facilities within USACE Jurisdiction (acres)
Los Angeles River	1.31
Rio Hondo	0.47
San Gabriel River	0.38

Source: Metro 2024d

The MSF and design option will not be located within the right-of-way of any USACE facilities; therefore, there will be no impacts on USACE facilities from construction of the MSF and design option.

Channel Impacts

Permanent structures built in the channels, such as bridge piers and columns, within FEMA-established floodplains could impede flood flows and divert stormwater runoff or adversely affect the flood control function in the Los Angeles River or other regional flood control facilities. As discussed in Section 4.11.2.3, the potential impact on water levels in each river will be less than 1 foot, and flood flows will continue to be fully contained within the channel (Metro 2017a and 2017b). USACE will review the design and hydraulic modeling of any improvements within these channels as part of the Section 408 review. Approval will be required from USACE to ensure the LPA will not adversely impact the flood capacity of the channels.

Compliance with Restrictions on Dredge and Fill

Because the LPA involves the discharge of dredged and fill materials into the Los Angeles River, Rio Hondo, and San Gabriel River, which are classified as waters of the United States, the LPA will comply with the guidelines promulgated by USEPA's Administrator in conjunction with the Secretary of the Army under the authority of CWA Section 404 and as amended. It is through the 404 permit that the Project will comply with Section 404 of the Clean Water Act.

Project Measures Demonstrating Compliance with Existing Water Quality Regulations

Operations and Maintenance

As described in Section 4.11.1, the LPA will be subject to regulatory standards, conditions, and permitting requirements (e.g., CWA and NPDES permit requirements). The County MS4 permit requires the implementation of site design, source control, and treatment control BMPs to the maximum extent practical. Compliance with the MS4 permit will be mandatory and a condition of approval of the final construction permits for construction within public rights-of-way. Compliance with the MS4 permit will also meet the TMDL standards. Additionally, the implementation of the LPA design features defined in Section 4.11.3.1 will be mandatory, so the direct and indirect impacts on water quality will be avoided or minimized. Therefore, potential impacts will be minimized, and no adverse effects on water quality standards or WDRs will occur as a result of operations and maintenance of the LPA.

Evaluation of Extent of Degradation of the Waters of the United States

The discharge of dredged and fill materials will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, fish, shellfish, wildlife, and special aquatic sites because of implementation of the LPA design features defined in Section 4.11.3.1. No significant adverse or long-term effects on aquatic ecosystem diversity, productivity, stability, recreational, aesthetic, and economic values will occur.

Significant Adverse Impacts on Human Health and Welfare: Adverse impacts on human health and welfare are evaluated in terms of the impacts on beneficial uses for the Los Angeles River, Rio Hondo, and San Gabriel River. These beneficial uses are based on those in the *Water Quality Control Plan,* the *Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (LARWQCB 1995), as identified in Section 4.11.2.2. The LPA will result in new impervious areas that could contribute nonpoint source stormwater pollution that will be characteristic of the operational land uses. As a result, the LPA will generate stormwater contaminants that are characteristic of similar transportation facilities (e.g., total suspended solids, oils and grease, trash and debris, and similar). With implementation of the LPA design features described in Section 4.11.3.1, the LPA will be in compliance with existing NPDES permits. Compliance with these permits will include compliance with state and federal water quality regulations and standards and will reduce impacts to a less than significant level.

Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity, and Stability: The LPA could temporarily disturb the LA, Rio Hondo, and San Gabriel River channels during construction, which could affect local aquatic ecosystem diversity, productivity, and stability. The magnitude of the impacts will be proportionate to the size of the LPA, as shown in Table 4.11.5. Once construction is complete, these impacts will be expected to end because flow conditions within the channels will be similar to existing conditions.

Significant Adverse Effects on Recreational, Aesthetic, and Economic Value: The LPA will cause temporary effects during construction, which will limit recreational and other access to some portions of the channel and could cause aesthetic impacts. The magnitude of the impacts will be proportionate to the size of the LPA, as shown in Table 4.11.5. Once construction is complete, these impacts will end because access to the channels will be replaced and enhanced.

Findings

The LPA will create discharge of dredged and fill materials in the Los Angeles River, Rio Hondo, and San Gabriel River channels within the LPA limits. Table 4.11.5 shows that the construction lengths and magnitude of the impacts from the LPA will be approximately 1,770 feet. With implementation of the project features described in Section 4.11.3.1 and the project measures identified in Section 4.11.4.1, the LPA will be in compliance with existing NPDES permits, which require implementation of water quality protection measures and by definition meet the standard of minimizing water quality impacts on the maximum extent practicable. Compliance with existing regulatory requirements, including compliance with state and federal water quality regulations and standards and implementation of construction and post-construction BMPs, will reduce impacts to USACE facilities to a less than significant level.

4.11.4 Project Measures and Mitigation Measures

4.11.4.1 Project Measures

Refer to Section 4.11.3.1 for a summary of design features that will apply to the LPA, design option, and MSF.

4.11.4.2 Mitigation Measures

With implementation of the design features described in Section 4.11.3.1, operation and maintenance of the LPA, design option, and MSF will not result in adverse effects to water resources; therefore, mitigation measures are not required.

4.11.5 California Environmental Quality Act Determination

4.11.5.1 Threshold WR-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

No Project Alternative

Under the No Project Alternative, implementation of the LPA would not be introduced into the Affected Area for water resources, and no changes or impacts consistent with the LPA would occur. Therefore, there would be no impacts on surface or groundwater quality and mitigation would not be required.

Locally Preferred Alternative

As described in Section 4.11.3, implementation of the LPA will result in new impervious areas that could increase the pollutant concentration in site runoff, resulting in an increase of total pollutant loading on the existing stormwater system. Additionally, rail operations will contribute pollutants in concentrations and amounts that are typical for transportation facilities and increased operation, including total suspended solids, metals, oil and grease, and debris. Impacts on water quality from rail operations can be generally quantified by length of track. As described in Section 4.11.3, the LPA will be subject to the LA County MS4 NPDES permit and IGP during the operational phase. The MS4 NPDES permit and other local stormwater policies require implementation of site design, source control, and treatment control BMPs to the maximum extent practical. The IGP requires preparation of an industrial SWPPP and a monitoring plan for industrial facilities, including vehicle maintenance facilities associated with transportation operations, as described in Section

4.11.3.1. With implementation of the design features described in Section 4.11.3.1, the LPA will not result in adverse effects to water quality; therefore, mitigation will not be required.

Design Option: Close 186th Street

Impacts on water quality that could violate water quality standards or degrade surface or groundwater quality associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. To address these impacts, the LPA with the design option is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA without the design option. Therefore, implementation of the LPA with the design option would not violate any applicable water quality standards or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant; therefore, mitigation measures would not be required.

Maintenance and Storage Facility

Impacts on water quality that could violate water quality standards or degrade surface or groundwater quality associated with the MSF will be similar to impacts associated with the implementation of the LPA. To address these impacts, the MSF is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA. Therefore, implementation of the MSF will not violate any applicable water quality standards or otherwise substantially degrade surface or groundwater quality, and impacts will be less than significant; therefore, mitigation measures will not be required.

4.11.5.2 Threshold WR-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, and no changes to groundwater resources consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on groundwater recharge and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA will result in 37.3 acres of new impervious area within the Central Basin. Groundwater recharge within the Central Basin is primarily from spreading grounds and overland surfaces. By comparison, the entire basin is 177,000 acres (DWR 2004). Spreading grounds are located along the Los Angeles River, Rio Hondo, and San Gabriel River. The Rio Hondo Coastal Basin Spreading Grounds are 3.5 miles northeast of the Rio Hondo crossing. The Dominguez Gap Spreading Grounds are approximately 6 miles south of the Los Angeles River crossing. The San Gabriel Coastal Basin Spreading Grounds are approximately 5 miles north of the San Gabriel River crossing. Direct precipitation on the basin within the proposed Affected Area is not a major source of groundwater recharge. However, groundwater recharge could be impeded if a substantial amount of pervious area were converted to impervious surfaces. The increase in impervious surfaces within the project area will be a negligible fraction of the entire aquifer area and will not affect the spreading grounds; therefore, it will not significantly affect groundwater recharge.

To minimize the impacts of new impervious area, the Project will comply with the post-construction and hydromodification requirements of the LA County MS4 NPDES permit, as discussed in Section 3.3 of the Water Resources Impact Analysis Report, and will implement the design features discussed in Section 4.11.3.1. These design features include LID treatment controls, such as landscaping and permeable materials, to help offset the loss of permeable surfaces and provide treatment before runoff infiltrates the ground. Furthermore, most recharge to the groundwater supply in LA County comes from large, natural stream systems or constructed groundwater recharge basins, which will be minimally affected by the Project. Therefore, impacts on groundwater resources will be minimized, and the LPA will not result in adverse effects to groundwater.

With implementation of the design features described in Section 4.11.3.1, operations of the LPA will not substantially degrade groundwater quality, substantially interfere with groundwater recharge, or deplete groundwater resources. Therefore, the impacts will be less than significant, and mitigation will not be required.

Further, as discussed in Section 4.10.3.2 in the Hazards and Hazardous Materials Section of this Final EIS/EIR, sites with known groundwater contamination are present within the Affected Area for water resources of the LPA. It may be necessary to implement long-term groundwater monitoring or dewatering during operation. If this location also corresponds to a known groundwater release site, the dewatering activity will also need to include the handling of contaminated groundwater. If long-term groundwater monitoring or dewatering is necessary at a location where groundwater has been contaminated by hazardous materials, groundwater dewatering would affect operation of the Project by requiring ongoing management or treatment. This would be an adverse effect during operation.

Should long-term contaminated groundwater dewatering be necessary, HAZ PM-2 (Disposal of Groundwater [Operation]) will be implemented. This measure requires LARWQCB consultation and permit compliance with *Order No. R4-2018-0125 Discharge of Groundwater from Construction and Project Dewatering to Surface Waters,* which may include water disposal to the sanitary sewer or the proper onsite management of contaminated groundwater and disposal or recycling of contaminated groundwater offsite at appropriate waste management facilities. With implementation of this project measure, no adverse effects related to groundwater monitoring or dewatering will occur during operation.

Design Option: Close 186th Street

Impacts on groundwater supplies associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. To address these impacts, the LPA with the design option is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA without the design option. The increase in impervious surfaces within the project area would be a negligible fraction of the entire aquifer area and would not affect the spreading grounds; therefore, the LPA with the design option would not significantly affect groundwater recharge.

As discussed in the Hazardous Materials Impact Analysis Report, sites with known groundwater contamination are present within the Affected Area for water resources. Similar to the LPA without the design option, it may be necessary to implement long-term groundwater monitoring or dewatering during operation near the design option. If the design option location also corresponds to a known groundwater release site, the dewatering activity would also need to include the handling of contaminated groundwater. This would

also occur for the LPA without the design option in this location. If long-term groundwater monitoring or dewatering is necessary at a location where groundwater has been contaminated by hazardous materials, groundwater dewatering would affect operation of the LPA with or without the design option by requiring ongoing management or treatment. This would be an adverse effect during operation.

Should long-term contaminated groundwater dewatering be necessary, HAZ PM-2 (Disposal of Groundwater [Operation]) would be implemented. This measure requires LARWQCB consultation and permit compliance with *Order No. R4-2018-0125, Discharge of Groundwater from Construction and Project Dewatering to Surface Waters*. This may include water disposal to the sanitary sewer or the proper onsite management of contaminated groundwater and disposal or recycling of contaminated groundwater offsite at appropriate waste management facilities. With implementation of this project measure, no adverse effects related to groundwater monitoring or dewatering would occur during operation of the LPA with the design option.

Maintenance and Storage Facility

Impacts on groundwater supplies associated with the MSF will be similar to impacts associated with implementation of the LPA. To address these impacts, the MSF is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA.

The MSF will result in 3.6 acres of new impervious area. By comparison, the entire basin is 177,000 acres (DWR 2004). Spreading grounds are located along the Los Angeles River, Rio Hondo, and San Gabriel River. The Rio Hondo Coastal Basin Spreading Grounds are 3.5 miles northeast of the Rio Hondo crossing. The Dominguez Gap Spreading Grounds are approximately 6 miles south of the Los Angeles River crossing. The San Gabriel Coastal Basin Spreading Grounds are approximately 5 miles north of the San Gabriel River crossing. Direct precipitation on the basin within the proposed Affected Area is not a major source of groundwater recharge. However, groundwater recharge could be impeded if a substantial amount of pervious area were converted to impervious surfaces. The increase in impervious surfaces from implementation of the MSF will be a negligible fraction of the entire aquifer area and will not affect the spreading grounds; therefore, it will not significantly affect groundwater recharge.

As discussed in the Hazardous Materials Impact Analysis Report, sites with known groundwater contamination are present within the Affected Area for water resources of the LPA. It may be necessary to implement long-term groundwater monitoring or dewatering during operation near the MSF. If the MSF location also corresponds to a known groundwater release site, the dewatering activity will also need to include the handling of contaminated groundwater. If long-term groundwater monitoring or dewatering is necessary at a location where groundwater has been contaminated by hazardous materials, groundwater dewatering will affect operation of the LPA by requiring ongoing management or treatment. This will be an adverse effect during operation.

Should long-term contaminated groundwater dewatering be necessary, HAZ PM-2 (Disposal of Groundwater [Operation]) will be implemented. This measure requires LARWQCB consultation and permit compliance with *Order No. R4-2018-0125, Discharge of Groundwater from Construction and Project Dewatering to Surface Waters*. This may include water disposal to the sanitary sewer or the proper onsite management of contaminated groundwater and

disposal or recycling of contaminated groundwater offsite at appropriate waste management facilities. With implementation of this project measure, no adverse effects related to groundwater monitoring or dewatering will occur during operation of the MSF.

4.11.5.3 Threshold WR-3: Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on drainage patterns in a manner that would result in substantial erosion or siltation, and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA will require existing grade adjustments and an overall increase in impervious surfaces; however, it will not substantially alter drainage patterns. The existing topography within the area will be retained, and existing storm drainage systems will be preserved as much as possible for use during project operation. Therefore, the existing drainage pattern of the site and its surroundings will not change in a manner that will result in significant erosion or siltation onsite or offsite. With implementation of the design features described in Section 4.11.3.1, the LPA will not affect drainage patterns in a manner that will result in substantial erosion or siltation. Therefore, the impact will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Impacts on existing drainage patterns associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. Implementation of the LPA with the design option would not substantially increase runoff that could contribute to exceedance of the capacity of stormwater drainage systems. Therefore, the impact would be less than significant, and mitigation measures would not be required.

Maintenance and Storage Facility

Impacts on existing drainage patterns associated with the MSF will be similar to impacts associated with implementation of the LPA. Implementation of the MSF will not substantially increase runoff that could contribute to exceedance of the capacity of stormwater drainage systems. Therefore, the impact will be less than significant, and mitigation measures will not be required.

4.11.5.4 Threshold WR-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff or would result in flooding on- or offsite?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on drainage patterns in a manner that would result in flooding, and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA will require existing grade adjustments and an overall increase in impervious surfaces. Storm drains will be modified as needed, and existing storm drainage systems will be preserved as much as possible for use during project operation. The existing topography within the area will be retained and drainage patterns will be preserved as much as possible. To minimize the impacts of new impervious area, the LPA will implement the design features discussed in Section 4.11.3.1 and will maintain pre-development hydrology characteristics. The LPA will comply with the post-construction and hydromodification requirements of the LA County MS4 NPDES permit, as discussed in Section 3.3 of the Water Resources Impact Analysis Report. New or modified storm drainage systems will be designed to meet local and regional standards. Therefore, the LPA will not substantially increase the rate or amount of runoff from the project site that could cause flooding onsite or offsite; impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Impacts on existing drainage patterns associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. To address these impacts, the LPA with the design option is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA without the design option. Therefore, implementation of the LPA with the design option would not substantially increase the rate or amount of runoff from the Affected Area, which could cause flooding onsite or offsite; therefore, impacts would be less than significant.

Maintenance and Storage Facility

Impacts on existing drainage patterns associated with the MSF will be similar to impacts associated with implementation of the LPA. To address these impacts, the MSF is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA. Therefore, implementation of the MSF will not substantially increase the rate or amount of runoff from the Affected Area, which could cause flooding onsite or offsite; therefore, impacts will be less than significant.

4.11.5.5 Threshold WR-5: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on drainage patterns in a manner that would contribute to exceedance of the capacity of the stormwater drainage systems or that would provide substantial additional sources of polluted runoff; therefore, mitigation would not be required.

Locally Preferred Alternative

The LPA will not substantially alter drainage patterns or stream courses or substantially increase runoff that will contribute to exceedance of the capacity of stormwater drainage systems, as described in Section 4.11.3. The LPA will also not provide additional sources of polluted runoff. With implementation of the design features described in Section 4.11.3.1, the LPA will not result in adverse effects related to stormwater runoff. Therefore, this impact will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Impacts on existing drainage patterns associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. Therefore, implementation of the LPA with the design option would not substantially increase runoff or provide additional sources of polluted runoff. Therefore, this impact would be less than significant, and mitigation measures would not be required.

Maintenance and Storage Facility

Impacts on existing drainage patterns associated with the MSF will be similar to impacts associated with implementation of the LPA. Therefore, implementation of the MSF will not substantially increase runoff or provide additional sources of polluted runoff. Therefore, this impact will be less than significant, and mitigation measures will not be required.

4.11.5.6 Threshold WR-6: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through addition of impervious surfaces, in a manner which would impede or redirect flood flows?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on drainage patterns in a manner that would impede or redirect flood flows, and mitigation would not be required.

Locally Preferred Alternative

The LPA will cross three major flood control channels, each with FEMA-established floodplains: the Los Angeles River, the Rio Hondo channel, and the San Gabriel River. New

bridges with piers or columns will be constructed within each of these flood control channels. While each crossing will result in some change to the water surface elevation in each channel, changes to the water surface elevation at each river crossing are anticipated to be minor, as described in Section 4.11.3.3.

The floodplains are protected by existing levees or channel walls. The Project will not alter the ability of the channel to convey 100-year flows, and there will be negligible change to the floodplain extents. In addition, tracks and aerial structures associated with the LPA will be built above the existing river channel walls or levees. Therefore, floodplain impacts will be minimized to the greatest extent practicable.

Long-term indirect impacts on floodplains will be unlikely as a result of the LPA because the floodplains are protected by levees and the surrounding areas are already urbanized.

With implementation of the design features described in Section 4.11.3.1, the LPA is not expected to impede or redirect flood flows; impacts will be less than significant; and mitigation will not be required.

Design Option: Close 186th Street

The design option is not located within a floodplain and would not alter any river or stream course or impede any flood flows. Therefore, the LPA with the design option is not expected to impede or redirect flood flows; impacts would be less than significant; and mitigation measures would not be required.

Maintenance and Storage Facility

The MSF is not located within a floodplain and will not alter any river or stream course or impede any flood flows. Therefore, the MSF is not expected to impede or redirect flood flows; impacts will be less than significant, and mitigation measures will not be required.

4.11.5.7 Threshold WR-7: Be subject to inundation by seiche, tsunami, or mudflow?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on flood, tsunami, or seiche zones that would increase the risk of pollution due to inundation, and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA includes construction of new bridges across three major flood control channels: the Los Angeles River, the Rio Hondo, and the San Gabriel River. New bridge deck structures will be built above the existing river channel walls or levees, with new bridge piers or columns built within the channels. Location hydraulic studies were prepared to evaluate the LPA impacts on each river (Metro 2017a; 2017b; and 2017e). The new bridges will raise the water surface elevation within the channel; however, the LPA will not alter the ability of the channel to convey the 100-year flows, and there will be a negligible change to the floodplain extents.

No hazardous materials will be stored in the floodplain so as to avoid accidental release of pollutants in the event of project inundation. Therefore, the LPA will not be at risk to release pollutants due to project inundation, and impacts will be less than significant. Additionally,

the project alignment is more than 20 miles from the ocean or large bodies of water and, therefore, will not be within areas potentially affected by seiches or tsunamis, and no impacts associated with these events will occur. The LPA will not result in adverse effects related to pollutant releases due to inundation; therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The design option is not located within a seiche, tsunami, or mudflow zone. Therefore, the design option would not be subject to inundation from tsunamis, seiches, mudflows, flood waters, or the associated risk of pollutant release.

Maintenance and Storage Facility

The MSF is not located within a seiche, tsunami, or mudflow zone. Therefore, the MSF will not be subject to inundation from tsunamis, seiches, mudflows, flood waters, or the associated risk of pollutant release.

4.11.5.8 Threshold WR-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, and no changes consistent with the LPA would occur within the Affected Area for water resources. Therefore, there would be no impacts on implementation of a water quality control plan or sustainable groundwater management plan, and mitigation measures would not be required.

Locally Preferred Alternative

Operation and maintenance activities of the LPA could increase pollutant discharges to stormwater and/or groundwater that are typical for rail facilities (e.g., oils and grease, metals, solvents, pesticides). The LPA will be subject to the IGP and the LA County MS4 NPDES permit during the operational phase and the CGP during the construction phase, each pursuant to the Los Angeles Basin Plan. The MS4 NPDES permit requires implementation of site design, source control, and treatment control BMPs to the maximum extent practical. The stormwater IGP (Order No. 2014-0057-DWQ [as amended by Order 2015-0122-DWQ]) requires preparation of an industrial SWPPP and a monitoring plan for industrial facilities, including the MSF. Compliance with these permits will be required by the LARWQCB as a condition of approval of the Section 401 Water Quality Certification or as conditions of various NPDES permits prior to implementation. Further, all phases of construction will be subject to the CGP.

The LPA will be located within the Central Basin, which is an adjudicated basin and, therefore, not required to develop a groundwater management plan. The Central Basin is actively managed by WRD and subject to annual reporting for monitoring of groundwater levels and quality to confirm proper resource management. Therefore, the LPA will not obstruct implementation of a water quality control plan or sustainable groundwater management plan because no sustainable groundwater management plan is applicable to the Affected Area. Impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Impacts obstructing implementation of a water quality control plan or sustainable groundwater management plan associated with the LPA with the design option would be similar to impacts associated with implementation of the LPA without the design option. To address these impacts, the LPA with the design option is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA without the design option. Therefore, implementation of the LPA with the design option would not obstruct implementation of a water quality control plan or sustainable groundwater management plan because no sustainable groundwater management plan is applicable to the Affected Area. Impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

Impacts obstructing implementation of a water quality control plan or sustainable groundwater management plan associated with the MSF will be similar to impacts associated with implementation of the LPA. To address these impacts, the MSF is subject to the same regulatory and permitting requirements discussed for the implementation and operation of the LPA. Therefore, implementation of the MSF will not obstruct implementation of a water quality control plan or sustainable groundwater management plan because no sustainable groundwater management plan is applicable to the Affected Area. Impacts will be less than significant, and mitigation will not be required.

4.12 Energy

This section summarizes the energy consumption under existing conditions and the 2042 horizon year for the No Build Alternative and the LPA, including the design option and MSF, and the potential adverse effects and impacts on energy resources. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Energy Impact Analysis Report* (Metro 2024h).

Revisions to this section since the Draft EIS/EIR include converting the units in Table 4.12.2 to standardized British thermal units (BTU). Statewide bills and regulations related to expanding renewable energy supply, reducing dependency on petroleum fuels, and enhancing energy efficiency have been added to the discussion in Section 4.12.1.1. Operational energy consumption estimates for 2042 and under existing conditions (2017) with the LPA were updated using a refined methodology that derived energy consumption factors for LPA components from Metro's Technical Appendix to the Moving Beyond Sustainability Strategic Plan and a newer iteration of the CalEEMod (Version 2020.4.0) tool. Regional transportation energy consumption calculations for the Final EIS/EIR were updated to CARB EMFAC2021 fuel consumption factors from the EMFAC2017 factors used in the Draft EIS/EIR analysis. The updated Final EIS/EIR analysis accounts for the increased prevalence of alternatively fueled vehicles in the horizon year scenario of 2042 based on EMFAC2021. Use of these more recent regulatory modeling tools resulted in increased annual energy savings relative to the analysis provided for Alternative 3 in the Draft EIS/EIR. The energy impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. The LPA will not result in adverse effects related to the consumption of energy resources. No mitigation measures are required.

4.12.1 Regulatory Setting and Methodology

4.12.1.1 Regulatory Setting

Federal

Council on Environmental Quality (40 CFR Section 1502.16 Environmental Consequences): CEQ regulations 40 CFR 1502.16 outline the discussion of environmental consequences and the scientific and analytical basis for comparing alternatives within an EIS under NEPA. 40 CFR 1502.16(a)(6) states that discussions of environmental consequences in an EIS when comparing alternatives shall include energy requirements and conservation potential of various alternatives and mitigation measures.

Energy Policy Act of 2005: The Energy Policy Act of 2005 promotes alternative fuels and advanced vehicles' production and use. This Act amends existing regulations, including fuel economy testing procedures and the Energy Policy Act of 1992 requirements for federal, state, and alternative fuel provider fleets.

Energy Independence and Security Act of 2007: This Act consists of provisions to increase energy efficiency and the availability of renewable energy through the Corporate Average Fuel Economy and the Renewable Fuels Standard.

Additional applicable federal policies regarding energy include the Energy Policy and Conservation Act of 1975, the Energy Policy Act of 1992, the Intermodal Surface Transportation Efficiency Act of 1991 and Congestion Mitigation and Air Quality Improvement Program, Moving Ahead for Progress in the 21st Century Act, and the Transportation Equity Act for the 21st Century.

State

Alternative and Renewable Fuel and Vehicle Technology Program: Assembly Bill 118 created the Alternative and Renewable Fuel and Vehicle Technology Program, which authorizes the California Energy Commission (CEC) to award grants, revolving loans, loan guarantees, and other appropriate measures to qualified entities to develop and deploy innovative fuel and vehicle technologies that will help achieve California's petroleum reduction and air quality and climate change goals without adopting or advocating for any one preferred fuel or technology.

Executive Order B-30-15 and Executive Order S-3-05: EO B-30-15 established state GHG emission targets to reduce GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. EO S-3-05 established state GHG emission targets of 1990 levels by 2020 and 80 percent below 1990 levels by 2050.

CCR, Title 24 (Energy Efficiency Standards): Energy consumption of new buildings in California is regulated by State Building Energy Efficiency Standards contained in the CCR, Title 24, Part 2, Chapter 2-53. Title 24 applies to all new construction of both residential and nonresidential buildings, and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting.

CCR Title 13 Sections 1956.1, 2020, 2023, 2023.1, and 2023.4: These regulations within the California Motor Vehicle Code include vehicle requirements for public transit agencies. The Fleet Rule for Transit Agencies includes stringent exhaust emission standards for new Urban Bus engines and vehicles. The regulation also promotes advanced technologies by providing

for zero-emission bus demonstration projects and requiring zero-emission bus acquisitions applicable to larger transit agencies.

California Transportation Plan: This statewide, long-range transportation plan defines performance-based goals, policies, and strategies to achieve an integrated, multimodal transportation system. Strategies to achieve maximum feasible emissions reductions include alternative fuels, new vehicle technology, and tailpipe emissions reductions.

Assembly Bill 2076: Directs the CEC and the CARB to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal is to reduce petroleum demand to 15 percent less than 2003 demand by 2020.

Assembly Bill 1493: AB 1493 amended the Clean Car Standards (Chapter 200, Statutes of 2002) that require reductions in GHG emissions in new passenger vehicles from 2009 through 2016. The Advanced Clean Cars program extends AB 1493 for model years 2017 to 2025. This program promotes clean fuel technologies (i.e., plug-in hybrids, battery electric vehicles, compressed natural gas vehicles, and hydrogen powered vehicles), reduces smog, and provides fuel cost savings.

Senate Bill 100: SB 100 calls for the State Energy Resources Conservation and Development Commission and the State Air Resources Board to plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Senate Bill 743: SB 743 encourages land use and transportation planning decisions and investments to reduce VMT that contribute to GHG emissions, as required by AB 32. SB 743 requires the Office of Planning Research to develop revisions to the *CEQA Guidelines* and establish criteria to determine the significance of transportation impacts of projects within transit priority areas.

Senate Bill 1389: SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report is also intended to provide policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The 2015 Integrated Energy Policy Report, the most recent report required under Senate Bill 1389, was released to the public in February 2016.

Senate Bill 350: SB 350 established a 2030 GHG reduction target of 40 percent below 1990 levels and sets targets for energy efficiency and renewable electricity, among other actions aimed at reducing GHG emissions across the energy and transportation sectors.

Senate Bill 375: SB 375 addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires the CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, and task regional metropolitan planning organizations with the preparation of sustainable communities strategies within their regional transportation plans. The SCAG 2016-2040 RTP/SCS (SCAG 2016a) includes a commitment to reduce emissions from transportation sources to comply with SB 375. The *2016-2040 RTP/SCS* states that the region will meet or exceed the SB 375 per capita targets, lowering regional per capita GHG emissions to 8

percent below 2005 per capita emissions levels by 2020, 18 percent below by 2035, and 22 percent below by 2040.

Senate Bill X1-2 and Senate Bill 250: SB X1-2 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB 250 requires retail seller and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030.

Regional and Local

Metro Energy Conservation and Management Plan (ECMP) (Metro 2011a): The ECMP complements Metro's 2007 *Energy and Sustainability Policy* (Metro 2007), focusing on electricity for rail vehicle propulsion, electricity, and natural gas for rail and bus facility purposes, as well as the application of renewable energy.

Additional applicable regional and local plans, policies, and regulations regarding energy include the SCAG 2016-2040 RTP/SCS (SCAG 2016a), the *Metro Energy and Sustainability Policy* (Metro 2007a), the *Metro Sustainability Implementation Plan*, the *Metro Construction and Demolition Debris Recycling and Reuse Policy*, the *Metro Green Construction Policy* (Metro 2018), the *Metro Climate Action and Adaptation Plan* (Metro 2019e), the *Metro Sustainable Rail Plan* (Metro 2013), the *Metro Moving Beyond Sustainability Strategic Plan 2020* (Metro 2020f), and the *Los Angeles Department of Water and Power Strategic Long-Term Resource Plan* (LADWP 2017).

4.12.1.2 Methodology

The Affected Area for energy is the geographic region served by the energy resource suppliers for electricity and natural gas: the LADWP and SCE service areas for electricity and the Southern California Gas Company (SoCalGas) service area for natural gas. The transportation fuels analysis for regional on-road vehicle travel considers the SCAG region to be the Affected Area for energy.

The operational analysis includes direct energy consumption from electricity used to power the transit system and operations at the MSF, as well as indirect energy consumption resulting from changes in overall regional on-road VMT. Energy resource expenditures that were quantified for each analytical scenario include: direct electricity consumption associated with rail vehicle propulsion and track and station operations, as well as parking facilities; direct electricity and natural gas consumption associated with MSF operations; direct fossil fuel consumption associated with MSF operations vehicle trips; indirect electricity associated with the provision of water resources at the MSF; and indirect changes in regional transportation fuels consumption spurred by displaced vehicle trips from transit ridership.

Table 4.12.1 presents a summary of the annual LRT operating miles for the project corridor and the regional VMT on the roadway network used to estimate direct rail propulsion and facility operations electricity consumption and indirect transportation fuels consumption, respectively. The LRT miles displayed include anticipated annual LRT miles traveled during revenue service hours when the system would be transporting passengers and accounts for a 5 percent buffer adjustment for miles traveled when trains are out of service. Additionally, electricity required to power the stations was estimated using lighting electricity consumption factors provided in the CalEEMod, Version 2020.4.0 User's Guide.

Table 4.12.1. Countywide Vehicle Miles Traveled and Project Corridor LRT Revenue Miles

	Condition/LPA	Regional Roadway VMT (annual, million miles)	LRT Miles (annual miles)
CEQA Existing Baseline Year 2017	Existing	160,746	N/A
	Existing + LPA	160,721	1,604,323
NEPA/CEQA Future Horizon Year 2042[1]	No Build Alternative	210,396	N/A
	LPA	210,351	1,604,323

Source: Metro 2024h
Notes: [1]*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439 held that use of dual baselines is appropriate under CEQA provided that one is the existing baseline. The CEQA analysis uses the Existing Baseline Year 2017 and a Future Horizon Year 2042.
A 5 percent buffer was added to revenue LRT car mile estimates to account for out-of-service miles.
CEQA = California Environmental Quality Act; LPA = Locally Preferred Alternative; LRT = light rail transit; N/A = Not Applicable; NEPA = National Environmental Policy Act; VMT = vehicle miles traveled

Energy intensity factors obtained from the *2017 Metro Energy and Resource Report* (Metro 2017c) were used to estimate direct LRT and station operation electricity consumption for the No Build Alternative, the LPA, and design option. Energy intensity factors relate energy inputs (BTUs consumed) to resulting output (miles traveled). Since preparation of the energy analysis for the Draft EIS/EIR, more robust operational data pertaining to Metro energy consumption associated with various modes of transportation was published in conjunction with Metro's *Moving Beyond Sustainability Strategic Plan*. Based on an updated systemwide energy assessment, between 2014–2017, Metro estimates that for every LRT vehicle revenue mile traveled, approximately 9.41 kilowatt hours (kWh) of electricity were consumed on average. This energy intensity factor was applied to the LRT miles presented in Table 4.12.1 to estimate annual LRT propulsion energy consumption (in the form of electricity).

For the purposes of this analysis, energy intensity related to on-road vehicle travel is defined as the ratio of energy inputs to the useful outputs from that process (e.g., gallons of fuel per vehicle mile). The CARB EMFAC mobile source emissions inventory model contains factors that can be used to estimate gallons of gasoline or diesel fuel burned per VMT for a given year, vehicle fleet mix, and speed. Regarding energy consumption attributed to regional on-road vehicle travel, the analysis has been updated since publication of the Draft EIS/EIR to incorporate fuel consumption factors derived from a newer iteration of EMFAC (EMFAC2021). The EMFAC database also includes energy consumption factors for alternatively fueled vehicles (i.e., electric vehicles, hybrid vehicles, and those powered by natural gas). The updated Final EIS/EIR analysis accounts for the increased prevalence of alternatively fueled vehicles.

Generally, traffic in the Affected Area for energy is assumed to be approximately 7 percent trucks based on the Metro regional model. Annual energy consumption associated with on-road vehicle travel was estimated using the annual VMT data organized by speed bins of 5-mph increments and the corresponding EMFAC2021 fuel consumption factors for the on-road vehicle fleet traveling at the designated speeds. The annual roadway network VMT energy consumption was estimated using the fuel energy content factors derived by the Alternative Fuels Data Center (U.S. Department of Energy 2021): approximately 118,223 BTU per gallon of gasoline and approximately 133,489 BTU per gallon of diesel fuel. Energy consumption is assessed at a regional scale for the entirety of the LPA.

In addition to direct electricity associated with project corridor rail propulsion and facility operations and indirect changes to regional on-road transportation fuels consumption, the assessment of potential impacts related to energy consumption analyzed direct and indirect energy associated with operation of the MSF. CalEEMod is the preferred land use development emissions model for use in California. Since publication of the Draft EIS/EIR, a newer version of CalEEMod (Version 2020.4.0) was published by the state air districts, and the energy analysis for the MSF was updated accordingly. CalEEMod was used to estimate direct electricity and natural gas consumption associated with MSF operations, direct transportation fuels consumption associated with MSF vehicle trips, and indirect electricity consumption associated with water conveyance to and from the MSF. Electricity consumption at stations and parking facilities included as part of the LPA were also estimated using CalEEMod.

4.12.2 Affected Environment/Existing Conditions

4.12.2.1 State

California consumes more energy than any other state except Texas but ranks 49th among the 50 states and the District of Columbia for energy consumption per person (SCAG 2016a). Current annual energy consumption in California (including transportation) is approximately 7,830 trillion BTUs, or approximately 8.0 percent of the nation's energy consumption. California's energy consumption comprises 17.7 percent residential sector uses, 18.9 percent commercial sector uses, 23.7 percent industrial sector uses, and 39.8 percent transportation sector uses. Natural gas and gasoline are the most consumed resources and account for 28.7 percent and 21.9 percent of all statewide energy consumption, respectively.

4.12.2.2 Regional

Transportation accounts for approximately 39.8 percent of all energy use in SCAQMD jurisdiction, followed by residential energy consumption at 17.7 percent (SCAQMD 2017). According to the SCAG 2016-2040 RTP/SCS, approximately 417.7 million miles per day were traveled in 2016 and approximately 453.8 million miles per day are expected to be traveled under the 2040 plan conditions (SCAG 2016a). This would result in an overall increase in transportation energy use within the SCAG region due to fuel combustion from on-road vehicles. A reduction in VMT due to the implementation of alternative modes of transportation could reduce energy use within the region.

4.12.2.3 Local

Metro's contribution to regional energy consumption includes on-road vehicle fuel use (primarily compressed natural gas) and electricity for rail vehicle propulsion and maintenance and administrative facility operation. The *2017 Energy and Resource Report* (Metro 2017c) examined Metro energy use for the 2016 calendar year. Table 4.12.2 presents the Metro system energy consumption by end use between 2012 and 2016 based on more recent Metro energy consumption data included in the Technical Appendix to Metro's *Moving Beyond Sustainability Strategic Plan 2020 (Metro 2020f)*.

Table 4.12.2. Metro Direct Energy Consumption

End Use	Unit	2012	2013	2014	2015	2016
Non-Rail Vehicle Fuel	GGE	42,490,623	43,930,100	44,710,242	43,995,037	42,995,037
	kBTU/GGE	120.2				
	MMBTU	5,107,968	5,281,013	5,374,797	5,288,819	5,168,605
Rail Propulsion	kWh	199,093,552	229,866,746	210,937,940	198,921,473	207,921,473
Facility Energy	kWh	97,500,044	90,099,301	94,144,097	116,146,856	119,148,856
Rail Propulsion + Facilities Energy	kWh	296,593,596	319,966,047	305,082,037	315,068,329	327,070,329
	kBTU/kWh	3,412				
	MMBTU	1,012,018,873	1,091,768,948	1,040,982,622	1,075,057,248	1,116,009,752
Total Energy	MMBTU	**1,017,126,840**	**1,097,049,961**	**1,046,357,419**	**1,080,346,067**	**1,121,178,358**

Source: Metro 2017
Note: GGE = gasoline gallon equivalent; kBTU = 1,000 BTUs; MMBTU = million BTUs; kWh = kilowatt hours

In total, rail propulsion resulted in the consumption of approximately 207,921,473 kWh of electrical energy in the year 2016, which equates to 709,1457 MMBTU. Electricity consumed by project facilities would be provided by LADWP and SCE, and natural gas consumed at the MSF would be provided by SoCalGas.

LADWP: LADWP serves an area of 465 square miles that includes over 4 million residents and 1.4 million power customers. As of 2016, energy sources consisted of 29 percent natural gas, 29 percent renewable sources, 19 percent coal, 9 percent nuclear, 6 percent unspecified sources, and 3 percent hydroelectric resources. Total daily generation capacity is over 7,880 megawatts (LADWP 2016). According to CEC data, LADWP customers consumed a total of approximately 25,135,339 megawatt hours of electricity in 2016. Metro's 2016 systemwide electricity consumption was equivalent to approximately 1.3 percent of total annual LADWP consumption.

SCE: SCE serves an area of 50,000 square miles, including 15 million people, 180 incorporated cities, and 15 counties. In 2015, SCE delivered more than 87 billion kWh of electricity to its service area (SCE 2018). In 2016, SCE energy sources consisted of 41 percent unspecified sources, 28 percent renewable sources, 19 percent natural gas, 6 percent hydroelectric, and 6 percent nuclear (CEC 2017). According to CEC data, SCE customers consumed approximately 102,319,743 megawatt hours of electricity in 2016. Metro's 2016 systemwide electricity consumption was equivalent to approximately 0.3 percent of total annual SCE consumption.

SoCalGas: SoCalGas is the primary provider of natural gas to the Southern California region. In 2016, SoCalGas customers consumed approximately 7,258,720,922 Therms of natural gas energy according to the CEC database. Metro 2016 operations consumed approximately 1,005,242 Therms of natural gas through facilities and approximately 48,281,943 Therms of natural gas through the bus fleet. Total annual Metro natural gas consumption represents less than 1 percent of SoCalGas customers.

4.12.3 Environmental Consequences/Environmental Impacts

4.12.3.1 No Build Alternative

The No Build Alternative includes planned infrastructure and transportation-related projects but would exclude the facilities and infrastructure of the LPA that would increase energy consumption or require energy infrastructure to meet project demands. Transportation energy use for the No Build Alternative is proportional to regional VMT. The No Build Alternative includes general population growth that would lead to increased vehicle use and energy consumption. The No Build Alternative VMT also accounts for the existing transit system and related future projects, including projects affecting the regional transportation system (e.g., highway widening). Annual VMT in the region would increase from approximately 463 million VMT (2017) to approximately 606 million VMT (2042) (Metro 2024h). Annual VMT would increase from 160,746 million to 210,396 million due to ambient regional growth. However, as alternative-fueled passenger vehicles (e.g., electric and natural gas) are added to the fleet and fuel efficiency improves, aggregate average fleetwide fuel consumption per mile traveled for cars would decline.

The CARB EMFAC2021 mobile source emissions model provides fuel consumption factors based on vehicle type, year, and speed. Table 4.12.3 shows energy use for the existing condition and the No Build Alternative based on regional on-road VMT output produced by the Metro regional transportation model and energy consumption factors calculated from EMFAC2021 and Metro's *Moving Beyond Sustainability Strategic Plan* Technical Appendix. The No Build Alternative would result in 6.0 percent less transportation energy use than the existing condition and would not introduce additional energy consumption in 2042. Under NEPA, the No Build Alternative would not result in adverse effects related to operational energy consumption.

Table 4.12.3. No Build Alternative Operational Energy Consumption Based on Regional On-Road VMT

Existing (2017) (Annual MMBTU)	No Build Alternative (2042) (Annual MMBTU)	Change in Energy (Annual MMBTU)	Percent Change
923,225,261	871,138,853	(52,086,408)	(6%)

Source: Metro 2024h
Note: MMBTU = million British thermal units; VMT = vehicle miles traveled

4.12.3.2 Locally Preferred Alternative

The LPA will directly result in the consumption of energy related to the LRT propulsion systems, lighting and accessory equipment at station platforms, and operation of the MSF (i.e., electricity and natural gas). The LPA consists of 14.5 miles of alignment and includes 9 stations. The LPA will result in a regional VMT reduction compared to the No Build Alternative. Electricity will be provided to the LRT line by TPSS units and to stations by traditional distribution connection facilities (e.g., power poles, underground wires, and transmission lines). The LPA will indirectly change regional energy consumption through reduction in regional VMT and the corresponding decreases in petroleum transportation fuels consumption.

As shown in Table 4.12.4, the LPA will reduce annual regional energy consumption from the No Build Alternative by 126,706 MMBTU (0.015 percent net reduction) in the horizon year of 2042, which is consistent with objectives of regional planning strategies to reduce reliance on fossil fuels and nonrenewable resources. The change in annual energy consumption described in the

Draft EIS/EIR was estimated to be an energy savings of 123,011 MMBTU. Therefore, the updated analysis for the Final EIS/EIR is consistent with the conclusions of the Draft EIS/EIR, and the annual energy savings increased to 126,706 MMBTU by using the updated iterations of the emissions modeling tools published by regulatory agencies and Metro energy consumption metrics.

Table 4.12.4. Operational Energy Consumption (2042)

Component	Annual MMBTU	
	No Build Alternative	Locally Preferred Alternative
Regional On-Road VMT	871,138,853	870,940,687
LRT Vehicle Propulsion	—	51,518
Stations & Parking Facilities Energy	—	9,492
MSF	—	10,450
Total Energy	**871,138,853**	**871,012,147**
	Change from No Build Alternative	**(126,706)**
	Percent Change from No Build Alternative	***(0.015%)***

Source: Metro 2024h
Notes: LRT = light rail transit; MMBTU = million British thermal units; MSF = maintenance and storage facility; VMT = vehicle miles traveled; ( ) = decrease/reduction

Although the LPA will involve construction of power poles, transmission lines, and connections to the existing grid, it will not require the expansion of existing generation facilities and will not interfere with LADWP and SCE efforts to augment the renewable energy supply. The LPA will be designed per the MRDC or equivalent and will implement mandatory Title 24 and CALGreen requirements as specified in the ECMP. In addition, the LPA will implement Project Measure AQ PM-1 (Metro Green Construction Policy) during construction to be in compliance with Metro's *Green Construction Policy* (refer to Section 4.19.3.5 (Construction-related air quality) for a summary of this measure). Furthermore, the parking facilities included as part of the LPA will be designed to be electric vehicle ready and to potentially accommodate solar energy installations should Metro pursue such projects in the future. Under NEPA, the LPA will not result in an adverse effect related to operational energy consumption.

4.12.3.3 Design Option: Close 186th Street

Implementation of the design option would close 186th Street but keep 187th Street open to traffic across the LRT tracks in the City of Artesia, and Corby Avenue would be turned into a cul-de-sac with an access driveway for the existing business. Operation of the LPA with the design option would result in the same amount of energy use as the LPA without the design option. Operational activities would not introduce any end uses of electricity, natural gas, or petroleum fuels beyond those that are elements of the LPA without the design option. Operation of the LPA with the design option would not result in adverse environmental effects related to energy consumption.

4.12.3.4 Maintenance and Storage Facility

The MSF will be designed per the Metro Rail Design Criteria, constructed in compliance with mandatory Title 24 and the CALGreen requirements, and will achieve a minimum Silver rating under the Leadership in Energy and Environmental Design (LEED) certification, as specified in

the ECMP. Furthermore, parking facilities at the MSF will be electric vehicle ready and will be designed to accommodate installation of solar energy features in the future.

The MSF will result in the consumption of fuels and electricity from the operation of facility equipment and vehicle trips to and from the site. As the MSF is a component of the LPA, energy consumption is accounted for in the overall analysis of the LPA. As shown in Table 4.12.4, the MSF will use approximately 10,450 MMBTU of energy per year between electricity consumption, natural gas consumption, and transportation fuels for employee commuting. Including MSF energy consumption, the LPA will have a net energy reduction including on-road energy consumption compared to the No Build Alternative. The MSF will contribute to a net energy reduction by contributing to implementation of the LRT and the associated VMT reductions. The MSF will not constitute a wasteful, inefficient, or unnecessary consumption of energy. Under NEPA, the MSF will not result in an adverse effect related to operational energy consumption.

4.12.3.5 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three USACE facilities: the concrete-lined Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel. Energy consumption associated with long-term operation of the LPA will not affect the USACE facilities. There will be no effect to USACE facilities during operation of the LPA related to energy resources.

4.12.4 Project Measures and Mitigation Measures

There are no project measures or mitigation measures related to energy. Refer to Section 4.19.3.5 (Construction-related Air Quality) for Project Measure AQ PM-1 (Metro Green Construction Policy).

4.12.5 California Environmental Quality Act Determination

4.12.5.1 Threshold ENERGY-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

No Project Alternative

The No Project Alternative would not include the operation of any project-related facilities or infrastructure. Existing energy consumption of Metro facilities would remain unchanged. As of 2017, the Metro system comprised 129 million revenue miles consuming approximately 55.6 megajoules of energy per revenue mile, for a total of 7,172 million megajoules. On-road vehicle fuel consumption accounts for approximately 80 percent of the systemwide energy use, and electricity for rail propulsion represents approximately 12 percent. Approximately 30 percent of Metro's electricity is generated by renewable sources. The No Project Alternative would not interfere with Metro's commitments to improving energy efficiency or expanding its alternative energy infrastructure, and would not create a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, a significant impact would not occur, and mitigation would not be required.

Locally Preferred Alternative

As described in Section 4.12.3.2 and shown in Table 4.12.4, implementation of the LPA will result in less annual energy use than the No Build Alternative (0.015 percent net decrease) as a result of decreased regional VMT and associated fuel use. As shown in Table 4.12.5, under

Existing + LPA conditions, had the LPA been operational in the scenario year of 2017, it would have resulted in 32,613 MMBTU less energy resource consumption than existing conditions, which is a 0.004 percent reduction. Although this theoretical energy savings in the scenario year of 2017 is lower than the energy savings disclosed in the Draft EIS/EIR (147,833 MMBTU/year), the decrease in theoretical energy savings does not alter the conclusions of the analysis. The LPA, if operational in 2017, would still contribute to statewide and regional efforts to conserve transportation fuels and reduce on-road VMT, which are key elements of enhancing transportation efficiency and sustainability. The LPA will not constitute a wasteful, inefficient, or unnecessary consumption of energy during project operation. Therefore, impacts will be less than significant, and mitigation will not be required.

Table 4.12.5. Operational Energy Consumption under Existing Conditions and the Locally Preferred Alternative (2017)

Component	Annual MMBTU (in MMBTU)	
	Existing	Existing + LPA
Regional On-Road Vehicle Fuel	923,225,261	923,118,782
LRT System Electricity	-	51,518
Stations & Parking Facilities Energy	-	9,492
MSF Energy	-	12,856
Total Energy	**923,225,261**	**923,192,648**
Change Relative to Existing Conditions		**(32,613)**
Percent Change Relative to Existing Conditions		***(0.004%)***

Source: Metro 2024h
Notes: LPA = Locally Preferred Alternative; LRT = light rail transit; MMBTU = million British thermal units; MSF = maintenance and storage facility; VMT = vehicle miles traveled; ( ) = decrease

Design Option: Close 186th Street

In terms of effects to long-term energy consumption, operation of the LPA with the design option would result in the same amount of energy use as the LPA without the design option. Operation activities of the LPA with the design option would not introduce any additional end uses of electricity, natural gas, or petroleum fuels beyond those that are included in the analysis for the LPA without the design option. As demonstrated by the results of the analyses presented in Table 4.12.4 for the operational year of 2042 and in Table 4.12.5 for the scenario year of 2017, operation of the LPA without the design option would result in net energy savings when accounting for the offset of petroleum transportation fuels consumption resulting from mode shift to transit and increased Metro ridership. Therefore, the LPA with the design option would result in a less than significant impact related to energy resources consumption.

Maintenance and Storage Facility

Operation of the MSF will result in the consumption of petroleum transportation fuels, electricity, and natural gas and is a critical component of the LPA that will not be developed independently without implementation of the LRT alignment. As shown in Table 4.12.5, the MSF will use approximately 12,856 MMBTU per year in the operational scenario year of

2017. By 2042, MSF operations will consume approximately 10,450 MMBTU of energy annually, as presented in Table 4.12.4. Overall, LPA operations will result in a net energy benefit to the Affected Area, and the MSF is required to operate the LPA and is considered cumulatively with the effects of the increased LRT ridership and corresponding regional VMT reductions. The MSF will not constitute a wasteful, inefficient, or unnecessary consumption of energy. Therefore, impacts will be less than significant.

4.12.5.2 Threshold ENERGY-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Project Alternative

The No Project Alternative would not include operation of any project-related facilities or infrastructure. As of 2017, approximately 30 percent of Metro's electricity is generated by renewable sources, and the seven Metro-owned solar installations around the greater Los Angeles area generated a total of 2,670 megawatt hours. Metro has a goal of 50 percent renewable energy use by 2030. Additionally, Metro operates 11 LEED-certified buildings representing nearly 2 million square feet of floor area. The No Project Alternative would not interfere with Metro's commitments to improving energy efficiency or expanding its alternative energy infrastructure that is not related to the LPA. Compared to the LPA, the No Project Alternative would do less to support regional and local conservation plans in reducing VMT. Impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA will be designed per the MRDC or equivalent and will implement mandatory Title 24 and CALGreen requirements as specified in the ECMP. In addition, construction of the LPA will implement Project Measure AQ PM-1 (Metro Green Construction Policy) to be in compliance with Metro's *Green Construction Policy* (described in Section 4.19.3.5 [Construction-related Air Quality]) of this Final EIS/EIR). Implementation of the LPA will contribute to improving regional transportation-related energy efficiency and decreasing reliance on petroleum-based transportation fuels. There are no state, regional, or local energy conservation plans that promote increasing passenger vehicle miles on the roadway network in place of mass transit. Implementation of the LPA will be consistent with applicable regional and local conservation plans; and energy used for operation of the LPA will not be considered a wasteful or inefficient use of energy as mass transit and reduced on-road VMT are key components of relevant energy conservation plans. Furthermore, the LPA, MSF, and parking facilities will be designed to provide electric vehicle-ready infrastructure and will consider opportunities to potentially accommodate solar energy installations should Metro pursue such projects in the future.

Additionally, Metro has embarked on a robust mission to evaluate opportunities to expand the use of renewable energy resources, including developing its own renewable energy installations at certain Metro facilities. The Metro Moving Beyond Sustainability Strategic Plan 2020 includes a goal to increase systemwide onsite renewable energy generation to 7.5 megawatts (MW) by 2030, as existing solar generation was estimated to be 2.6 MW across eight Metro facilities in 2019. In 2014, Metro launched its Photovoltaic (PV) Operations and Maintenance Program to provide technical training and resources to Metro maintenance personnel at facilities with PV systems. Metro is also planning new solar and battery storage project opportunities that will provide an estimated 2.4 MW of renewable power, as well as

retrofitting existing facilities with LED lighting to enhance energy efficiency. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

With regard to regional and local planning objectives to improve energy efficiency and expand renewable energy resources, the analysis for the LPA with the design option is similar to the analysis provided for the LPA without the design option and incorporates the same assumptions. Operation of the LPA with the design option would involve the same end uses of petroleum transportation fuels, electricity, and natural gas, and the magnitude of resource consumption would be the same as the LPA without the design option. The design option would be designed per the MRDC or equivalent and would implement mandatory Title 24 and CALGreen requirements as specified in the ECMP. In addition, construction of the LPA with the design option will implement Project Measure AQ PM-1 (Metro Green Construction Policy) to comply with Metro's *Green Construction Policy* (described in Section 4.19.3.5 [Construction-related Air Quality]) of this Final EIS/EIR). Therefore, impacts would be less than significant as they relate to energy efficiency and renewable energy resources.

Maintenance and Storage Facility

The MSF is an essential component of the LPA and will be consistent with the applicable regional and local conservation plans by contributing to the energy savings benefits that will be achieved through implementation of the LPA. The MSF will be designed per the MRDC or equivalent and will implement mandatory Title 24 and CALGreen requirements as specified in the ECMP. In addition, Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented during construction of the MSF to comply with Metro's *Green Construction Policy* (described in Section 4.19.3.5 [Construction-related Air Quality]) of this Final EIS/EIR). Furthermore, in accordance with Metro policies, the MSF will be designed to meet the equivalent of LEED Silver certification or better and will implement energy-efficient features where practicable and not cost-prohibitive. Therefore, impacts will be less than significant and no mitigation is required.

4.13 Electromagnetic Fields

This section summarizes the analysis of electromagnetic field (EMF) effects. EMF results from electromagnetic emissions, which is energy in the form of photons. Human-made EMF and associated electromagnetic interference (EMI) is produced when electric current travels through a circuit. The dominant source of EMF for LRT is the direct current (DC) electric traction system that powers the trains. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Electromagnetic Field Impact Potential Memorandum* (Metro 2024v).

EMF has electrical and magnetic field components. The electric fields result from the strength of the electric charge (voltage). Magnetic fields result from the motion of the charge (current). Electric field strength is measured in units of volts per meter and is greater the higher the voltage. Magnetic field strength is measured in milligauss (mG).

The analysis and impact conclusions related to EMF remain unchanged from the Draft EIS/EIR, including with respect to Alternative 3. An evaluation of EMF effects on USACE facilities is not applicable as these facilities are not sensitive to EMF.

4.13.1 Regulatory Setting and Methodology

4.13.1.1 Regulatory Setting

The federal government and State of California have not established regulatory limits for EMF exposure. The FTA has released *Guidance on the Prevention and Mitigation of Environmental, Health, and Safety Impacts of Electromagnetic Fields and Radiation for Electric Transit Systems* (FTA 2008). Regarding health effects, compliance with referenced consensus standards and guidelines is encouraged. The most relevant standard is "C95.6: IEEE [Institute of Electrical and Electronics Engineers] Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0-3 [kilohertz] kHz" (IEEE 2002). The C95.6 Standard establishes maximum permissible exposure (MPE) levels to protect the general public that vary by frequency. The MPE levels for frequencies between 1 and 20 Hertz (Hz) (where the majority of EMF from light rail vehicles is generated) ranges from 1,180,000 mG at static to 9,040 mG at 20 Hz. To avoid EMI with sensitive equipment, project-generated EMI should be below equipment-specific sensitivity thresholds.

4.13.1.2 Methodology

To evaluate potential effects on human health, EMF that will be generated by the LPA was compared to the C95.6: IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0-3 kHz (IEEE 2002). The C95.6 Standard establishes MPE levels to protect the general public that vary by frequency. The MPE levels for frequencies between 1 and 20 Hz (where the majority of EMF from light rail vehicles is generated) ranges from 1,180,000 mG at static to 9,040 mG at 20 Hz. The MPE levels decrease to 2,290 mG at 3 kHz.

For EMF, an Affected Area of 1,000 feet from the LPA alignment was reviewed for land uses that could have highly EMI-sensitive medical or scientific equipment. At 1,000 feet, EMI will be below sensitivity levels for highly sensitive equipment. Health centers were contacted to determine if they have magnetic resonance imaging (MRI) equipment.

4.13.2 Affected Environment/Existing Conditions

The Earth's background magnetic field varies around an average of about 500 mG (National Institute of Environmental Health Sciences 2002). Examples of magnetic field intensities from human activities include the following (Federal Railroad Administration 2006):

- Overhead power transmission line: 10 to 100 mG directly under transmission lines and less than 10 mG under lateral lines
- Household appliances: 8 to 165 mG (at a distance of 1 foot)
- Rail vehicle (electrically powered): 400 mG (at 43 inches from the vehicle floor) to 1,500 mG (at the vehicle floor level)

Natural and human-generated EMF encompass a broad frequency spectrum. In the United States, the electric power system operates at 60 Hz, or cycles per second, meaning that the field reverses its direction 60 times per second. Radio and other communications operate at much higher frequencies; many are in the range of 500,000 to 3 billion Hz.

High-voltage transmission lines are currently along the LPA in:

- Huntington Park on Randolph Street (345 kV at approximately 50 feet away) with three direct crossings of the LPA (345 kV) and Salt Lake Avenue (345 kV along the LPA at approximately 75 feet away)

- South Gate crossing the LPA near Rayo Avenue (345 kV), the Los Angeles River (345 kV), and the Rio Hondo (345 kV)
- Paramount between Arthur Avenue and Somerset Boulevard (along the LPA at approximately 125 feet away) (345 kV) and crossing the LPA at Downey Avenue (345 kV)
- Bellflower crossing the LPA at Woodruff Avenue (345 kV)
- Cerritos crossing the LPA near the San Gabriel River (345 kV) and Studebaker Road (345 kV)

Twenty-one educational, technology, and medical facilities were identified within the Affected Area for EMF. None of the facilities within 1,000 feet of the LPA have highly EMI-sensitive equipment that could be affected by the LPA.

4.13.3 Environmental Consequences/Environmental Impacts

4.13.3.1 No Build Alternative

There would be no project-created EMF for the No Build Alternative. Current natural and human-generated EMF in the corridor would continue. Other projects with substantial transmission or demand for electricity could generate EMF, which would be reviewed through their own environmental processes and mitigation would be identified as needed.

4.13.3.2 Locally Preferred Alternative

The dominant source of EMF for LRT is the DC electric traction system that powers the trains. The DC voltage on the overhead supply wires (i.e., contact wire and messenger) produces a static electric field between the supply wires and ground, and the flow of currents—as trains draw power via pantographs—produces transient magnetic fields as the train travels along the alignment. EMF levels near rail transit decrease rapidly from approximately 100 mG at 30 feet from the tracks to less than 1 mG at 300 feet. There are no conclusive findings regarding the health effects of low-level EMF typical of electrically powered rail vehicles. For the LPA, magnetic fields from the planned DC traction system for the LPA will be short-duration disturbances and low-frequency (< 60 Hz). EMF levels produced by LRT vehicles will be below the C95.6 MPE across the range of frequencies.

Highly sensitive equipment in research, manufacturing, or medical facilities could be affected by EMF levels as low as 0.5 mG. Medical, higher education, research, and industrial land uses within the 1,000-foot Affected Area for EMF were reviewed to assess whether they have research electron microscopes or medical MRI equipment. Neither the Bellflower Health Center nor Angeles Community Health has such equipment. All other facilities were eliminated based on the nature of their operations. Because no facilities with EMF-sensitive equipment were found within 1,000 feet, the LPA will not affect EMF-sensitive equipment operations.

4.13.3.3 Design Option: Close 186th Street

No highly sensitive equipment was identified in the vicinity of the design option. Therefore, consistent with the LPA without the design option, the LPA with the design option would not affect EMF-sensitive equipment operations.

4.13.3.4 Maintenance and Storage Facility

No highly sensitive equipment was identified in the vicinity of the maintenance and storage facility site; therefore, the maintenance and storage facility will not affect EMF-sensitive equipment operations.

4.13.4 Project Measures and Mitigation Measures

No project measures or mitigation measures for EMF effects will be required.

4.13.5 California Environmental Quality Act Determination

With regard to health impacts and in accordance with CEQA Guideline Section 15145, the known information regarding EMF and health impacts has been summarized without reaching a conclusion of significance. A statement or conclusion of CEQA significance for EMF health impacts would be speculative. With regard to sensitive equipment, there are no universal thresholds. Because no facilities with EMF-sensitive equipment were found within 1,000 feet of the LPA, the LPA will not affect EMF-sensitive equipment operations.

4.14 Historic, Archaeological, and Paleontological Resources

This section presents a summary of the Section 106 analyses for built environment and archaeological historic properties, the NEPA analysis for paleontological resources, and the CEQA analyses for the historic built environment, archaeological historical resources, and paleontological resources that were performed for operation of the LPA.

A cultural resources investigation was conducted for the four Build Alternatives (Alternatives 1, 2, 3, and 4) in support of the Draft EIS/EIR. The methodology and results of that investigation are summarized in the *West Santa Ana Branch Transit Corridor Project Cultural Resources Survey Report—Rev 1* (Survey Report—Rev 1 [Metro 2020d]). The investigation identified historic properties/historical resources in the Area of Potential Effects (APE) that were delineated for the four Build Alternatives. An effects/impacts analysis for the four Build Alternatives was performed for all archaeological and built environment historic properties/historical resources identified in the Survey Report—Rev 1 and was presented in the *West Santa Ana Branch Transit Corridor Project Revised Preliminary Cultural Resources Effects Report* (Preliminary Effects Report; Metro 2021c). Along with the Survey Report—Rev 1, the Preliminary Effects Report was circulated with the Draft EIS/EIR for public review and comment from July 30, 2021, to September 28, 2021.

The LPA for the Project, presented in the Survey Report—Rev 1 and Preliminary Effects Report as Alternative 3, was identified by the Metro Board of Directors in January 2022. Since circulation of the Draft EIS/EIR, the Survey Report—Rev 1 and Preliminary Effects Report were updated to account for the following:

- Expansion of the APE, primarily to account for consideration of temporary construction easements and minor design changes resulting from stakeholder coordination and public comments received on the Draft EIS/EIR. This expansion resulted in the identification of three additional historic properties/historical resources (L & F Machine Company/2110 Belgrave Avenue [Map Reference Number (MRN) 9-034], Huntington Park High School/6020 Miles Avenue [MRN 10-021], and Cudahy Substation/Salt Lake Avenue [MRN15-032]), the effects/impacts to which are analyzed herein.

- Expansion of the vertical extent of the APE from approximately 115 to approximately 150 feet below the existing ground surface to account for the depth associated with geotechnical borings necessary to support project design and construction.
- An update in the Project's construction schedule from a completion date of 2028 to 2034 with a 5 year buffer.[8]
- Consideration of the historical significance of and analysis of the potential impacts/effects of operation of the LPA on portions of three river channels (the Los Angeles River channel [MRN 17-007], the Rio Hondo channel [18-017], and the San Gabriel River channel [29-025]) as a result of comments received on the Draft EIS/EIR from the USACE.
- Integration of new information related to one of the archaeological historic properties/historical resources previously assumed eligible for listing in the NRHP in the Survey Report—Rev 1 (P-19-002849), which indicated that this archaeological resource is no longer extant.
- Update of the effects/impacts assessment for the Century Freeway-Transitway Historic District (105 historic district) (MRN 21-027) as a result of consultation with Caltrans and design changes. This includes integration of Caltrans' input on design of the replacement freight bridge (refer to Section 7.10.2.2 of Chapter 7, Public Outreach, Agency Consultation, and Coordination, of this Final EIS/EIR for a summary of consultation with Caltrans) and a reduction (from three to one) in the number of character-defining bridges to be demolished by the LPA.
- Integration of Project Measure CR PM-1: SOI Standards Design Review into the analysis presented herein, in particular as applicable to the new LRT bridge and C Line station that will be constructed within the 105 historic district (MRN 21-027) and extension of the Union Pacific Los Angeles River Rail Bridge's (MRN 17-006) existing concrete debris walls.

Consultation occurred with SHPO in support of the above-noted revisions. Section 106 consultation is summarized in Section 7.10 of Chapter 7, Public Outreach, Agency Consultation, and Coordination, of this Final EIS/EIR; the Survey Report—Rev 2; and the *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Effects Report) (Metro 2024u).

Detailed Section 106, NEPA, and CEQA analyses for historic, archaeological, and paleontological resources are provided in the following reports:

- *West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report–Rev 2* (Survey Report–Rev 2) (Metro 2023b)
- *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Effects Report) (Metro 2024u)
- *West Santa Ana Branch Transit Corridor Project Final Paleontological Resources Impacts Analysis Report* (Metro 2024y)

[8] System testing will occur after completion of construction activities and the LPA will open for service in 2035.

Tribal Cultural Resources are addressed separately in Section 4.15 of this Final EIS/EIR. As detailed in Section 4.14.3.1 of this Final EIR, for the purposes of Section 106, FTA has made the determination that operation of the LPA will result in no adverse effect to historic properties. SHPO concurrence on this determination was received on March 12, 2024.

4.14.1 Regulatory Setting and Methodology

This section summarizes the regulatory context that governs built, archaeological, and paleontological resources. The regulations included directly relate to the analysis presented in this section. An explanation of PRC Sections 5024 and 5024.5 has been added to the following section based on the applicability of those provisions to Caltrans in connection with the 105 historic district. For a full summary of all applicable regulations, please see the above cited reports.

4.14.1.1 Regulatory Setting

Historic and Archaeological Resources

Federal

Built environment and archaeological historic properties are considered during federal undertakings chiefly under Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) through one of its implementing regulations, 36 CFR 800 (Protection of Historic Properties).

National Historic Preservation Act

The NHPA (as amended) (54 U.S.C. § 300101 through § 320303) is the cornerstone of the federal cultural resources preservation program, as it sets forth the policy and procedures regarding built environment and archaeological historic properties. It requires federal agencies to consider the effects of their undertakings, such as construction projects, on historic properties and properties that an Indian Tribe regards as having religious and/or cultural importance (i.e., Traditional Cultural Properties). Direct effects to historic properties are defined as those that come from an undertaking at the same time and place with no intervening cause. Indirect effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable (Advisory Council on Historic Preservation 2019).

Historic properties are defined as any prehistoric or historic districts, sites, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places (NRHP). To be eligible for inclusion in the NRHP, properties must be significant in American (including federal, state, and/or local) history, architecture, archaeology, engineering, or culture, and generally must be at least 50 years old. Historic properties must also possess integrity of location, design, setting, materials, workmanship, feeling, or association, and meet at least one of the following criteria (36 CFR Part 60.4):

A) Are associated with events that have made a significant contribution to the broad patterns of our history
B) Are associated with the lives of persons significant in our past
C) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
D) Have yielded, or may be likely to yield, information important in prehistory or history

Section 106 of the NHPA (54 U.S.C. § 306108) requires federal agencies to afford the Advisory Council on Historic Preservation, acting through the State Historic Preservation Office (SHPO) or the Tribal Historic Preservation Office, a reasonable opportunity to comment on the effects of an undertaking. It does so through consultation, the goal of which is to identify historic properties potentially affected by the undertaking, assess the undertaking's effects on the historic properties, and seek ways to avoid, minimize, or mitigate adverse effects on historic properties.

State

The protection of historical resources, including built environment and archaeological, in California is primarily addressed through the regulatory measures of CEQA, presented below.

California Environmental Quality Act

CEQA (PRC § 21000 et seq.) requires evaluation of proposed projects that may cause significant effects on historical resources. Under CEQA, "historical resources" must be identified; expected impacts must be analyzed; and mitigation must be identified and implemented, where necessary.

The CEQA Guidelines define a "historical resource" as:

1. A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (PRC Section 5024.1, Title 14 CCR, § 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. (*CEQA Guidelines*, § 15064.5(a).)

CEQA equates a "substantial adverse change" in the historic significance of a resource with a significant effect on the environment (PRC Section 21084.1). A "substantial adverse change" in the significance of a historical resource is defined by the *CEQA Guidelines* as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines*, § 15064.5(b)). The significance of a historical resource is materially impaired when the project demolishes or materially alters the physical characteristics of the resource that qualifies the resource as historic. If the project's effects on historic properties meet any CEQA impact conditions, mitigation measures are recommended for avoidance, to minimize impacts, or to provide balanced compensation for adverse effects. Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings shall be considered mitigated to a less than significant impact on the historical resource (*CEQA Guidelines*, § 15064.5(b)(3)).

California Register of Historical Resources

The CRHR was established under California PRC Section 5024.1 to serve as an authoritative guide to the state's significant historic and archaeological resources. A resource is considered historically significant if it meets the criteria for listing in the CRHR (PRC Section 5024.1, Title 14 CCR, § 4852). For a property to be considered eligible for listing in the CRHR, it must be found to be significant under at least one of the following four criteria by the State Historical Resources Commission:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
4. Has yielded, or may be likely to yield, information important in prehistory or history

In addition to possessing one of the above characteristics, to be eligible for listing in the CRHR resources must retain "substantial" integrity to their period of significance. The seven aspects or qualities of integrity are the same as those applied to NRHP-eligible properties: location, design, setting, materials, workmanship, feeling, and association.

The CRHR also includes properties that:

- Have been determined eligible for listing in, or are listed in, the NRHP
- Are registered State Historical Landmark No. 770 and all consecutively numbered landmarks above Number 770
- Are points of historical interest that have been reviewed and recommended to the State Historical Resources Commission for listing
- Are city- and county-designated landmarks or districts

Historic districts are a concentration of historic buildings, structures, objects, or sites within precise boundaries that share a common historical, cultural, or architectural background. Individual resources in a historic district may lack individual significance but be considered a contributor to the significance of the historic district.

Public Resources Code 5024 and 5024.5

The California State Legislature enacted PRC § 5024 and 5024.5 as part of a larger effort to establish a state program to preserve historical resources. These sections of the code require state agencies to take a number of actions to ensure preservation of state-owned historical resources under their jurisdiction. These actions include evaluating resources for NRHP eligibility and California Historical Landmark (California Landmark) eligibility; maintaining an inventory of eligible and listed resources; and managing these historical resources so that that they will retain their historic characteristics.

Local

For the purposes of CEQA, resources eligible for or listed in the CRHR are, by definition, "historical resources." Resources included in a local register of historical resources or deemed significant and also designated at the local level (i.e., given a California Historical Resources Status Code 3 through 5 in a survey meeting the California Office of Historic

Preservation requirement), are presumed to be historically or culturally significant for purposes of CEQA. The Project traverses several municipalities that maintain local registers of historical resources and the analysis conducted for this Project considered effects/impacts to locally eligible resources. For a description of each of the registers and their eligibility criteria, refer to the Effects Report.

Paleontological Resources

Federal

Federal protection for scientifically significant paleontological resources applies to projects if any construction or other related project impacts occur on federally owned or managed lands, involve the crossing of state lines, or are federally funded. The federal protections described below may apply to paleontological resources in the Affected Area.

NEPA of 1969, as amended (Public Law [P.L.] 91-190, 42 U.S.C. 4321- 4347, January 1, 1970, as amended by P.L. 94-52, July 3, 1975; P.L. 94-83, August 9, 1975; and P.L. 97-258 Section 4(b), September 13, 1982), recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101 [42 U.S.C. Section 4321], No. 382).

The Paleontological Resources Preservation Act, enacted as a result of the passage of the Omnibus Public Lands Management Act of 2009, P.L. 111-011, Title VI, Subtitle D, Paleontological Resources Preservation, sets forth regulations and provisions pertaining to paleontological resources on all federally administered lands.

State

The protection of paleontological resources in California is addressed through the regulatory compliance of CEQA.

California Environmental Quality Act

Paleontological resources are considered nonrenewable scientific resources and are protected under CEQA, which states, in part, that a project will "normally" have a significant effect on the environment if it, among other things, will disrupt or adversely affect a paleontological site except as part of a scientific study. Specifically, in Appendix G of the *CEQA Guidelines*, the "Environmental Checklist Form," the question is posed: "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature." In order to determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, mitigation of potentially adverse impacts to paleontological resources is mandated by CEQA.

Local

The Cities of Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, and Bellflower do not have any ordinances or policies relating to paleontological resources. The Los Angeles County 2035 General Plan and the Conservation Element of the City of Los Angeles General Plan (2011b) both include policies aimed at the protection of paleontological resources. Further explanation of these policies is included in the Paleontological Resources Impacts Analysis Report.

4.14.1.2 Methodology

Historic and Archaeological Resources

Area of Potential Effects

The APE was established through consultation among the lead federal agency (FTA), the lead CEQA agency (Metro), and SHPO in accordance with 36 CFR 800.16(d), which defines an APE 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 area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

The APE was originally delineated in 2018-2020 to consider all potential effects (physical, noise, vibration, visual, cumulative) of the four Build Alternatives evaluated in the Draft EIS/EIR on archaeological and built environment historic properties; this includes direct effects, those that may occur concurrently with the Project, and indirect and cumulative effects that may occur following project implementation (Advisory Council on Historic Preservation 2019).

The originally delineated "direct APE" encompassed roadway ROWs where construction associated with the four Build Alternatives evaluated in the Draft EIS/EIR would occur. It also captured potential vibration, settlement, and visual effects to historic properties and included the street or parcels directly above the proposed tunnel areas and areas with ground disturbance associated with the four Build Alternatives.

The originally delineated APE additionally incorporated consideration for indirect effects to built environment resources in an "architectural APE." Generally, the architectural APE encompassed the direct APE plus one parcel out from the areas of construction or the first row of adjacent parcels in all areas where the alignment was proposed to be underground or aerial. Within locations where the alignment was proposed to be at-grade, within existing highway, railroad, or Metro ROW, the architectural APE was consistent with the direct APE. The vertical extent of the originally delineated APE varied based on the depth of ground disturbance and tunneling and areas where the alignment was proposed to be aerial. It roughly extended from approximately 115 feet below the existing ground surface to 90 feet above the existing ground surface.

After circulation of the Draft EIS/EIR, portions of the direct and architectural APE associated with the LPA were expanded in select locations to accommodate refinements to the LPA. The expansion primarily accounted for consideration of temporary construction easements and minor design changes resulting from stakeholder coordination and public comments received on the Draft EIS/EIR. Expansion of the APE followed the delineation methodology outlined above. However, in areas where small-scale, low-lying modifications consistent with the existing urban environment are proposed on parcels adjacent to road ROWs (for example, curb construction and sidewalk realignment) or where acquisitions may be needed to facilitate such modifications, the direct APE was expanded to encompass the construction footprint associated with those changes. In these locations, the architectural APE was limited to the parcel on which such modifications are proposed because the associated potential

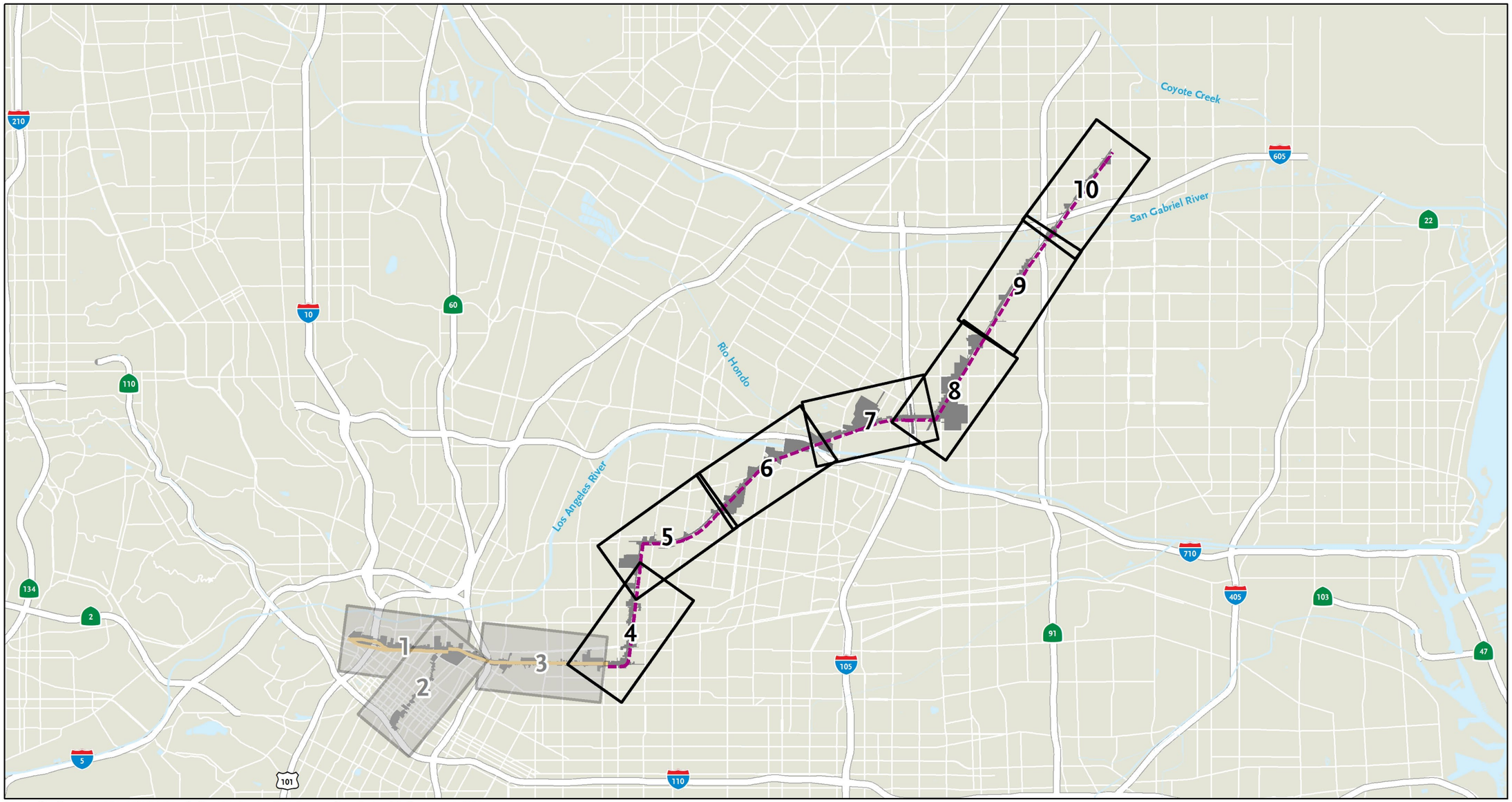
effects will be minor, visually unobtrusive, and will cause little change to the existing setting in a highly developed area.

Additionally, portions of the direct APE coincide with existing roadway ROW. In these locations, the direct APE considers ground disturbance associated with construction of roadway modifications, for example changes to lane geometry or the addition of traffic signals or at-grade crossing equipment. The methodology employed in expanding the APE in these areas assumes that in these locations, the direct APE extends up to 10 feet on adjacent parcels to account for potential ground disturbance associated with driveway regrading and curb and/or sidewalk reconstruction. Because the modifications proposed in these areas are consistent with existing conditions and their introduction does not have the potential to affect adjacent parcels as a whole, the architectural APE coincides with the direct APE in these areas. FTA and Metro discussed delineation methods associated with the APE expansion that occurred following circulation of the Draft EIS/EIR with representatives from the SHPO's office in a meeting held on May 22, 2023. These methods were detailed in the Survey Report—Rev 2, which was submitted to SHPO on May 11 2023, and received concurrence from SHPO on June 29, 2023.

The depth of the vertical APE was expanded from 115 below the existing ground surface to 150 feet to account for geotechnical investigations that will be conducted to support the advancement of design and construction. SHPO concurred with the expansion on March 12, 2024.

As the Final EIS/EIR focuses on the potential effects of the LPA, Figure 4.14-1 presents the direct (shown in blue) and architectural APE (shown in red) associated with the LPA. Due to their distance from the LPA, none of the historic properties/historical resources located north of the LPA have the potential to be impacted/affected by its construction or operation. They are therefore not discussed further in this section. A figure depicting the APE for the four Build Alternatives evaluated in the Draft EIS/EIR is included in Appendix A of the Survey Report–Rev 2.

Figure 4.14-1. Direct and Architectural APE and Built Environment Results Associated with the LPA



Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

Sheet Index

Sheet Index - Located Outside the Locally Preferred Alternative

Architectural APE

West Santa Ana Branch (WSAB) Proposed

Draft EIS/EIR Build Alternatives 1 and 2

Locally Preferred Alternative (Alternative 3)

Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

0 0.5 1 1.5 Miles

Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

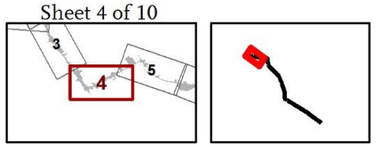
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Historic District Listed or Eligible for Listing in the NRHP

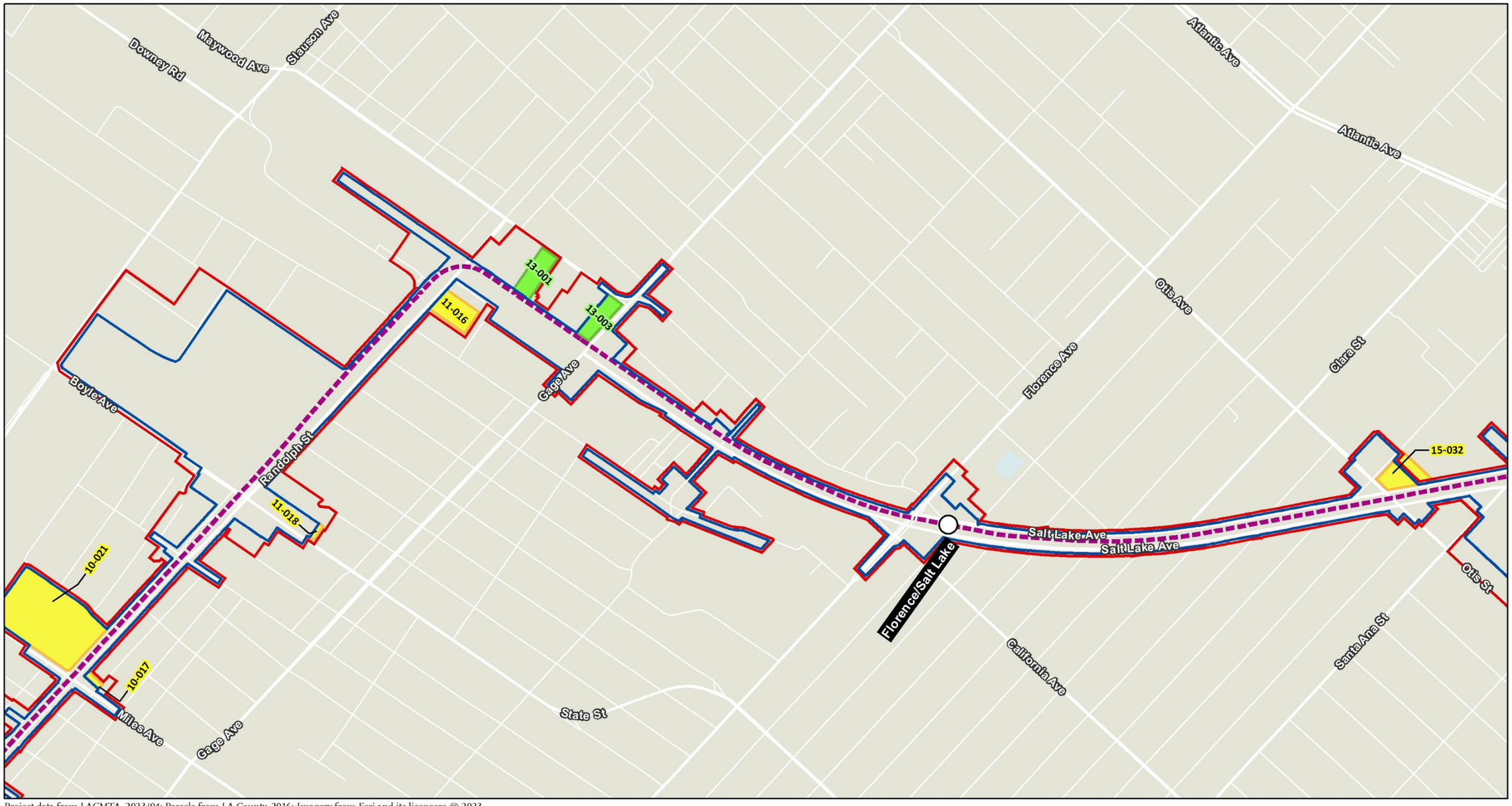
Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

N

0 400 800 Feet

Sheet 4 of 10





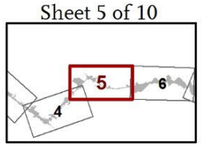
Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

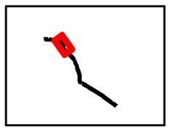
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Properties Listed and/or Eligible for Listing in the CRHR and/or for Local Listing

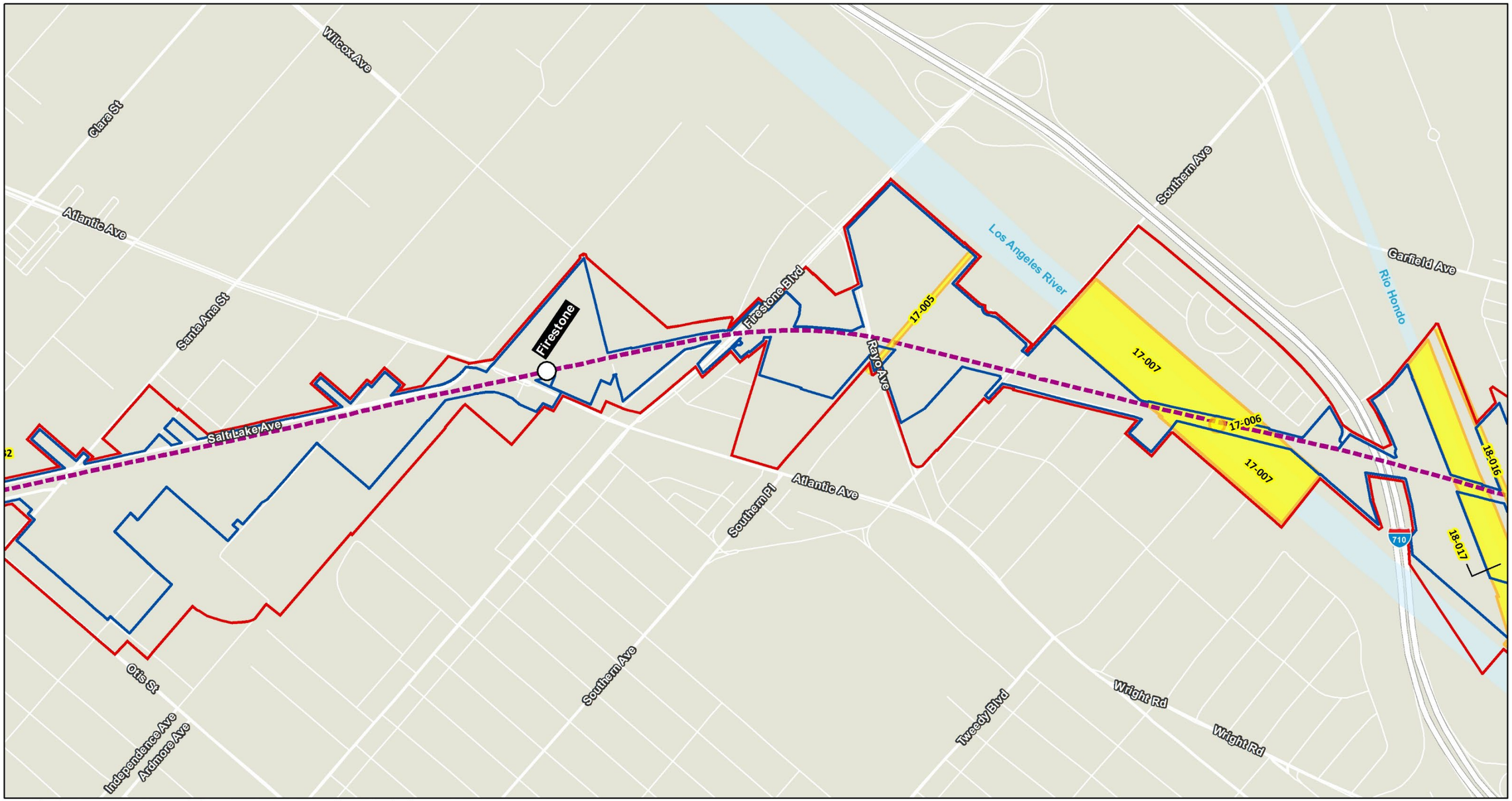
Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

0 400 800 Feet

Sheet 5 of 10





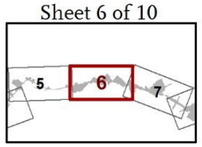


Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

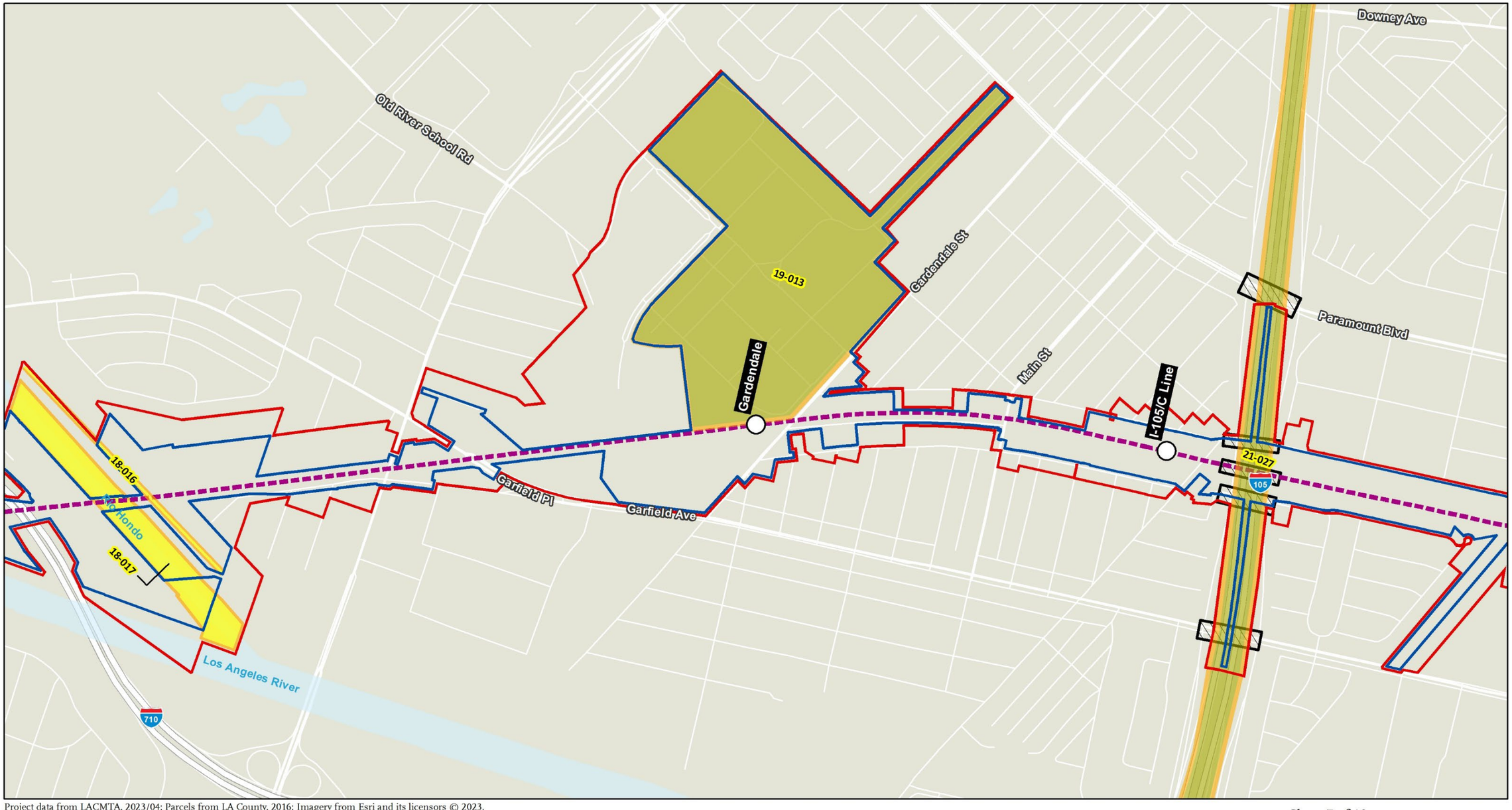
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Linear Non-Parcel Resource Listed in and/or eligible for listing in the NRHP
- Non-Parcel Resource Listed in and/or Eligible for Listing in the NRHP

Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

0 400 800 Feet



Sheet 6 of 10



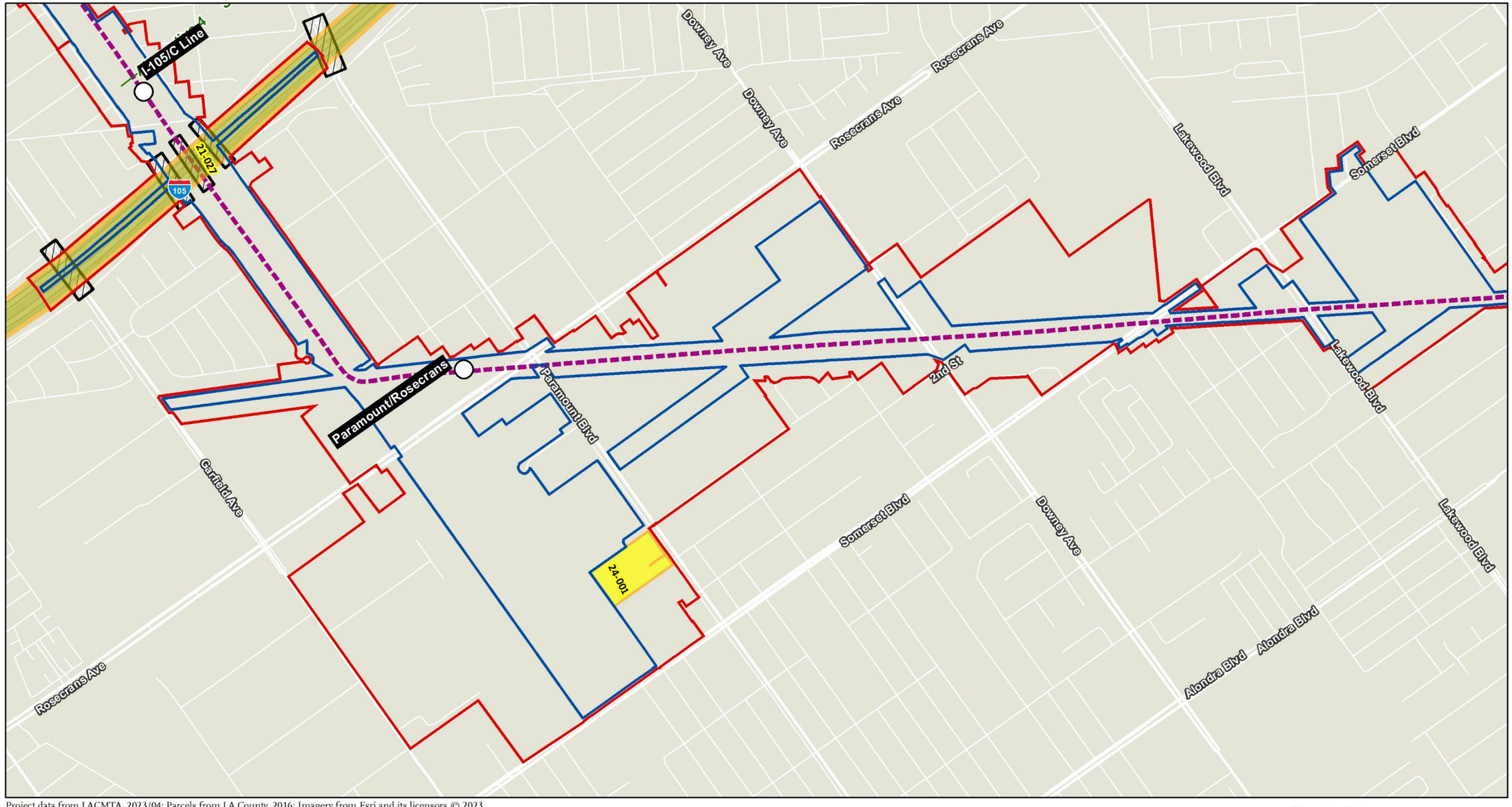
Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Historic District Listed or Eligible for Listing in the NRHP
- Linear Non-Parcel Resource Listed in and/or eligible for listing in the NRHP
- Contributing Bridges to the Century Freeway-Transitway Historic District
- Property Listed and/or Eligible for Listing in the NRHP

Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

0 400 800 Feet

Sheet 7 of 10



Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

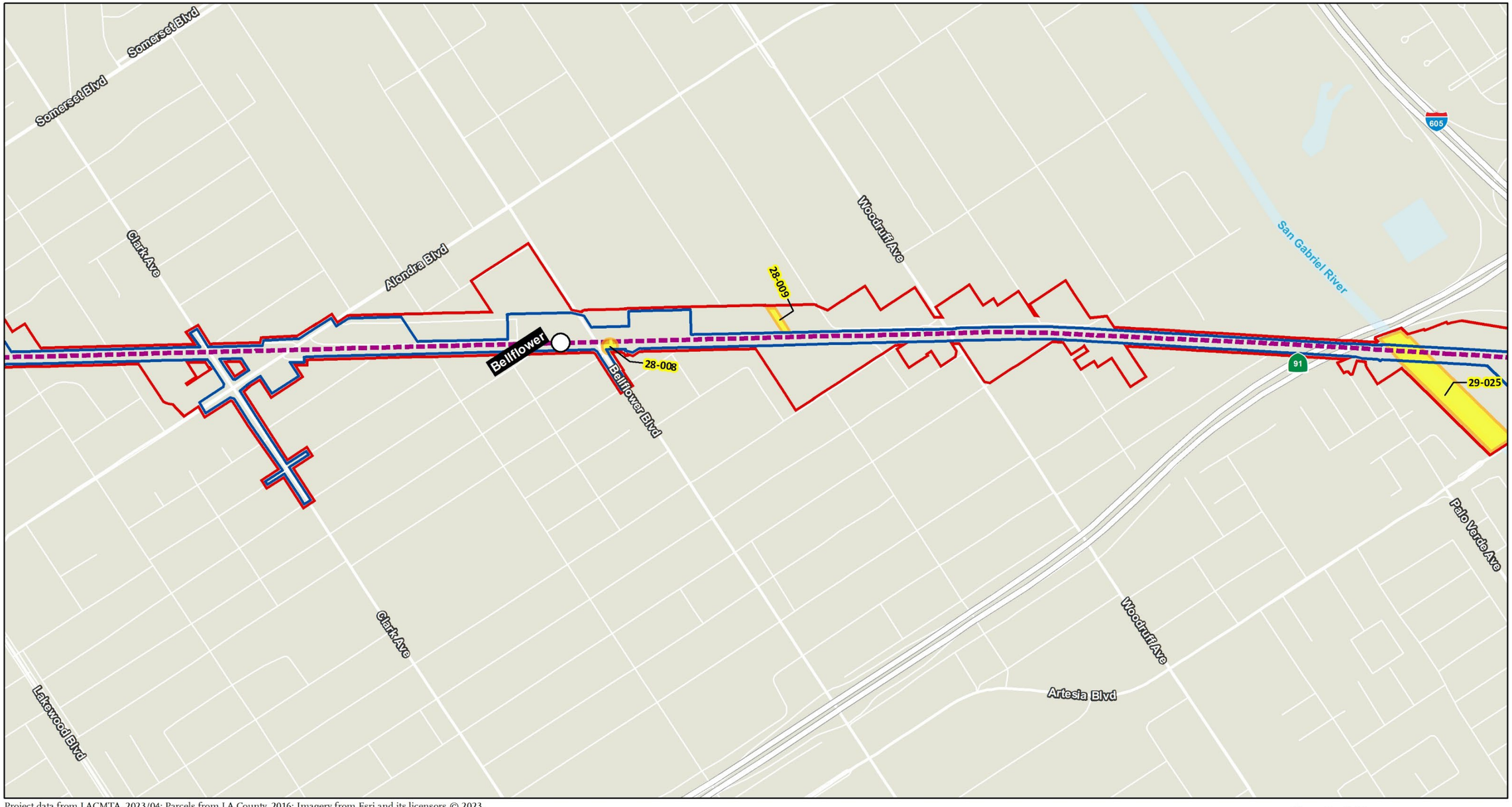
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Historic District Listed or Eligible for Listing in the NRHP
- Contributing Bridges to the Century Freeway-Transitway Historic District

Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

N

0 400 800 Feet

Sheet 8 of 10



Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

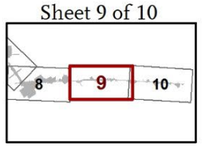
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the NRHP
- Non-Parcel Resource Listed in and/or Eligible for Listing in the NRHP

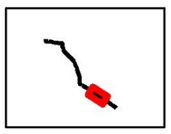
Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

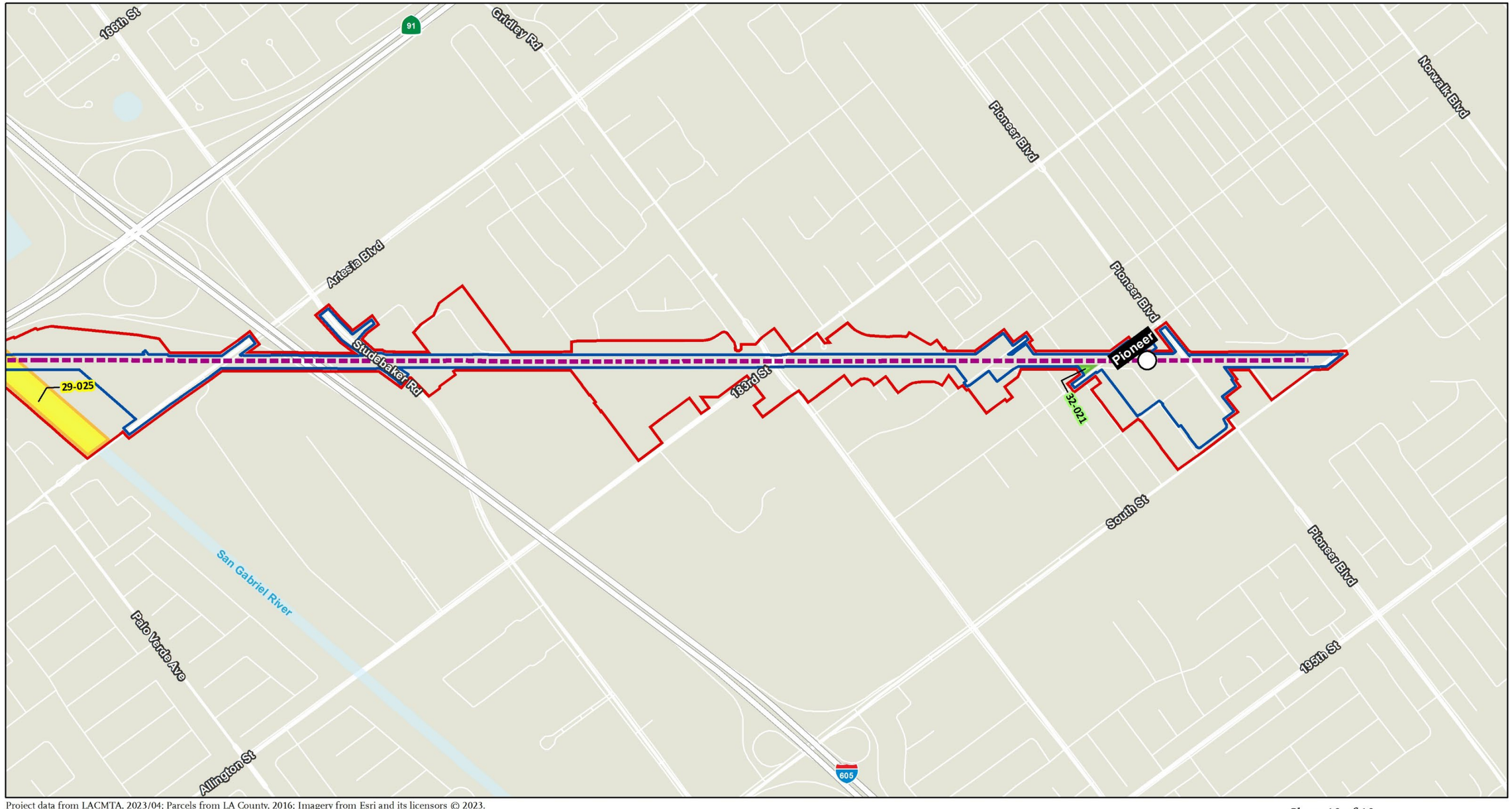
N

0 400 800 Feet

Sheet 9 of 10







Project data from LACMTA, 2023/04; Parcels from LA County, 2016; Imagery from Esri and its licensors © 2023.

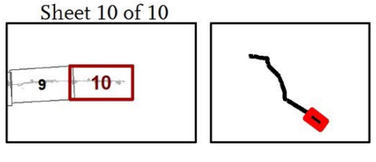
- Direct APE
- Architectural APE
- Station
- Locally Preferred Alternative
- Properties Listed and/or Eligible for Listing in the CRHR and/or for Local Listing
- Property Listed and/or Eligible for Listing in the NRHP

Note: The vertical extent of the APE for the LPA extends from 150 feet below grade to 90 feet above grade.

N

0 400 800 Feet

Sheet 10 of 10



Effects/Impacts Criteria

Federal Criteria

The analysis of potential effects on historic and archaeological resources is based on the Criteria of Adverse Effects, defined in 36 CFR 800 as: "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR 800.16[i]). The criteria of adverse effect are included below for reference.

> 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 National Register 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 National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. (36 CFR 800.5[a][1]).

According to 36 CFR 800.5[a][2], examples of an adverse effect on historic properties include, but are not limited to, the following:

(i) Physical destruction of or damage to all or part of the property;
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;
(iii) Removal of the property from its historic location;
(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
(v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

When the effects of the proposed undertaking do not meet the criteria of adverse effect, then a finding of no adverse effect may be proposed (36 CFR 800.5[b]). If an adverse effect is found, the agency shall act pursuant to 36 CFR 800.6 (36 CFR 800.5[d][2]) to resolve the adverse effect by developing and evaluating alternatives or modifications to the undertaking that "could avoid, minimize or mitigate adverse effects on historic properties" (36 CFR 800.6[a]).

State Criteria

The analysis of potential impacts on historic and archaeological resources is based on *CEQA Guidelines* Appendix G Criteria. According to these criteria, adverse impacts to cultural resources would be considered significant if the proposed project would:

- "Cause a substantial adverse change in the significance of a historical resource" as defined in CCR Section 15064.5 (defined as listed or determined eligible for a state or local register, or any building, structure, or object that is determined to be historically significant to California history)
- "Cause a substantial adverse change in the significance of an archaeological resource" pursuant to CCR Section 15064.5 or a unique archaeological resource as defined in PRC 21083.2[g]
- "Disturb any human remains, including those interred outside of formal cemeteries"

Section 15064.5 of the *CEQA Guidelines* provides that, in general, a resource not listed on state or local registers of historical resources shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the CRHR. This section also provides standards for determining what constitutes a "substantial adverse change" that must be considered a significant impact on archaeological or historical resources. For example, a "substantial adverse change" in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines*, 14 CCR §15064.5 [b][1]).

Types of Effects/Impacts

As stated above, Section 106 defines an effect, including both direct and indirect, as an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register [of Historic Places]." In assessing effects, Section 106 states that an adverse effect occurs when "…an undertaking may alter, directly or indirectly, any of the characteristics of a historic property…" Similarly, CEQA defines a significant impact to a historical resource as one that may cause a substantial adverse change in the significance of a historical resource (§ 21084.1). CEQA defines a substantial adverse change as the "…physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (15064.5).

This study considered both direct and indirect effects to historic properties/historical resources. Physical impacts to historic properties/historical resources primarily include their alteration or modification. In addition to physical effects/impacts, those such as noise, vibration, and visual effects/impacts were considered, as they too have the capability to adversely affect historic properties and significantly impact historical resources. The thresholds and methods for evaluating noise, vibration, and visual effects/impacts on historic properties/historical resources are further described in the following sections.

Noise Effects/Impacts

FTA has not established noise thresholds to determine the level of noise that would constitute an adverse effect/significant impact to historic properties/historical resources. Further, what constitutes a noise impact under NEPA may or may not be applicable or equivalent to effects on historic properties under Section 106 or significant impacts to

historical resources under CEQA. Under Section 106, an adverse noise effect would occur if it were to alter the characteristics of a historic property that make it eligible for inclusion in the NRHP or if it were to diminish a historic property's ability to convey historic significance. Similarly, under CEQA, a significant noise impact would occur if it were to result in the substantial adverse change in the significance of a historical resource.

The potential noise effects/impacts associated with the Project were evaluated and presented in the *West Santa Ana Branch Transit Corridor Project Final Noise and Vibration Impact Analysis Report* (Metro 2024j). However, an adverse effect/significant impact as assessed in the Noise and Vibration Impact Analysis Report does not necessarily imply an adverse effect/significant impact to a historic property/historical resource for the purposes of Section 106 or CEQA. Therefore, in the analysis presented in the Effects Report, noise effects/impacts were considered specifically for their ability to affect/impact the significance of historic properties/historical resources within the APE. In doing so, a property's sense of quiet or solitude as necessary to convey its historic significance was considered as part of the effects/impact analysis.

Vibration Effects/Impacts

Ground-borne vibration generated by construction equipment or project operation has the potential to result in damage to historic properties/historical resources. Physical damage to a historic property/historical resource may alter its characteristics such that it is no longer eligible for inclusion in the NRHP or that its ability to convey its historic significance is diminished. Physical damage may also constitute the substantial adverse change in the significance of a historical resource if the resource or its surroundings are physically altered. Depending on the nature and extent, physical damage to historic properties/historical resources due to vibration may constitute an adverse effect under Section 106 and a significant impact under CEQA.

Similar to noise effects/impacts, potential vibration effects/impacts of the LPA are evaluated and presented in the Noise and Vibration Impact Analysis Report. That study concluded that there are no locations in the APE in close proximity to a historic property/historical resource where construction or operation of the LPA will exceed the FTA-established thresholds for fragile buildings. For the purposes of the analysis presented herein, vibration effects/impacts that do not have the potential to result in damage to historic properties/historical resources were considered not adverse or significant.

Visual Effects/Impacts

Adverse visual effects under Section 106 are those that diminish a historic property's integrity, negatively affecting its ability to convey historic significance and hence compromising its eligibility for historic designation. Similarly, under CEQA, visual changes to a historical resource have the ability to result in substantial adverse change in the significance of that resource. Examples of such potential effects/impacts include the introduction of elements into the setting of a property and the alteration of the viewsheds to and from a historic property/historical resource.

Determining why a property is significant and understanding what characteristics make it so are essential to assessing visual effects/impacts. For the purposes of the analysis presented in this study, the existing relationship of a historic property/historical resource to its current setting and the reason for its significance and character-defining features were first identified.

The setting of a historic property/historical resource may or may not contribute to its significance and, therefore, the visibility of the Project from a given historic property/historical resource may or may not result in an adverse effect/significant impact. Visual effects/impacts were analyzed for their ability to diminish a property/resource's integrity of setting, if in fact setting is essential in a given property's ability to convey significance.

Paleontological Resources

Affected Area

The Affected Area for paleontological resources includes the ground surface and subsurface associated with the LPA, including the alignment, stations, MSF, TPSS sites, and parking facilities where ground disturbance may occur. This Affected Area corresponds to the area where potential effects/impacts may occur as a result of implementation of the LPA.

The paleontological sensitivity of the Affected Area for paleontological resources was evaluated according to the following Society of Vertebrate Paleontology (SVP) (SVP 2010) categories:

I. **High Potential (sensitivity)** – *Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas which may contain new vertebrate deposits, traces, or trackways are also classified as significant.*

II. **Low Potential (sensitivity)** – *Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.*

III. **Undetermined Potential (sensitivity)** – *Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.*

IV. **No Potential** – *Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.*

4.14.2 Affected Environment/Existing Conditions

A summary of the built environment and archaeological historic properties and historical resources in the APE and the sensitivity of the Affected Area for paleontological resources is included in the sections that follow.

4.14.2.1 Built Environment Historic Properties and Historical Resources

The built environment existing conditions within the APE are presented in detail in the Survey Report–*Rev 2*. The study presented in the Survey Report–*Rev 2* included the delineation of the APE (described in Section 4.14.1.2 and shown on Figure 4.14-1), archaeological and built environment field surveys, archival and background research inclusive of a California Historical Resources Information System records search, Assembly Bill 52 and Section 106 consultation, and the documentation and evaluation of 470 properties for historic designation.

A detailed APE map that identifies all properties recorded and evaluated as part of the study (inclusive of the four Build Alternatives evaluated in the Draft EIS/EIR) is included as Appendix A of the Survey Report*–Rev 2*. The APE map can additionally be cross referenced with Appendix E of the Survey Report –*Rev 2*, which includes a table that lists all of the properties evaluated for the study, along with their associated finding. Of the 470 properties documented and evaluated as part of the study, 39 properties were found eligible for listing in the NRHP and CRHR and are considered historic properties under Section 106 of the NHPA and historical resources under CEQA. An additional 14 properties were found ineligible for listing in the NRHP but eligible for the CRHR and/or local designation; these are only considered historical resources for the purposes of CEQA but are not historic properties under Section 106 of the NHPA. The remaining properties were found ineligible for listing in the NRHP, CRHR, or a local register; they are not considered historic properties under Section 106 of the NHPA or historical resources under CEQA.

The Survey Report –*Rev 2* identified 19 properties, including portions of 4 historic districts, in the APE for the LPA that are listed or determined eligible for listing in the NRHP. These properties are therefore considered historic properties for the purposes of Section 106 and historical resources under CEQA. The Survey Report –Rev 2 additionally identified three properties in the APE for the LPA that are ineligible for listing in the NRHP but eligible for the CRHR and/or local designation; these properties are considered historical resources for the purposes of CEQA and are not historic properties under Section 106 of the NHPA. Historic Properties/historical resources in the APE for the LPA are listed in Table 4.14.1. SHPO concurrence related to the identification of the above-noted built environment historic properties was received on June 29, 2023.

Table 4.14.1. Historic Properties/Historical Resources in the APE for the LPA

Property Name/Address	Map Reference No.	Section 106 Finding	CEQA Finding	Minimization/ Mitigation Measure
Pueblo Del Rio Public Housing Complex Historic District (portion of), Los Angeles	8-013	No adverse effect	Less than significant impact to historical resources	None required
6000 Alameda Street, Huntington Park**	9-015	No adverse effect	No impact to historical resources	None required
L & F Machine Company/2110 Belgrave Avenue, Huntington Park	9-034	No adverse effect	No impact to historical resources	None required
6101 Santa Fe Avenue, Huntington Park	10-012	No adverse effect	Less than significant impact to historical resources	None required
2860 Randolph Street, Huntington Park	10-017	No adverse effect	No impact to historical resources	None required
Huntington Park High School/6020 Miles Avenue, Huntington Park	10-021	No adverse effect	Less than significant impact historical resources	None required
Randolph Substation/Randolph Street, Huntington Park (APN: 6319-021-801)	11-016	No adverse effect	No impact to historical resources	None required
6300-6302 State Street, Huntington Park	11-018	No adverse effect	No impact to historical resources	None required
6231 Maywood Avenue, Huntington Park	13-001	Not applicable (6231 Maywood Ave. is not a historic property)	No impact to historical resources	None required
3477 East Gage Avenue, Huntington Park	13-003	Not applicable (3477 East Gage Ave. is not a historic property)	No impact to historical resources	None required
Cudahy Substation/Salt Lake Avenue, Cudahy	15-032	No adverse effect	Less than significant impact to historical resources	None required
No Address; LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line (P-19-188983)	17-005	No adverse effect	No impact to historical resources	None required
Union Pacific Los Angeles River Rail Bridge, South Gate	17-006	No adverse effect	Less than significant impact to historical resources	None required
Los Angeles River Channel, South Gate*	17-007	No adverse effect	Less than significant impact to historical resources	None required

Property Name/Address	Map Reference No.	Section 106 Finding	CEQA Finding	Minimization/ Mitigation Measure
No Address; Southern California Edison Long Beach – Laguna Bell 69 kV and 220 kV Transmission Line (P-19-192309)	18-016	No adverse effect	Less than significant impact to historical resources	None required
Rio Hondo Channel, South Gate*	18-017	No adverse effect	Less than significant impact to historical resources	None required
7601 East Imperial Highway, Downey (Rancho Los Amigos Medical Center Historic District/P-19-189330)	19-013	No adverse effect	Less than significant impact to historical resources	None required
Century Freeway-Transitway Historic District (portion of)	21-027	No adverse effect	Less than significant impact to historical resources	None required
Bellflower Pacific Electric Railway Depot/16336 Bellflower Boulevard, Bellflower (P-19-186111)	28-008	No adverse effect	No impact to historical resources	None required
10040 Flora Vista Street, Bellflower	28-009	No adverse effect	No impact to historical resources	None required
San Gabriel River Channel, Cerritos*	29-025	No adverse effect	Less than significant impact to historical resources	None required
The Frampton-Dantema House (portion of the Artesia Historic District)/18644 Alburtis Avenue, Artesia	32-021	Not applicable (18644 Alburtis Ave. is not a historic property)	No impact to historical resources	None required

Source: Metro 2023b
Notes: * Segment of a channelized river that is contributing to a larger historic district encompassing elements of the Los Angeles County Drainage Area (LACDA) Project.
** Property mistakenly addressed as 1978 Belgrave Avenue in the Draft EIS/EIR.
APE = Area of Potential Effects; APN = assessor's parcel number; Section 106=Section 106 of the National Historic Preservation Act; CEQA = California Environmental Quality Act; P=Primary Number; LADWP=Los Angeles Department of Water and Power; kV = kilovolt.; LPA = Locally Preferred Alternative

4.14.2.2 Archaeological Historic Properties/Historical Resources

The Survey Report—*Rev 1* identified one archaeological resource in proximity to the LPA: a historic-period utility line (Primary Number [P]: 19-002849). However, following circulation of the Draft EIS/EIR, additional documentation related to P-19-002849 was obtained that indicates the resource was previously destroyed. A report documenting the treatment of cultural resources discovered during construction of the Alameda Corridor Project, a rail project constructed between 1997 and 2002, documents the discovery of P-19-002849, describes the resource in detail, and states that it was removed in its entirety during construction of the project. It no longer exists within the APE for the LPA and is not considered a historic property or a historical resource. There are no known archaeological resources qualifying as historic properties/historical resources within the APE for the LPA. Therefore, this section summarizes the archaeological sensitivity in the APE for the LPA and the potential for unanticipated discoveries, which is discussed further in the WSAB Survey Report—Rev 2.

The area comprising the APE for the LPA has been heavily developed with multiple periods of development and redevelopment. Historic-era maps indicate that much of the area was developed in the early decades of the twentieth century. Currently, the area consists of a wide variety of development and land uses, including industrial, commercial, and residential property types. Based on the lack of presence of known resources and long history of ground-disturbing activities, the APE for the LPA is characterized by a low to moderate sensitivity for archaeological historic properties/historical resources. Portions of the LPA will be in proximity to major waterways (Los Angeles River, Rio Hondo channel, and San Gabriel River) where the sensitivity for buried resources is considered more moderate. Areas in proximity to natural waterways are generally more sensitive for archaeological resources as water is necessary for sustaining life. However, the potential for intact buried resources remains low based on the existing conditions of the APE for the LPA.

4.14.2.3 Paleontological Resources

The Affected Area for paleontological resources lies in the northwestern portion of the Peninsular Ranges geomorphic province, one of 11 major provinces in the state (CGS 2002). The Peninsular Ranges province is characterized by its northwest-trending valleys and faults that branch from the San Andreas fault zone (CGS 2002). The Peninsular Ranges consist of rocks from the Paleozoic (approximately 542 million to 251 million years ago [mya]) to late Cenozoic (approximately 65.5 mya to the present), including a large Jurassic (approximately 199.6 to 145.5 mya) to Cretaceous (approximately 145.5 to 65.5 mya) batholith that intrudes an older Triassic (approximately 251 and 199.6 mya) metasedimentary sequence (Kennedy et al. 2007). The batholith is predominately composed of tonalite, gabbro, granodiorite, and granite plutonic igneous rock (Todd et al. 2003). The Affected Area for paleontological resources is located on the wedge-shaped central block of the Los Angeles Basin where Cretaceous to Holocene (approximately 11,477 years ago [ya] to the present) sedimentary rocks unconformably overlie crystalline basement rocks (Roffers and Bedrossian 2010; Saucedo et al. 2007, 2016; Yerkes et al. 1965). The Los Angeles Basin is a structural basin that contains sediments that range in thickness from just a few feet to as much as 31,000 feet in some places (Yerkes et al. 1965). Throughout the basin, Quaternary sediments are mapped at the surface (Roffers and Bedrossian 2010; Saucedo et al. 2007, 2016).

The Affected Area for paleontological resources includes one geologic unit mapped at the surface: Quaternary younger alluvium, unit 2 (Qya_2; Campbell et al. 2014; Saucedo et al. 2016). This alluvial unit is composed of Holocene sediments at the surface. In the subsurface, the Holocene alluvial deposits overlie older late Pleistocene (approximately 126,000 to 11,477 ya) sediments at a depth as shallow as 5 feet bgs (McLeod 2017, 2018). This unit is therefore considered to have high paleontological sensitivity at depths at or below 5 feet.

Fossil Localities

Paleontologists normally distinguish invertebrate from vertebrate fossil localities (as opposed to the archaeological term "site") as each typically requires a different research approach. Invertebrate localities, especially when they comprise microscopic species such as diatoms, foraminifera, and radiolarians, but also when they include larger shelly marine fauna (e.g., clams), can require extensive bulk sediment sampling and processing. In addition, invertebrate fossils normally occur in marine lithologies, can be widespread and abundant, and are often well preserved. They tend to contain fewer separate hard parts subject to loss or destruction after death. In contrast, vertebrate fossils can be marine or nonmarine in origin, comprise large and/or small taxa (e.g., whales to rodents) that are locally distributed, numerically scarce (i.e., few individuals), and be poorly preserved. They tend to contain hundreds of separate hard parts (skeletal elements) that are easily lost or destroyed after death.

4.14.3 Environmental Consequences/Environmental Impacts

The following section presents a summary of the analysis of effects for the No Build Alternative, the LPA, the design option, and MSF.

4.14.3.1 Built Environment Historic Properties

For the purposes of Section 106 and as detailed below, this section describes the determinations of effect to built environment historic properties that will result from operation of the LPA, including the design option and the MSF. SHPO concurrence on this effects determination was received on March 12, 2024.

No Build Alternative

Under the No Build Alternative, the LPA would not be constructed. The existing transportation network would remain, and planned transportation improvements that have been committed to and identified in Metro's constrained 2009 LRTP (Metro 2009a) and the SCAG 2016-2040 RTP/SCS (SCAG 2016a), as well as additional projects funded by Measure M that would be completed by 2042, would be implemented. Under the No Build Alternative, the environmental setting would remain in current conditions, with the addition of currently planned and funded projects. Individual projects would undergo separate environmental review to determine the individual project's effects and mitigation, as necessary. Therefore, there would be no effect to built environment historic properties as a result of the No Build Alternative and no mitigation would be required.

Locally Preferred Alternative

Operational effects to built environment historic properties in the APE for the LPA are those directly related to operation of the LPA. These potential effects include those resulting from noise, vibration, and visual effects, in addition to property acquisitions and easements. There are 19 built environment historic properties located in the APE for the LPA. The Effects Report includes a detailed evaluation for each of the built environment historic properties;

the evaluation is summarized below. As indicated in the Effects Report and summarized below, operation of the LPA will result in no adverse effect to built environment historic properties and no minimization measures are required.

Potential noise and vibration effects related to operation of the LPA were evaluated and presented in the Noise and Vibration Impact Analysis Report and summarized in the Effects Report and Section 4.7, Noise and Vibration, of this Final EIS/EIR. Operational vibration levels associated with the LPA will not result in physical damage to any of the historic properties in the APE for the LPA. The APE for the LPA traverses an already urbanized environment that regularly and consistently experiences noise and vibration similar to that which will result from operation of the LPA. Therefore, noise and vibration associated with operation of the LPA will not change the character of use or alter the characteristics of any of the historic properties in the APE for the LPA that qualify them for inclusion in the NRHP. Operational noise and/or vibration associated with the LPA will therefore result in no adverse effects to built environment historic properties.

Operation of the LPA will require the introduction of structures and equipment that will add new visual elements to the existing urban landscape that comprises the APE for the LPA. These visual elements include station entrances, catenary poles and wires, aerial rail structures, TPSSs, and soundwalls. These new elements will be contemporary in design and therefore will be differentiated from historic-period features. However, as the APE for the LPA is within an already urban setting, the new elements will be in keeping with the existing setting and will not change the character of any historic property's use or the physical features within the setting that contribute to their historic significance. New elements will not block significant views to or from any of the historic properties in the APE for the LPA. The introduction of new visual elements as a result of operation of the LPA will not diminish the integrity of any built environment historic properties in the APE for the LPA and therefore will result in no adverse effects.

Three historic properties in the APE for the LPA (6101 Santa Fe Avenue [MRN 10-012] and 6020 Miles Avenue [MRN 10-021] in Huntington Park, and Cudahy Substation [MRN 15-032] in Cudahy) will be altered by minor, small-scale permanent acquisitions or easements that encompass small portions of the properties necessary to support operation of the LPA. Specifically, the LPA will require the following acquisitions:

- 6101 Santa Fe Avenue: Approximately 30 square feet of the property's northeast corner
- 6020 Miles Avenue: Approximately 700 square feet of the property's southwest corner
- Cudahy Substation: Approximately 130 square feet of the property's southwest corner

Additionally, a small portion consisting of approximately 6,370 square feet of the corridor occupied by the SCE Long Beach to Laguna Bell Transmission Line [MRN 18-016], which is an approximately 9.5-mile-long linear resource, will be permanently acquired to support operation of the LPA. The potential effects/impacts of these acquisitions are analyzed in detail in the following sections of the Effects Report: Section 5.2.2.3: 6101 Santa Fe Avenue, Section 5.2.2.5: 6020 Miles Avenue, Section 5.2.2.10: Cudahy Substation, Section 5.2.2.15: SCE Long Beach to Laguna Bell Transmission Line.

Modifications to these properties as a result of easements and associated infrastructure development are minor and consistent with the existing surroundings, which consist of a highly urbanized setting encompassing paved roadways, traffic signals, sidewalks, and curbs. The elements that will be introduced by the LPA are in keeping with the existing setting of these historic properties. Additionally, none of the built environment features within the boundaries of these historic properties will be altered as a result of modifications. Therefore, the acquisitions and associated modifications will not result in adverse effects to these historic properties.

In addition to the acquisitions and small-scale modifications noted above, operation of the LPA will require the physical alteration of the following historic properties, which are discussed individually in the sections that follow: small portions of the 105 historic district (MRN 21-027) in Paramount, the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) in South Gate, the Los Angeles River channel (MRN 17-007) in South Gate, the Rio Hondo channel (MRN 18-017) in South Gate, and the San Gabriel River channel (MRN 29-025) in Cerritos.

105 Historic District (MRN 21-027)

Implementation of the LPA will result in the physical alteration of a small portion of one Caltrans-owned facility, the 105 historic district. Proposed modifications to the district include the following: demolition and replacement of one character-defining bridge (the Century Boulevard Underpass), construction of a new infill Metro C Line station and associated vertical circulation element (VCE)s in the median of I-105 below the existing Façade Avenue Overcrossing, realignment of 2,500 feet of existing Metro C Line LRT track to accommodate the infill station platform, and minimal removal and replacement of landscaping. Each of these project elements is discussed in further detail below.

To accommodate the LPA within the existing railroad ROW while maintaining freight connectivity, the existing Century Boulevard Underpass will be demolished and two new overcrossings will be constructed, a new LRT bridge and a replacement freight bridge, roughly in the location of the existing freight bridge. The current Century Boulevard Underpass was built in 1988 with contemporary materials and design. It consists of a concrete box girder bridge with four spans supported by eight-sided bents. It is roughly 34 feet wide and features standard railings and minimal detailing consisting of simple relief in bents and along its superstructure. The replacement Century Boulevard Underpass will also be a four-span, cast-in-place, prestressed concrete box girder structure. While implementation of the LPA will require demolition of one of the district's character-defining bridges, the current Century Boulevard Underpass is not individually eligible and is not noteworthy for its architectural style or design. It is 1 of 118 bridges identified as character-defining in the district, the remainder of which will remain in place.

Implementation of the LPA will also result in construction of an additional overcrossing within the boundaries of the district, immediately east of the replacement freight bridge. The locations of the replacement freight bridge and new LRT bridge are such that the overall rhythm of overcrossings at this location within the district, which was not identified as character-defining in prior Caltrans' documentation, will not be interrupted. The new LRT bridge will be generally consistent in its scale, massing, materials, and design with other bridges throughout the district. In addition, Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the Secretary of Interior

(SOI)'s Standards for the Treatment of Historic Properties (Standards) and guidelines for Rehabilitation. Accordingly, the new LRT bridge's design will be reviewed and approved by a professional meeting the SOI Professional Qualification Standards (PQS) in architectural history, history, or architecture as it advances. The replacement freight bridge will also be consistent in its overall scale and massing with other bridges throughout the district, including the proposed new LRT bridge, and it will feature a low-relief design to match the relief present on character-defining bridges throughout the district.

The transitway district is the last urban interstate constructed in California and was the subject of a landmark environmental justice lawsuit and associated settlement agreement. Its historic significance is partially based on its status as the final full-length, inner-city interstate, the incorporation of new Intelligent Transportation System (ITS) features, its large intermodal interchanges, and the integral light rail system and stations in the median. It is the first freeway to be built to accommodate a mass transit line. Character-defining features of the district include approximately 18 miles of Metro C Line LRT tracks and 10 associated LRT stations in the median of I-105, which feature various contemporary designs and integrate a variety of features, including multi-story elements, decorative metal canopies, soundwalls, and VCEs such as concrete stairs, elevators, and escalators. The LPA includes construction of a new infill Metro C Line station with associated VCEs in the median of I-105 to provide a transfer from the Metro C Line to the LPA. Consistent with other stations throughout the district, VCEs, which will connect to the Façade Avenue Overcrossing and the new LRT bridge, may consist of elevators, stairs, and/or escalators. Although the Façade Avenue Overcrossing will be altered to accommodate the VCEs, the existing structure is not significant for its aesthetic or engineering qualities, nor is it individually significant. The VCEs that will be introduced are in keeping with the district's original design intent and support, and enhance its intermodal capabilities and continued future use. These elements are common throughout the district and those introduced by the LPA will be consistent in scale, mass, and overall design with those located within character-defining stations throughout. Similarly, while soundwalls will be included along the edges of the new station, soundwalls will be of a consistent scale and massing as those located throughout the district.

While a new station will introduce structural elements not currently present at this location within the district, I-105 is the only known interstate specifically designed and built to be intermodal, and its historical significance is partially derived from this unique quality. The function of the new infill Metro C Line station is in keeping with the district's original design intent and supports the freeway's continued intermodal network into the future. Additionally, the new infill Metro C Line station, like other Metro stations within the I-105, will be in the median of I-105 and consistent in scale, mass, and design aesthetic with character-defining stations throughout the district. The addition of a station in this location will not result in a change in the character of the district; rather it will enhance and support the character of the property's intermodal use. Additionally, Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Accordingly, design of the new infill Metro C Line station will be reviewed and approved by a professional meeting the SOI PQS in architectural history, history, or architecture to confirm that it remains consistent with the fundamental principles of the SOI Standards and guidelines for Rehabilitation.

To accommodate the new infill Metro C Line station, approximately 2,500 feet of Metro C Line LRT track will be realigned (0.47 mile; approximately 2.5 percent of the district's approximately 18 miles of Metro C Line track). However, this realignment will consist of a modest shift not to

exceed 7.5 feet. The light rail in the median of I-105 is identified by Caltrans in the Condition Assessment Report for the Century Freeway-Transitway Historic District, in 2019 (Caltrans condition assessment report) (Smith and Harper 2019) as one of the freeway's significant character-defining features; however, similar to the district's bridges, the light rail is significant for its integration into the freeway's design in support of its intermodal nature and not for its design or engineering. After realignment, the LRT tracks will remain an integrated component of the interstate and located in the median; they will continue to serve a purpose consistent with their historic and current function in support of the district's intermodal nature. Catenary wires will be served by duct banks and cables powered by existing power substations, consistent with current design and operation. Additionally, materials removed to facilitate track realignment will be replaced in-kind, and the overall alignment of the Metro C Line within the I-105 median will remain intact following implementation of the LPA.

The construction of the LPA will require the removal and replacement of minimal landscaping (up to 15 trees); however, the trees will be replaced at a 1:1 ratio prior to the start of service of the LPA. While the district's character is partially defined by its landscaped nature, the proposed alterations to the district's landscaping will not alter any of the characteristics that qualify it for inclusion in the NRHP in a way that will reduce its overall integrity, given its roughly 19-mile length. As the LPA will only alter landscaping in a relatively small portion of the district, a substantial majority of the landscaping present throughout the district will remain unaffected by implementation of the LPA. Additionally, a review of historical and aerial imagery of the district indicates that much of the landscaping present on the north berm within the APE for the LPA appears to have been planted between 2000 and 2003 and, therefore, does not date to its period of significance. However, trees on the north berm within the APE for the LPA will also be replaced at a 1:1 ratio prior to the start of service of the LPA.

National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, indicates that for a historic district to retain integrity as a whole, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished, and the relationships among the district's components must also be substantially unchanged since the period of significance. Implementation of the LPA will result in the physical alteration of a small portion of the district; however, the substantial majority of the district's character-defining features will remain unaltered, and importantly, the district's components (both original and replaced) will retain their relationships to one another through the district's continued multimodal design.

As discussed above, the LPA will require demolition of one character-defining feature of the district (the Century Boulevard Underpass), which constitutes less than 1 percent of the character-defining bridges within the district, 117 of which will remain following implementation of the LPA. Caltrans documentation of the district indicates that while the bridges contribute to the district, they are not individually significant or significant engineering achievements. Rather, the district's overall significance is derived from its association with an Environmental Justice lawsuit and subsequent legal agreement and its intermodal design, including the LRT system, and integration of then-novel ITS features. The additional elements proposed for construction within the district, including the new LRT bridge, replacement freight bridge, and new Metro C Line station and VCEs, will be designed in a manner compatible in massing, scale, and overall design with the district such that they will not significantly reduce the district's overall integrity. The new LRT and replacement freight bridges will also feature a concrete relief design consistent with that present on other character-defining

bridges within the district. In addition, Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Accordingly, design of the new LRT bridge and new infill Metro C Line station will be reviewed by a professional who meets the SOI PQS in architectural history, history, or architecture to confirm the design remains consistent with the fundamental principles of the SOI Standards and guidelines for Rehabilitation. Additionally, coordination with Caltrans will continue as the project design progresses.

The LPA will alter only a small portion of the district, and following implementation of the LPA, the district's appearance will continue to reflect the intermodal and aesthetic design it currently employs. The LPA will not alter any of the characteristics of the property that qualify it for inclusion in the NRHP, nor will it diminish its integrity of location, design, setting, materials, workmanship, feeling, and association. As indicated by the analysis presented above, implementation of the LPA will result in ***no adverse effects*** to the 105 historic district and no minimization measures are required.

Union Pacific Los Angeles River Rail Bridge (MRN 17-006)

Alterations to the Union Pacific Los Angeles River Rail Bridge to enable operation of the LPA will include the extension of the bridge's existing nonoriginal debris walls to support a new LRT bridge. The existing bridge will remain intact and continue its historic and current use following implementation of the LPA. While the LPA will not physically alter the deck of the bridge, the bridge's existing nonoriginal concrete debris walls will be extended to the north to support the new LRT bridge constructed for the LPA to cross the Los Angeles River channel. Modifications to the debris walls will be undertaken using materials consistent with the existing piers and debris walls, and the scale and massing of extended portions of the debris walls will be consistent with those currently extant. While the bridge's integrity of design, materials, and workmanship will be altered by the LPA, modifications will be undertaken in a manner such that the historic property will not be adversely affected. Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Accordingly, as it advances, design of the extension of the concrete debris walls will be reviewed and approved by a professional who meets the SOI PQS in architectural history, history, or architecture to confirm that it remains consistent with the SOI Standards and guidelines for Rehabilitation.

In addition to the physical alterations described above, new permanent visual elements consisting of a bridge with soundwalls will be introduced. While the new bridge will partially obstruct views to and from the Union Pacific Los Angeles River Bridge, which will be situated south of the new bridge, the introduction of the structure and its associated features is compatible with the bridge's current surrounding industrial setting, which includes numerous transmission lines, rail lines, and industrial and commercial properties. Mid-ground views of the existing bridge, currently available at an angle along Imperial Highway and Firestone Boulevard, will also remain, as will the view from I-710, which at 0.3 mile south of the Union Pacific Los Angeles River Bridge will continue to offer unobstructed views of the bridge. Currently, the only publicly accessible vantage point with direct access to the Union Pacific Los Angeles River Bridge is the Los Angeles River Bikeway, where an unobstructed view will remain on the west bank of the river, south of the bridge. The scale and massing of the new bridge will be larger than that of the existing bridge; however, the new bridge will be compatible with the visual character of the concrete-lined flood control channel that it crosses. Due to the existing setting, the addition of the project-related visual

elements from both construction and operation will not diminish the property's integrity of setting, feeling, or association, and will not detract from the character of the area.

The LPA will not alter any of the characteristics of the Union Pacific Los Angeles River Bridge that qualify it for inclusion in the NRHP and CRHR, as well as for local designation, nor will it diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association such that it would be adversely affected. Therefore, implementation of the LPA will result in ***no adverse effects*** to the Union Pacific Los Angeles River Rail Bridge.

U.S. Army Corps of Engineers Facilities

The LPA will cross three river channels under the jurisdiction of the USACE: the Los Angeles River channel (MR 17-007), Rio Hondo Channel (MR 18-017), and the San Gabriel River channel (MR 29-025), all of which will be minimally altered to accommodate the LPA. However, alterations are small in scale when considered in the context of these resources, all of which are portions of large-scale water conveyance features that span many miles. These channels were designed as flood control measures/water conveyance systems in an area of anticipated rapid urban development; the purpose of their construction and existence within an urbanized landscape is directly related to their historical significance. Alterations within the boundaries of these historic properties will occur in small segments of the much larger resources. The new structures proposed within the boundaries of these historic properties will not alter the characteristics that qualify them for historic designation, for example their route, profile, and concrete-lined trapezoidal shape, such that their ability to convey significance will be diminished or they will be adversely affected; therefore, no minimization measures are required. An individual analysis of effects to each of the river channels is included in the sections that follow.

Los Angeles River Channel (MRN 17-007)

The Los Angeles River channel was determined NRHP-eligible by USACE in 2022, and SHPO concurred with that determination. The portion of the Los Angeles River channel within the APE for the LPA (subject segment) represents approximately 2,400 feet or 0.45 mile (less than 1 percent) of the river channel's 51-mile length, which was lined with concrete as part of the LACDA Project in 1951. Operation of the LPA will require the addition of a new LRT bridge over the Los Angeles River channel and the partial removal of the existing debris walls attached to the Union Pacific Los Angeles River Bridge's piers to enable the reconstruction of extended pier walls to also support the new LRT bridge. Potential effects to the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) are analyzed individually in a preceding section. The river channel's character-defining features include its orientation, roughly north-south, in addition to its overall size and shape, which enable it to effectively direct water throughout its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portion within the APE for the LPA.

The LPA will introduce new permanent visual elements, most notably an LRT bridge, into the Los Angeles River channel, approximately 10 feet to the north of the existing Union Pacific Los Angeles River Bridge. The LPA will alter the channel by introducing a new bridge, piers, and abutments and will therefore diminish its integrity of design, materials, and workmanship. However, modifications will not result in adverse effects because the river's character-defining features, notably its concrete-lined trapezoidal shape, will remain intact and new project elements will be compatible with the design, workmanship, and materials found throughout the 51-mile river. The new LRT bridge will not change the historic alignment of the river or result in the

removal or substantial alteration of its character-defining features. New additions will be differentiated and will not create a false sense of historic development; they will be unique but compatible with other features found throughout the Los Angeles River channel.

The operation of the LPA will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic and current capacity. The new LRT bridge and its associated features, including soundwalls, rail track, and catenary poles and wires, are compatible with the subject segment's surrounding urban industrial setting, which includes numerous transmission lines, rail lines, and industrial and commercial properties. Additionally, many bridges dating from various construction periods cross the river channel throughout its 51-mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The project actions are confined to a small portion of the historic property and will not alter any of the characteristics of the subject segment that qualify it for inclusion in the NRHP. Following completion of the LPA, the Los Angeles River channel will continue to be used as it was historically. Further, the actions proposed are small in scale when considered in the context of the 51-mile alignment of the river as a whole. Therefore, the LPA will result in ***no adverse effect*** to the Los Angeles River channel.

Rio Hondo Channel (MRN 18-017)

The Rio Hondo channel was determined NRHP-eligible by the USACE in 2022, and SHPO concurred with that determination. The portion of the Rio Hondo channel in the APE for the LPA (subject segment) represents approximately 2,900 feet or 0.54 mile (less than 4 percent) of the 16-mile-long river channel completed in 1951 as part of the LACDA Project. Operation of the LPA will introduce new permanent visual elements, most notably an LRT bridge, into the Rio Hondo channel, approximately 15 feet west of the existing Rio Hondo Bridge (MRN 18-015), which is not a historic property. The segment's character-defining features include its orientation, roughly northeast-to-southwest, which, in addition to its overall size and shape, enable it to effectively direct water through its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portions within the APE for the LPA.

Construction of the LRT bridge will require partial removal of the existing debris walls attached to the Rio Hondo Bridge's piers to enable the reconstruction of extended pier walls to support the new LRT bridge. However, the demolition and reconstruction with in-kind materials within these portions of the channel will not introduce visual, atmospheric, or audible elements that will diminish the overall integrity of the Rio Hondo channel, which will remain a historic property despite operation of the LPA. Overall, the river's original form, design, and setting will remain intact, and replacement materials will be consistent in size, scale, and materials with the existing historic waterway. Additionally, the channelization of the river was intended to allow for urban development proximate to the channel, and implementation of the LPA is therefore consistent with its historic and current function and purpose.

The LPA will introduce new permanent visual elements, most notably an LRT bridge, into the Rio Hondo channel, approximately 15 feet west of the existing Rio Hondo Bridge. While the LPA will alter the channel by introducing a new bridge, piers, and abutments, modifications will not result in adverse effects because the river's character-defining features

will remain intact and the new project elements will be compatible with the design, workmanship, and materials found throughout the 51-mile river. The new LRT bridge will not change the historic alignment of the river or result in the removal or substantial alteration of its character-defining features. New additions will be differentiated and will not create a false sense of historic development; they will be unique but compatible with other features found throughout the Rio Hondo channel.

Although the LPA will result in construction within the subject segment, it will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic and current capacity. The new LRT bridge and its associated features, such as soundwalls, rail track, and catenary poles and wires, are generally compatible with the subject segment's surrounding setting, which includes the presence of built features, such as transmission lines, rail lines, and I-710, in addition to a variety of industrial and commercial properties. Additionally, many bridges dating from various construction periods cross the river channel throughout its 16-mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The LPA will alter only a small segment of the Rio Hondo channel and will not modify any of the characteristics of the property that qualify it for inclusion in the NRHP, nor will it diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association. Following completion of the LPA, the Rio Hondo channel will continue to be used as it was historically. Further, the actions proposed are small in scale when considered in the context of the 16-mile alignment of the river as a whole. Therefore, the LPA will result in ***no adverse effect*** to the Rio Hondo channel.

San Gabriel River Channel (29-025)

The San Gabriel River channel was determined NRHP-eligible by the USACE in 2022, and SHPO concurred with that determination. The portion of the San Gabriel River channel within the APE for the LPA (subject segment) includes roughly 1,220 linear feet or 0.23 mile of the 58-mile-long channel (less than 1 percent), which was completed in 1966 as part of the LACDA Project. Implementation of the LPA will require introduction of a new LRT bridge to cross over the San Gabriel River channel in roughly the same location as the existing abandoned San Gabriel River Bridge (MRN 29-022), which will be demolished and is not a historic property. The segment's character-defining features include its orientation, roughly north-to-south course which, in addition to its overall size and shape, enable it to effectively direct water through its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portions within the APE for the LPA.

Although the LPA will introduce a new bridge, piers, and abutments, the river's character-defining features will remain intact and the new project elements will be compatible with the design, workmanship, and materials found throughout the 58-mile-long river. The new LRT bridge will not change the historic alignment of the river or result in the removal or substantial alteration of its character-defining features. New additions will be differentiated and will not create a false sense of historic development; they will be unique but compatible with other features found throughout the San Gabriel River channel.

Although the LPA will result in construction within the subject segment, it will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic and current capacity. Additionally, while demolition and construction activities may

require removal of concrete within the channel, all removed materials will be replaced in-kind. The replacement LRT bridge and its associated features, such as soundwalls, rail track, and catenary poles and wires, are generally compatible with the subject segment's surrounding setting, which is highly urbanized and includes the presence of built features such as transmission lines and existing rail lines, in addition to a variety of property types. Additionally, many bridges dating from various periods cross the river channel throughout its 58-mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The alterations proposed as part of the LPA are confined to a small portion of the San Gabriel River channel. The LPA will not alter any of the characteristics of the portion of the San Gabriel River channel in the APE that qualify it for inclusion in the NRHP. Implementation of the LPA will not alter any of the channel's character-defining features. Therefore, it will not diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association. Operation of the LPA will result in ***no adverse effects*** to the San Gabriel River channel, and no minimization measures are required.

Conclusion

As indicated by the analysis presented above, operation of the LPA will not alter the characteristics of the built environment historic properties in the APE for the LPA that qualify them for inclusion in the NRHP. Therefore, for the purposes of Section 106, operation of the LPA will result in ***no adverse effect*** to built environment historic properties, and no minimization measures are required. SHPO concurrence on this effects determination was received on March 12, 2024.

Design Option: Close 186th Street

No historic properties have been identified in the APE for the LPA in the vicinity of the design option. Therefore, operation of the LPA with the design option would not result in effects to historic properties and no minimization measures would be required.

Maintenance and Storage Facility

No historic properties have been identified in the APE for the LPA in the vicinity of the MSF site. Therefore, operation of the MSF will result in no effects to historic properties and no minimization measures are required.

4.14.3.2 Archaeological Historic Properties

No Build Alternative

Under the No Build Alternative, the LPA would not be constructed. The existing transportation network would remain, and planned transportation improvements that have been committed to and identified in the constrained 2009 LRTP and SCAG's 2016-2040 RTP/SCS, as well as additional projects funded by Measure M that would be completed by 2042, would be implemented. Under the No Build Alternative, the environmental setting would remain in current conditions, with the addition of currently planned and funded projects. However, operation of planned projects is not anticipated to result in ground disturbance. As there would be no ground disturbance under the No Build Alternative, no effect to known or unanticipated archaeological resources would occur, and no minimization or mitigation measures would be required.

Locally Preferred Alternative

No known archaeological resources qualifying as historic properties are present within the APE for the LPA. The APE for the LPA is considered to have low to moderate sensitivity for the presence of buried archaeological deposits that could qualify as historic properties. Operation (inclusive of maintenance) of the LPA will require minimal, if any, ground-disturbing activities. Therefore, there will be no effects to archaeological historic properties during operation of the LPA and no minimization measures are required.

U.S. Army Corps of Engineers Facilities

No known archaeological historic properties have been identified in the vicinity of the USACE facilities. Minimal, if any, ground-disturbing activities are proposed at the USACE facilities during operation of the LPA. As a result, there will be no effects to archaeological historic properties and no minimization measures are required.

Design Option: Close 186th Street

No known archaeological resources qualifying as historic properties have been identified in the APE for the LPA near the design option. There will be minimal, if any, ground disturbance associated with the ongoing operation of the design option. Therefore, there will be no effect to archaeological historic properties as a result of operation of the LPA with the design option and no minimization measures would be required.

Maintenance and Storage Facility

No known archaeological historic properties have been identified in the APE for the LPA in the vicinity of the MSF site. Minimal, if any, ground-disturbing activities are proposed at the MSF during the operation phase of the LPA. As a result, there will be no effects to archaeological historic properties as a result of operation of the MSF and no minimization measures are required.

4.14.3.3 Paleontological Resources

No Build Alternative

Under the No Build Alternative, the LPA would not be constructed. The existing transportation network would remain and planned transportation improvements that have been committed to and identified in the constrained 2009 LRTP and SCAG's 2016-2040 RTP/SCS, as well as additional projects funded by Measure M that would be completed by 2042, would be implemented. Under the No Built Alternative, the environmental setting would remain in current conditions, with the addition of currently planned and funded projects. However, operation of planned projects is not anticipated to result in ground disturbance. The No Build Alternative would result in no effect to paleontological resources and mitigation would not be required.

Locally Preferred Alternative

Under NEPA, direct and indirect adverse effects to paleontological resources due to operation of the LPA (inclusive of maintenance) will be negligible because there will be minimal, if any, ground disturbance. As a result, there will be no adverse effects to paleontological resources during operation of the LPA and no mitigation is required.

U.S. Army Corps of Engineers Facilities

No paleontological resources have been identified in the vicinity of the USACE facilities. Minimal, if any, ground-disturbing activities are proposed at the USACE facilities during operation of the LPA. Therefore, there will be no adverse effects to paleontological resources within USACE facilities and no mitigation is required.

Design Option: Close 186th Street

The LPA with the design option would require minimal, if any, ground disturbance during operation. Therefore, no adverse effect to paleontological resources would occur as a result of operation of the LPA with the design option and no mitigation is required. Therefore, potential effects to paleontological resources associated with operation of the LPA with the design option are consistent with that of the LPA without the design option.

Maintenance and Storage Facility

Minimal, if any, ground-disturbing activities are proposed at the MSF during operation of the LPA. Therefore, there will be no adverse effect to paleontological resources resulting from operation of the MSF and no mitigation is required.

4.14.4 Minimization/Mitigation Measures

As presented in the analysis in the prior sections, in accordance with Section 106, operation of the LPA will have no adverse effect on known or unanticipated archaeological or built environment historic properties in the APE for the LPA and no adverse effect to paleontological resources in accordance with NEPA. Therefore, no minimization or mitigation measures are required. Implementation of Project Measure CR PM-1 (SOI Standards Design Review) is not necessary to conclude a finding of no adverse effect for the purposes of Section 106 or a finding of less than significant pursuant to CEQA for operation of the LPA. However, as a result of Section 106 consultation that occurred among Metro, FTA, and Caltrans in support of the Project, Project Measure CR PM-1 (SOI Standards Design Review), further described below, will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Additionally, coordination with Caltrans will continue as the project design progresses, in particular as it relates to project elements within the 105 historic district.

CR PM-1: SOI Standards Design Review

As the Project progresses through the design phase, associated designs will be reviewed and approved by a professional who meets the Secretary of the Interior's Professional Qualification Standards in architectural history, history, or architecture (36 CFR 61). The goal of the review will be to confirm that designs remain consistent with the fundamental principles of the Secretary of the Interior's Standards for the Treatment of Historic Properties and guidelines for Rehabilitation (36 CFR 68).

4.14.5 California Environmental Quality Act Determination

The following sections summarize the analysis of impacts for the No Project Alternative and operation (inclusive of maintenance) of the LPA, including the design option and the MSF.

4.14.5.1 Historic Built Resources

Threshold HIS-1: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed; no new infrastructure would be built within the APE; and the existing freight tracks within the rail ROWs would remain. Under the No Project Alternative, the environmental setting would remain in current conditions. Therefore, the No Project Alternative would result in no impact to built environment historical resources, and mitigation would not be required.

Locally Preferred Alternative

Potential impacts to built environment historical resources in the APE for the LPA as a result of operation of the LPA include those directly related to its operation (e.g., permanent visual effects, permanent property acquisitions and easements). Operation of the LPA will not result in a significant impact to built environment historical resources and no mitigation is required. Based on the analysis presented in the Noise and Vibration Impact Analysis Report and summarized in Section 4.7, Noise and Vibration, of this Final EIS/EIR, potential noise and vibration impacts related to operation of the LPA were evaluated for their potential to materially impair historical resources and concluded that no significant noise or vibration impact to historical resources will result from operation of the LPA. As documented in the Noise and Vibration Impact Report, the level of vibration occurring during operation of the LRT is below the architectural or structural damage risk criteria, and the damage risk concern to historic buildings is vibration from construction, which is discussed in Section 4.19.3.4.

Operation of the LPA will require construction of structures and equipment that will introduce new rail-related visual elements, for example stations, rail tracks, catenary poles and wires, aerial structures, TPSSs, and soundwalls, to the existing built-up, urban landscape surrounding historical resources in the APE for the LPA. Although the LPA will introduce new features proximate to historical resources, the new features will be differentiated from historic-period features by their contemporary design. Further, the entire APE for the LPA is situated within an already urban setting along existing rail ROWs. Due to the nature of the existing setting surrounding historical resources, the introduction of additional rail-related features is consistent with and will not significantly impact, materially impair, or reduce the integrity of historical resources.

Three historical resources in the APE for the LPA (6101 Santa Fe Avenue [MRN 10-012] and 6020 Miles Avenue [MRN 10-021] in Huntington Park and Cudahy Substation [MRN 15-032] in Cudahy) will be altered by minor, small-scale permanent acquisitions or easements necessary for the construction or modification of infrastructure, such as curbs and sidewalks. Additionally, a small portion of the Southern California Edison Long Beach to Laguna Bell Transmission Line [MRN 18-016] corridor will be permanently acquired to enable construction of LRT tracks and a TPSS site within the corridor.

Although these changes represent the physical alteration of these built environment resources, modifications are minor and consistent with the existing surroundings, which consist of a highly urbanized setting encompassing paved roadways, traffic signals, sidewalks, and curbs. The elements that will be introduced by the LPA are in keeping with the existing setting of these historical resources. Additionally, none of the built environment features within the

boundaries of these resources will be altered as a result of modifications. Therefore, the acquisitions and proposed modifications will not significantly impact, materially impair, or reduce the integrity of historical resources in the APE for the LPA.

In addition to the acquisitions and small-scale modifications noted above, operation of the LPA will require the physical alteration of the following historical resources, which are discussed individually in the sections that follow: small portions of the 105 historic district (MRN 21-027) in Paramount, the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) in South Gate, the Los Angeles River channel (MRN 17-007) in South Gate, the Rio Hondo channel (MRN 18-017) in South Gate, and the San Gabriel River channel (MRN 29-025) in Cerritos.

105 Historic District (MRN 21-027)

As discussed in detail in Section 4.14.2.1 under the heading "105 Historic District (MRN 21-027)," implementation of the LPA will require the physical alteration of one state-owned historical resource, the 105 historic district (MRN 21-027). This will include the following: demolition and replacement of one character-defining bridge (the Century Boulevard Underpass), construction of a new infill Metro C Line station and associated VCEs in the median of I-105 below the existing Façade Avenue Overcrossing, realignment of 2,500 feet of existing Metro C Line LRT track to accommodate the infill station platform, and minimal removal and replacement of landscaping.

For a detailed description of each of the above-noted components of the LPA, please reference Section 4.14.2.1 under the heading "105 Historic District (MRN 21-027)" which provides an assessment of implementation of the LPA in accordance with Section 106. Similarly, implementation of the LPA will not result in the material impairment of the 105 historic district in accordance with CEQA Section 15064.5(b)(2), nor will it result in significant impacts to the district in accordance with CEQA.

According to the Caltrans guidance, *A Historical Context and Methodology for Evaluating Trails, Roads, and Highways in California* (Caltrans 2016), alterations to any component of a historic road may impact its historic integrity and, therefore, its CRHR eligibility. Although the LPA will demolish a character-defining feature of the district (the Century Boulevard Underpass), removal constitutes less than 1 percent of the character-defining bridges within the district, 117 of which will remain following implementation of the LPA. While implementation of the LPA will result in alterations and the loss of some historic fabric, alterations will not result in a diminished loss of historic fabric such that the historic district will no longer be eligible for inclusion in the CRHR and/or qualify as a historical resource under CEQA. The elements proposed for construction within the district, including the new LRT bridge, replacement freight bridge, and new Metro C Line station, will be designed in a manner compatible in massing, scale, and overall design with the district such that they will not significantly reduce the district's overall integrity. In the case of the new LRT and replacement freight bridges, a concrete relief consistent with that present on character-defining bridges will be integrated into bridge designs. In addition, Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Accordingly, design of the new LRT bridge and new infill Metro C Line station will be reviewed by a professional who meets the SOI PQS in architectural history, history, or architecture as they advance to confirm they remain consistent with the fundamental principles of the SOI Standards and guidelines for Rehabilitation.

The LPA will alter a small portion of the district, including the demolition and replacement of the Century Boulevard Underpass with a new LRT bridge to accommodate the project alignment and a replacement freight bridge, construction of a new infill Metro C Line station and associated VCEs in the median of I-105 below the existing Façade Avenue Overcrossing, realignment of 2,500 feet of existing Metro C Line LRT track to accommodate the infill station platform, and minimal landscaping removal and replacement. According to National Register Bulletin 15, for a historic district to retain integrity as a whole, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished, and the relationships among the district's components must also be substantially unchanged since the period of significance. Following implementation of the LPA, a majority of the district's character-defining features will remain unaltered from their original state and will retain their relationships to one another. Therefore, the district will retain sufficient integrity to convey its historical associations. Proposed alterations within the historic district will enhance and improve its intermodal connectivity, which is one of the primary reasons the historic district is significant. Additionally, Caltrans considered construction of the LPA and accommodated for its new elements as part of its ExpressLanes Project. Thus, proposed alterations required by implementation of the LPA will not materially alter the district in accordance with CEQA Section 15064.5(b)(2), and the district will continue to convey its historical significance and will remain eligible for inclusion in the CRHR.

As a result of the analysis presented above, implementation of the LPA will result in a less than significant impact to historical resources in accordance with CEQA. Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards. Accordingly, designs of the new LRT bridge and new infill Metro C Line station will be reviewed by a professional who meets the SOI PQS in architectural history, history, or architecture to confirm consistency with the fundamental principles of the SOI Standards and guidelines for Rehabilitation.

Table 4.14.2 presents the character-defining features of the district, listed in their order of importance in conveying the district's significance, as identified in the Caltrans condition assessment report. Also included in the table is the percentage of each character-defining feature that will be modified due to operation of the LPA and a CEQA finding related to each individual feature in consideration of proposed project changes. A summary of findings related to each individual proposed component and the whole of the LPA, as analyzed above, is included in Table 4.14.3.

Table 4.14.2. Character-Defining Features of the Century Freeway-Transitway Historic District

Caltrans Ranking	Character-Defining Feature and Description	Total Points*	Percent of Character-Defining Feature Potentially Impacted by Project LPA	Impact Under CEQA
Most Significant	Limited interchanges (Interstates 405, 110, 710, and 605)	15	0%	No proposed change; No impact to this feature.
Most Significant	Profile of route (at-grade, elevated, in trench, or on berm)	14	0%	No proposed change; No impact to this feature.

Caltrans Ranking	Character-Defining Feature and Description	Total Points*	Percent of Character-Defining Feature Potentially Impacted by Project LPA	Impact Under CEQA
Significant	Alignment of route	12	0%	No proposed change; No impact to this feature.
Significant	Metro C Line light rail system and stations in median	12	2.5% (track) 0% (stations)	Shifting 2,500 feet (0.47 mile) of track will be a minimal change; Less than significant to this feature. New infill station will be compatible in scale and massing with existing stations and will be located in the median; no existing stations will be altered; Less than significant to this feature.
Significant	ITS system (CCTV, TMS, RMS, ATMS, CMS1)	11	0%	No proposed change; No impact to this feature.
Significant	Original bridges and pedestrian overcrossings	10	Less than 1%	Demolition and replacement of 1 of 118 contributing bridges will be a minimal change; Less than significant impact to this feature.
Significant	Landscaped nature	10	Minimal	Trees to be replaced at a 1:1 ratio; Less than significant impact to this feature.
Significant	Controlled ramps and their lengths	9	0%	No proposed change; No impact to this feature.

Source: Source: Smith and Harper 2019 and Rincon 2023
* Features with points between 13 and 15 are identified as most significant; features with points between 9 and 12 are identified as significant; features with points between 5 and 8 are identified as least significant.
Notes: ATMS = Advanced Traffic Monitoring System; Caltrans = California Department of Transportation; CCTV = closed-circuit television; CEQA = California Environmental Quality Act; CMS = Changeable Message Signs; ITS = Intelligent Transportation System; LPA = Locally Preferred Alternative; RMS = Ramp Metering System; TMS = Traffic Monitoring Stations

Table 4.14.3. Summary of Findings

Proposed Component	Summary of Analysis	CEQA Finding
Demolition and replacement of the Century Boulevard Underpass	Demolition will only impact 1 of 118 (less than 1 %) of the character-defining bridges/overcrossings. The new LRT and replacement freight bridges will be generally consistent in scale, massing, and materials with other character-defining bridges throughout the district. New LRT and replacement freight bridges will integrate relief consistent with that present on character-defining bridges throughout the district. Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation.	Less than significant impact
Construction of new Metro C Line station and associated VCEs	Station and VCEs will support the interstate's intermodality into the future. They will be generally consistent in their scale, massing, and materials with other character-defining stations and associated circulation elements throughout the district. The new station will be differentiated from existing stations in its design details, yet compatible with existing stations in terms of scale, massing, materials, and spatial relationships. Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation.	Less than significant impact
Realignment of approximately 2,500 feet (0.47 mile) of Metro C Line track	Realignment will result in the alteration of just over 2.5% of the Metro C Line track within the district. Materials removed will be replaced in-kind and the overall alignment of Metro C Line track within the district will remain largely intact following implementation of the LPA.	Less than significant impact
Minimal landscaping removal and replacement	Landscape removal will be limited. Trees removed will be replaced at a 1 to 1 ratio.	Less than significant impact
WSAB Project (LPA)	Presented above	Less than significant impact

Source: Rincon 2023
Notes: CEQA = California Environmental Quality Act; LPA = Locally Preferred Alternative; LRT = light rail transit; SOI PQS = Secretary of the Interior's Standards for the Treatment of Historic Properties Professional Qualification Standards; VCE = vertical circulation element; WSAB = West Santa Ana Branch

Union Pacific Los Angeles River Rail Bridge (MRN 17-006)

Implementation of the LPA will require the alteration of the Union Pacific Los Angeles River Rail Bridge (MRN 17-006), including the extension of its existing nonoriginal concrete debris walls to the north. The existing bridge will remain intact and continue its historic and current use following implementation of the LPA. While the LPA will not physically alter the deck of the bridge, the bridge's existing nonoriginal concrete debris walls will be extended to the north to support the new LRT bridge constructed for the LPA to cross the Los Angeles River

channel. Modifications to the debris walls will be undertaken using materials consistent with the existing debris walls and piers, and the scale and massing of extended portions of the piers will be consistent with those currently extant. While the bridge's integrity of design, materials, and workmanship will be altered by the LPA, modifications will be undertaken in a manner such that the historical resource will not be significantly impacted. Project Measure CR PM-1 (SOI Standards Design Review) will be implemented to support compliance with the SOI Standards and guidelines for Rehabilitation. Therefore, designs associated with the extension of the bridge's concrete debris walls will be reviewed and approved by a professional who meets the SOI PQS in architectural history, history, or architecture to confirm that they remain consistent with the SOI Standards and guidelines for Rehabilitation as design progresses.

In addition to the physical alterations noted above, new permanent visual elements consisting of a bridge with soundwalls will be introduced north of the Union Pacific Los Angeles River Bridge. While the new bridge will partially obstruct views to and from the Union Pacific Los Angeles River Bridge, the introduction of the structure and its associated features is compatible with the bridge's current surrounding industrial setting, which includes numerous transmission lines, rail lines, and industrial and commercial properties. Mid-ground views of the existing bridge, currently available at an angle along Imperial Highway and Firestone Boulevard, will also remain, as will the view from I-710, which at 0.3 mile south of the Union Pacific Los Angeles River Bridge will continue to offer unobstructed views of the bridge. Currently, the only publicly accessible vantage point with direct access to the Union Pacific Los Angeles River Bridge is the Los Angeles River Bikeway, where an unobstructed view will remain on the west bank of the river, south of the bridge. The scale and massing of the new bridge will be larger than that of the existing bridge; however, the new bridge will be compatible with the visual character of the concrete-lined flood control channel that it crosses. Due to the existing setting, the addition of the project-related visual elements from both construction and operation will not diminish the property's integrity of setting, feeling, or association, and will not detract from the character of the area.

The LPA will not alter any of the characteristics of the Union Pacific Los Angeles River Bridge that qualify it for inclusion in the NRHP and CRHR, as well as for local designation, nor will it diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association such that it would be significantly impacted. Therefore, the LPA will result in less than significant impacts to the Union Pacific Los Angeles River Bridge in accordance with CEQA.

Los Angeles River Channel (MRN 17-007)

The portion of the Los Angeles River Channel within the APE for the LPA (subject segment) represents approximately 2,400 feet or 0.45 mile (less than 1 percent) of the river channel's 51-mile length, which was lined with concrete as part of the LACDA Project in 1951. As discussed in detail in Section 4.14.3.1 under the heading "Los Angeles River Channel (MRN 17-007)," operation of the LPA will require the addition of a new LRT bridge over the Los Angeles River channel and the partial removal of the existing debris walls attached to the Union Pacific Los Angeles River Bridge's piers to enable the reconstruction of extended pier walls to also support the new LRT bridge. Potential impacts to the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) are analyzed individually in the preceding section.

The river channel's character-defining features include its orientation, roughly north-south, in addition to its overall size and shape, which enable it to effectively direct water throughout its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portion within the APE for the LPA. Operation of the LPA will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic or current capacity. The new LRT bridge and its associated features, including approximately 6-foot and 8-foot-tall soundwalls, rail track, and catenary poles and wires, are compatible with the subject segment's surrounding urban industrial setting, which includes numerous transmission lines, rail lines, and industrial and commercial properties. Additionally, many bridges dating from various construction periods cross the river channel throughout its 51-mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The actions associated with the LPA are confined to a small portion of the 51-mile-long historical resource and will not alter any of the characteristics of the subject segment that qualify it for inclusion in the NRHP or CRHR. Following completion of the LPA, the Los Angeles River channel will continue to be used as it was historically. Further, the actions proposed are small in scale when considered in the context of the 51-mile-long river channel. Therefore, the LPA will result in less than significant impacts to the Los Angeles River channel in accordance with CEQA.

Rio Hondo Channel (MRN 18-017)

The portion of the Rio Hondo channel in the APE for the LPA (subject segment) represents approximately 2,900 feet or 0.54 mile (less than 4 percent) of the 16-mile-long river channel, completed in 1951 as part of the LACDA Project. As discussed in detail in Section 4.14.3.1 under the heading "Rio Hondo Channel (MRN 18-017)," operation of the LPA will introduce new permanent visual elements, most notably an LRT bridge, into the Rio Hondo channel, approximately 15 feet west of the existing Rio Hondo Bridge (MRN 18-015), which is not a historical resource.

The subject segment's character-defining features include its orientation, roughly northeast-to-southwest, which, in addition to its overall size and shape, enable it to effectively direct water through its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portions within the APE for the LPA. While the LPA will alter the channel by introducing a new bridge, piers, and abutments, modifications will not result in significant impacts because the river's character-defining features will remain intact and the new project elements will be compatible with the design, workmanship, and materials found throughout the 16-mile-long river. Although the LPA will result in construction within the subject segment, it will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic and current capacity. The new LRT bridge and its associated features, such as rail track and catenary poles and wires, are generally compatible with the subject segment's surrounding setting, which includes the presence of built features, such as transmission lines, rail lines, and I-710, in addition to a variety of industrial and commercial properties. Additionally, many bridges dating from various construction periods cross the river channel throughout its 16 mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The LPA will alter only a small segment of the Rio Hondo channel and will not modify any of the characteristics of the property that qualify it for inclusion in the NRHP, nor will it diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association. Following completion of the LPA, the Rio Hondo channel will continue to be used as it was historically. Further, the actions proposed are small in scale when considered in the context of the 16-mile alignment of the river as a whole. Therefore, the LPA will result in less than significant impacts to the Rio Hondo channel in accordance with CEQA.

San Gabriel River Channel (MRN 29-025)

The portion of the San Gabriel River Channel (subject segment) within the APE includes approximately 1,220 linear feet or 0.23 mile of the 58-mile-long channel (less than 1 percent), which was completed in 1966 as part of the LACDA Project. As discussed in detail in Section 4.14.3.1 under the heading "San Gabriel River Channel (29-025)," operation of the LPA will require introduction of a new LRT bridge to cross over the San Gabriel River channel in roughly the same location as the existing abandoned San Gabriel River Bridge (MRN 29-022), which will be demolished and is not a historical resource.

The subject segment's character-defining features include its orientation, roughly north-to-south course which, in addition to its overall size and shape, enable it to effectively direct water through its length. The river's continued function as a flood control measure is a feature that defines it, inclusive of the portions within the APE for the LPA.

Although the LPA will introduce a new bridge, piers, and abutments, the channel's character-defining features will remain intact, and elements introduced by the LPA will be compatible with the design, workmanship, and materials found throughout the 58-mile-long river channel. The new LRT bridge will not change the historic alignment of the channel or result in the removal or substantial alteration of its character-defining features. Although the LPA will result in construction within the subject segment, it will not alter the segment's orientation or its overall size or shape and will not impact its ability to function in its historic and current capacity. Additionally, while demolition and construction activities may require removal of concrete within the channel, all removed materials will be replaced in-kind. The replacement LRT bridge and its associated features, such as approximately 10-foot-tall soundwall, rail track, and catenary poles and wires, are generally compatible with the subject segment's surrounding setting, which is highly urbanized and includes the presence of built features, such as transmission lines and existing rail lines, in addition to a variety of property types. Additionally, many bridges dating from various periods cross the river channel throughout its 58-mile length. The introduction of an additional bridge within the subject segment is in keeping with the river channel's overall character and represents minimal change when considered in the context of its entire length.

The alterations proposed as part of the LPA are confined to a small portion of the San Gabriel River channel. The LPA will not alter any of the characteristics of the portion of the San Gabriel River channel in the APE that qualify it for inclusion in the NRHP, nor will it diminish the integrity of its location, design, setting, materials, workmanship, feeling, and association. Therefore, implementation of the LPA will result in less than significant impacts to the San Gabriel River channel in accordance with CEQA.

Design Option: Close 186th Street

There is one historical resource in the vicinity of the design option, the Frampton-Dantema House (MRN 32-021), which is one of two contributors to the Artesia Historic District and is locally significant as a good example of a 1920s Spanish Colonial Revival-style home. Consistent with the LPA without the design option, the LPA with the design option would not physically modify the Frampton-Dantema House. Therefore, it would result in no change to the building's integrity of location, design, materials, or workmanship.

Under the design option, 186th Street would be permanently closed and 187th Street would remain open with an at-grade crossing. Consistent with the LPA without the design option, the LPA with the design option would introduce new permanent visual elements consisting of soundwalls (10 feet tall in areas northwest of the resource and 8 feet tall in its immediate vicinity) and grade-crossing equipment (at the 187th Street at-grade crossing) in the vicinity of the Frampton-Dantema House. While soundwalls and grade-crossing equipment are proposed under the LPA with and without the design option, these elements would be sited closer to the Frampton-Dantema House under the LPA with the design option.

Despite their relative proximity under the LPA with the design option, due to its current surrounding environment, the addition of these visual elements would not significantly diminish the resource's integrity of setting, which includes rail-related infrastructure, feeling, or association. Soundwalls would partially obscure the viewshed of the Frampton-Dantema House. However, the resource's significance is related to its architecture and views to and from the building are not character-defining. Additionally, its current setting is such that the addition of soundwalls and grade-crossing equipment in its vicinity would not result in material impairment, nor would the closure of 186th Street under the design option. Consistent with the LPA without the design option, the LPA with the design option would not alter any of the characteristics of the Frampton-Dantema House that qualify it for local designation. It would not diminish the integrity of the resource's location, design, setting, materials, workmanship, feeling, and association. Therefore, it would result in no impact to historical resources for the purposes of CEQA and no mitigation is required.

Maintenance and Storage Facility

No built environment historical resources are located in the APE for the LPA in the vicinity of the MSF site. Therefore, operation of the MSF will result in no impact to built environment historical resources, and mitigation is not required.

4.14.5.2 Archaeological Resources

Threshold ARCH-1: Would the Project cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and no new infrastructure would be built within the direct APE. As there would be no ground disturbance under the No Project Alternative, no impacts to known or unanticipated archaeological resources would occur.

Locally Preferred Alternative

No known archaeological resources have been identified in the APE. Additionally, potential physical impacts related to operation of the LPA will be negligible because there will be minimal, if any, ground disturbance associated with the ongoing operation of the LPA. Therefore, there will be no impact to archaeological resources as a result of operation of the LPA, and mitigation is not required.

Design Option: Close 186th Street

No known archaeological resources have been identified in the APE in the vicinity of the design option. Additionally, there would be minimal, if any, ground disturbance as a result of operation of the LPA with the design option. Therefore, no impacts would occur, and mitigation is not required.

Maintenance and Storage Facility

No archaeological resources have been identified in the APE in the vicinity of the MSF. Additionally, minimal, if any, ground-disturbing activities will occur at the MSF during the operation phase of the LPA. Therefore, no significant impacts to archaeological resources will occur during operation of the MSF and mitigation is not required.

Threshold ARCH-2: Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and no new infrastructure would be built within the direct APE. Therefore, no significant impacts to human remains would occur and mitigation would not be required.

Locally Preferred Alternative

Potential physical impacts related to operation of the LPA will be negligible because there will be minimal, if any, ground disturbance associated with the ongoing operation of the LPA. Therefore, no impacts to human remains will occur as a result of operation of the LPA and mitigation is not required.

Design Option: Close 186th Street

There would be minimal, if any, ground-disturbing activities that would occur as a result of operation of the LPA with the design option. Therefore, no impact to human remains would occur, and mitigation would not be required.

Maintenance and Storage Facility

Minimal, if any, ground-disturbing activities will occur at the MSF during operation of the LPA. Therefore, no impact will occur to human remains during operation of the MSF and mitigation is not required.

4.14.5.3 Paleontological Resources

Threshold PALEO-1: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the environmental setting would remain in current conditions. Therefore, no impact to paleontological resources would result, and mitigation would not be required.

Locally Preferred Alternative

Direct impacts to paleontological resources due to ongoing operation under the LPA will be negligible because there will be minimal, if any, ground disturbance during operation of the LPA. Therefore, the LPA will result in no impact to paleontological resources, and mitigation is not required.

Design Option: Close 186th Street

Direct impacts to paleontological resources due to ongoing operation of the LPA with the design option would be negligible because there would be minimal, if any, ground disturbance. Therefore, operation of the LPA with the design option would result in no impacts to paleontological resources, and mitigation would not be required.

Maintenance and Storage Facility

Minimal, if any, ground-disturbing activities are proposed at the MSF during operation of the LPA. Therefore, there will be no impacts to paleontological resources during operation of the MSF and mitigation will not be required.

4.15 Tribal Cultural Resources

This section summarizes the consultation conducted in compliance with Section 106 of the NHPA and the Native American notification and consultation efforts performed for compliance with Assembly Bill (AB) 52. AB 52 consultation efforts resulted in the identification of one Tribal Cultural Resource (TCR), and the Section 106 consultation identified no known or potential Native American Traditional Cultural Properties (TCPs) in the Affected Area for tribal cultural resources. The TCR is not located in the APE associated with the LPA. The potential adverse effects and significant impacts on TCPs and TCRs are analyzed under existing conditions and a No Build Alternative, and from operation of the LPA, including the MSF and one design option.

As described in Section 4.14.1.2 of the Historic, Archaeological, and Paleontological Section of this Final EIS/EIR, the APE was originally delineated to consider the potential effects of the Project, including four Build Alternatives and associated design options and MSF site options, that were evaluated in the Draft EIS/EIR on cultural resources. However, for the purposes of the analysis presented in this section, the Affected Area for tribal cultural resources corresponds to the direct APE associated with the LPA, referred to as Alternative 3 in the Draft EIS/EIR. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report* (Metro 2024b). No substantive changes have been made to the information or analysis for the LPA compared to Alternative 3 in the Draft EIS/EIR. Impact

conclusions related to TCPs and TCRs remain unchanged from the Draft EIS/EIR, including with respect to Alternative 3.

4.15.1 Regulatory Setting and Methodology

4.15.1.1 Regulatory Setting

Federal

Federal protection for Native American resources applies to projects if any construction or other related project impacts occur on federally owned or managed lands, involve the crossing of state lines, or are federally funded. The following federal protections may apply to Native American cultural resources in the Affected Area for tribal cultural resources:

- NEPA, as amended (P.L. 91-190, 42 U.S.C. 4321- 4347, January 1, 1970, as amended by P.L. 94-52, July 3, 1975; P.L. 94-83, August 9, 1975; and P.L. 97-258 Section 4(b), September 13, 1982). NEPA recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101 [42 U.S.C. Section 4321], No. 382).
- NHPA of 1966 (16 U.S.C. 470 et seq.) is the cornerstone of the current federal cultural resources preservation program. NHPA proclaims that the historical and cultural foundations of the nation should be preserved as a living part of our community life in order to give a sense of orientation to the American people. NHPA expanded the policy enunciated by the Historic Sites Act to encompass resources meeting the NRHP criteria for state and local historical significance, in addition to national significance, thus providing the basis for an expanded NRHP maintained by the Secretary of the Interior. The main purpose of NHPA is to protect "historic properties," defined as any prehistoric or historic districts, sites, buildings, structures, or objects included or eligible for inclusion in the NRHP. Properties of traditional religious and cultural importance to Native Americans are also considered under Section 101 (d)(6)(A) of the NHPA and Section 106 36 CFR 800.3-800.10. To be determined eligible for the NRHP, properties must be significant in American history, architecture, archaeology, engineering, or culture, and generally must be at least 50 years old. Historic properties may also include TCPs, which consist of physical properties or places (e.g., district, site, building, structure, or object) that are significant because of their association with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community (Parker and King 1998). All historic properties must also possess integrity of location, design, setting, materials, workmanship, feeling, or association, and meet at least one of the following criteria set forth in the NRHP regulations (36 CFR Part 60):

  A) Are associated with events that have made a significant contribution to the broad patterns of our history
  B) Are associated with the lives of persons significant in our past
  C) Embody the distinctive characteristics of a type, period, or method of installation, 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
  D) Have yielded, or may be likely to yield, information important in prehistory or history

State

AB 52 and CEQA are relevant state regulations that are applicable to Native American cultural resources in the Affected Area for tribal cultural resources. With the enactment of AB 52, the 1970 CEQA (PRC Section 5024) was expanded to include TCRs as a new resource category. AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) define TCRs as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe," and meets either of the following criteria:

a. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe

In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments and with respect to the interests and roles of project proponents, it is the intent of AB 52 to accomplish all of the following:

(1) Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities
(2) Establish a new category of resources in CEQA called "Tribal Cultural Resources" or TCRs that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation
(3) Establish examples of mitigation measures for TCRs that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible
(4) Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the TCRs with which they are traditionally and culturally affiliated (because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and TCRs at issue should be included in environmental assessments for projects that may have a significant impact on those resources)
(5) In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning TCRs, early in the CEQA environmental review process, so that TCRs can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decision-making body of the lead agency
(6) Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to CEQA

(7) Ensure that local and tribal governments, public agencies, and project proponents have information available, early in CEQA environmental review process, for purposes of identifying and addressing potential adverse impacts to TCRs and to reduce the potential for delay and conflicts in the environmental review process
(8) Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, TCRs
(9) Establish that a substantial adverse change to a TCR has a significant effect on the environment

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency.

4.15.1.2 Methodology

A California Historical Resources Information System (CHRIS) search and a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search and consultation, described below, were completed prior to the identification of the LPA. Therefore, the methods described in the following sections are related to the Project, inclusive of the four previously considered Build Alternatives, but remain applicable to the LPA.

South Central Coastal Information Center Record Search

A CHRIS search was conducted for the project corridor, including all four Built Alternatives, on April 17, 2017, at the South Central Coastal Information Center (SCCIC), California State University, Fullerton. Following changes to the project alignment in 2018, a supplemental records search was conducted on August 28, 2018. The searches were performed to identify previously conducted cultural resource studies and previously recorded cultural resources within a 0.5-mile radius of the project alignment. Resulting from a request received through the Native American consultation performed for this Project (summarized below), an additional records search was conducted in December 2019 to expand the records search radius from 0.5 to 1 mile. The searches included a review of the NRHP, the State Historic Property Data Files, California Historical Landmarks, California Points of Historic Interest, California Office of Historic Preservation Archaeological Determinations of Eligibility, and the California Department of Transportation State and Local Bridge Surveys, in addition to available historic U.S. Geological Survey 7.5- and 15-minute quadrangle maps.

Native American Heritage Commission Sacred Lands File Search

Native American consultation was initiated for this Project on June 23, 2017. As part of the process of identifying cultural resources within or near the APE, Rincon contacted the NAHC via email and requested a review of the SLF. Rincon was emailed the results from the NAHC on July 27, 2017. Following changes to the project alignment, Rincon emailed a supplemental SLF request to the NAHC on August 30, 2018, with a response received from the second search on September 11, 2018. Responses received from the NAHC are included in Appendix A of the Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report prepared for the Project.

Both SLF searches resulted in positive results, with the NAHC noting that sites have been located within the Los Angeles quadrangle of the APE that may be impacted by the Project. The NAHC recommended that the Gabrieleño Band of Mission Indians – Kizh Nation be contacted to obtain additional information regarding these sites. The NAHC also provided lists of groups or individuals who may have additional information regarding cultural resources that may exist within the APE; these groups are as follows:

- Anthony Morales, Chairperson, Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation
- Sandonne Goad, Chairperson, Gabrieliño/Tongva Nation
- Robert Dorame, Chairperson, Gabrieliño-Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrieliño-Tongva Tribe
- Linda Candelaria, Chairperson, Gabrieliño-Tongva Tribe
- Matias Belardes, Chairperson, Juaneño Band of Mission Indians Acjachemen Nation – Belardes
- Joyce Perry, Tribal Manager, Juaneño Band of Mission Indians Acjachemen Nation – Belardes

All correspondence associated with the Native American consultation efforts are included in Appendix A of the Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report.

Assembly Bill 52 Consultation

Metro obtained a tribal consultation list for Los Angeles County from the NAHC on July 25, 2017. The list included the following contacts:

- Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson, Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrieliño/Tongva Nation
- Robert Dorame, Chairperson, Gabrieliño-Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrieliño-Tongva Tribe
- Matias Belardes, Chairperson, Juaneño Band of Mission Indians Acjachemen Nation – Belardes

The two contact lists provided by the NAHC as part of the SLF searches on July 27, 2017, and September 11, 2018, included the following additional individuals not on the AB 52 list:

- Linda Candelaria, Gabrieliño-Tongva Tribe
- Joyce Perry, Juaneño Band of Mission Indians

Pursuant to the requirements of AB 52, on October 16, 2018, Metro, acting as the lead CEQA agency, sent project notification letters to all eight of the above-listed Native American contacts (inclusive of those two not on the Los Angeles County consultation list but included on the list provided by the NAHC as part of the SLF search). The letters provided a description of the Project, the project location, and the lead agency contact information.

Metro received no requests for AB 52 consultation from seven of the eight Native American groups that were contacted via mail. In an email dated November 14, 2018, the Gabrieleño Band

of Mission Indians – Kizh Nation (Kizh Nation) stated that if any ground disturbance was to occur for the Project, their tribal government would like to be consulted. The Kizh Nation also sent a letter to Metro personnel dated November 30, 2018, formally requesting AB 52 consultation for the Project. A summary of the consultation that occurred between Metro and the Kizh Nation is included below and is documented in Appendix B, Section 2 of the Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report. One archaeological site (P-19-1575/CA-LAN-1575H) within the original APE for the four Build Alternatives was assumed to be a TCR; however, this site is not applicable to the LPA. No specific TCRs were identified during the consultation effort described below.

Metro initiated AB 52 consultation with the Kizh Nation via teleconference on November 16, 2018. During the meeting, Kizh Nation representatives discussed TCRs located within the vicinity of the project alignment. Following the teleconference, the Kizh Nation sent a follow-up email to Metro that included a historic map showing the general locations of some of the TCRs overlaid against a Google Earth map.

Metro and the Kizh Nation participated in a second teleconference meeting to discuss more specific information about TCRs along the alignment on January 24, 2019. During the meeting, Kizh Nation representatives (Andrew Salas and Matthew Teutimez) stated the area is culturally sensitive and noted that some of the project corridor follows or intersects major Native American trade routes. Tribal representatives referred to the Kirkman-Harriman Map (Kirkman 1937), which depicts the approximate location of these trade routes. Mr. Salas noted that human remains may be located along these trails. Because of the ancestral trade routes found in this area, the tribe considers the project corridor to be part of a cultural landscape. Given the length of the project corridor, Metro requested that the Kizh Nation provide more specific information on those portions of the alignment that they consider to be particularly sensitive for TCRs. Metro also requested a copy of any mitigation language the tribe would like to provide to reduce project impacts.

Metro sent a follow-up email to the Kizh Nation on March 11, 2019, requesting that the tribe provide additional maps or mitigation language to be included in the environmental document. In this correspondence, Metro requested a response from the tribe by March 13, 2019. Metro also made follow-up calls to the Kizh Nation and left voicemail messages. No response was received from these outreach efforts.

On April 15, 2019, Metro sent a letter to the tribe again requesting additional maps and mitigation language. The letter stated that this information should be provided to Metro by May 16, 2019, to continue the AB 52 consultation process. The Kizh Nation emailed Metro with proposed mitigation language on April 22, 2019.

On July 19, 2019, Metro sent a letter to the tribe that summarized the project mitigation measures that were developed, taking into consideration the various aspects of the Kizh Nation's proposed mitigation measures that relate to TCRs. On August 8, 2019, the Kizh Nation replied via email that they had reviewed the proposed mitigation measures outlined in the letter sent July 19, 2019, and that the Kizh Nation concurred with the proposed measures and that the consultation process for the Project was formally concluded.

All of the information summarized above in relation to AB 52 consultation is included in Appendix B of the Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report.

Section 106 Consultation

On December 21, 2018, the FTA sent Section 106 consultation letters to the following Native American contacts:

- Andrew Salas, Chairperson, Kizh Nation
- Anthony Morales, Chairperson, Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrieliño/Tongva Nation
- Robert Dorame, Chairperson, Gabrieliño-Tongva Indians of California Tribal Council
- Charles Alvarez, Councilmember, Gabrieliño-Tongva
- Linda Candelaria, Chairperson, Gabrieleño/Tongva Tribe
- Matias Belardes, Chairperson, Juaneño Band of Mission Indians Acjachemen Nation – Belardes
- Joyce Perry, Juaneño Band of Mission Indians

The letter invited the Native American groups to participate in the Section 106 consultation process and included information on the identification of prehistoric sites, and sacred and/or TCPs in the APE. The FTA requested that the tribes review the information contained in the letter and provide any additional information or comments they may have within 30 days of receiving the letter. Follow-up phone calls were conducted on January 29, 2019, for all contacts with phone numbers on file at the NAHC.

Responses were received from the Kizh Nation, Adrian Morales of the Gabrieleño/Tongva San Gabriel Band of Mission Indians, and Robert Dorame, Chairperson for the Gabrieleño Tongva Indians of California Tribal Council.

- On January 3, 2019, the Kizh Nation sent an email to the FTA requesting Section 106 consultation for the Project. On behalf of FTA, on March 11 and 12, 2020, telephone calls were placed and an email was sent to follow up on this request. Following telephone and email correspondence, on March 13, 2020, Andrew Salas, Chairperson for the Kizh Nation, agreed in an email that the mitigation developed for the purposes of AB 52 would be acceptable for the purposes of Section 106. Consultation between the Kizh Nation and FTA was thus concluded.
- On February 11, 2019, Adrian Morales of the Gabrieleño/Tongva San Gabriel Band of Mission Indians emailed a response also requesting Section 106 consultation. Mr. Morales requested that the SCCIC record searches and all other informational data source be inclusive of a 1.0-mile radius search. In response to this request, the SCCIC record search was updated to 1.0-mile accordingly.
- Robert Dorame, Chairperson for the Gabrieleño Tongva Indians of California Tribal Council, discussed the Project with FTA staff on January 29, 2019. At that time, he stated he would respond to the request by email. Despite email follow-up by FTA, further response was not received, and consultation between the Gabrieleño Tongva Indians of California and FTA was concluded.

The Section 106 consultation summarized above resulted in the identification of zero TCPs. Details of the Section 106 consultation summarized above are included in Appendix C of the Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report.

4.15.2 Affected Environment/Existing Conditions

The following is a discussion of the affected environment based on general LPA-wide conditions.

4.15.2.1 Ethnographic Setting

The Affected Area for tribal cultural resources is in the traditional territory of the Native American group known as the Tongva, Gabrieliño, or Kizh. The Tongva territory included a large area in and around Los Angeles County, as well as the southern Channel Islands and coastlines from Aliso Creek in the south to Topanga Creek in the north. The Tongva territory was bordered by several different Native American groups, including the Serrano to the north and northeast, the Tataviam to the north, the Chumash to the northwest, the Cahuilla to the east, and the Luiseño and Juaneño to the south and southeast.

The Tongva language belongs to the Takic branch of the Uto-Aztecan language family. Tongva society was organized along patrilineal non-localized clans, a common Takic pattern. Each clan had a ceremonial leader and contained several lineages. The Tongva established permanent villages and smaller satellite camps throughout their territory. Tongva subsistence was oriented around acorns supplemented by the roots, leaves, seeds, and fruits of a wide variety of plants and animals. The Tongva lived in circular domed structures made of thatched tule covering a frame of wooden poles, usually of willow.

4.15.2.2 SCCIC Record Search Results

The SCCIC record search identified one prehistoric site or site with prehistoric components within one mile of the APE associated with the LPA; however, it is not located within the direct APE.

4.15.2.3 NAHC SLF Search Results

Searches of the SLF by the NAHC indicate that Native American sites are located in the Study Area. The NAHC requested that the Kizh Nation be contacted to obtain additional information regarding these sites. Documents related to the SLF searches and NAHC responses are included in Appendix A of the Final Traditional Cultural Properties and Tribal Cultural Resources Impact Analysis Report.

4.15.2.4 AB 52 Consultation Results

As part of the AB 52 consultation process, the Kizh Nation provided information on Native American cultural resources located within the Affected Area for TCRs. No specific TCRs were identified during these consultation efforts.

As previously discussed in Section 4.15.1.2, tribal representatives indicated that historic maps depict several trade routes that intersect or appear to be located in the vicinity of the Affected Area for tribal cultural resources. No archaeological evidence of these trade routes has been documented within the project corridor and the precise location of these routes is unknown. Tribal representatives note that there is a potential to encounter human remains in these areas adjacent to the reported trade routes. They also indicated the presence of waterways and bodies of water that were high attractants to prehistoric Native American groups residing in the area. Because of their use by Native Americans, these areas have a higher-than-average potential for encountering unanticipated TCRs (i.e., Native American artifacts and human remains) during ground-disturbing activities.

4.15.2.5 Section 106 Consultation Results

The Section 106 consultation performed for this study did not identify any known or potential Native American TCPs. The results of the Section 106 consultation, as they pertain to identified and potential locations of archaeological sites, are discussed in the *West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report–Rev 2* (Metro 2023b) and the *West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report* (Metro 2024u).

4.15.3 Environmental Consequences/Environmental Impacts

4.15.3.1 No Build Alternative

Under the No Build Alternative, no new infrastructure would be built within the Affected Area for tribal cultural resources with the exception of the following: projects currently under construction, projects funded for construction, environmentally cleared, planned to be in operation by 2042, and identified in the constrained Metro 2009 LRTP (Metro 2009a) and the SCAG 2016-2040 RTP/SCS (SCAG 2016a), as well as additional projects funded by Measure M.

Under the No Build Alternative, the environmental setting would remain in its current condition and no ground disturbance would occur. No physical alteration of known or unanticipated TCPs would take place under the No Built Alternative. The No Build Alterative would result no effects to known or unanticipated TCPs.

4.15.3.2 Locally Preferred Alternative

No TCPs have been identified in the APE associated with the LPA. Therefore, operation of the LPA will result in no effects to known TCPs. Additionally, operation and maintenance of the LPA will result in no direct effects to unknown TCPs because there will be minimal, if any, ground disturbance. Indirect effects (e.g., noise, vibration, or visual impacts) associated with the ongoing maintenance and operation of the LPA are not expected to affect subsurface archaeological resources, including unanticipated TCPs. Under NEPA, the operation of the LPA will result in no effects to known or unanticipated TCPs.

4.15.3.3 Design Option: Close 186th Street

No TCPs have been identified in the APE in the vicinity of the design option. Therefore, similar to operation of the LPA without the design option, operation of the LPA with the design option would result in no effects to known TCPs. Also similar to the LPA without the design option, direct physical effects to unknown TCPs would be negligible because there would be minimal, if any, ground disturbance associated with the ongoing maintenance and operation of the LPA with the design option. As a result, there would be no direct or indirect effects to known or unanticipated TCPs resulting from operation of the design option.

4.15.3.4 Maintenance and Storage Facility

No TCPs have been identified in the APE in the vicinity of the MSF site. Therefore, the operation of the MSF will result in no effects to known TCPs. No ground-disturbing activities are proposed at the MSF during the operation phase of the LPA. Additionally, the *West Santa Ana Branch Transit Corridor Project Noise and Vibration Impact Report* (Metro 2024j) indicated that operation of the MSF will not result in adverse noise or vibration effects according to FTA standards. Therefore, noise and vibration effects associated with the ongoing maintenance and operation of the MSF are not expected to affect unknown subsurface TCPs. As a result, there will be no direct or indirect effects to known or unanticipated TCPs.

4.15.3.5 United States Army Corps of Engineers Facilities

No TCPs have been identified in the APE in the vicinity of the USACE facilities. Therefore, there will be no effects to known TCPs. Operation and maintenance of the LPA at the USACE facilities would have minimal, if any, ground disturbance. As a result, there will be no direct or indirect effects to known or unanticipated TCPs. An evaluation of effects associated with construction of the LPA on TCPs is included in Section 4.19.3.15 of the Construction Impacts Section of this Final EIS/EIR.

4.15.4 Project Measures and Mitigation Measures

Operation of the LPA, inclusive of the design option and the MSF, will not result in direct or indirect effects to known or unanticipated TCPs and, therefore, project or mitigation measures are not required.

4.15.5 California Environmental Quality Act Determination

4.15.5.1 Threshold TCR-1: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subsection (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Project Alternative

Under the No Project Alternative, no new infrastructure would be built within the Affected Area for tribal cultural resources. The environmental setting would remain in its current condition and no ground disturbance would occur. No physical alteration of known or unanticipated TCRs would take place. The No Project Alterative would result in no impacts to known or unanticipated TCRs, and mitigation would not be required.

Locally Preferred Alternative

No TCRs have been identified in the APE associated with the LPA. Therefore, operation of the LPA will result in no impacts to known TCRs. The operation of the LPA will additionally result in no direct impacts to unknown TCRs because there will be minimal, if any, ground disturbance associated with operation or maintenance of the LPA. Indirect impacts (e.g., noise, vibration, or visual impacts) associated with the ongoing maintenance and operation of the LPA are not expected to impact subsurface archaeological resources, including unanticipated TCRs. Operation of the LPA will not result in impacts to known or unanticipated TCRs, and no mitigation is required.

Design Option: Close 186th Street

No TCRs have been identified in the APE in the vicinity of the design option. Therefore, similar to operation of the LPA without the design option, operation of the LPA with the design option would not result in impacts to known TCRs. Additionally, similar to the LPA without the design option, no ground-disturbing activities are proposed at 186th Street during operation or maintenance of the LPA with the design option. As a result, there would be no direct or indirect impacts to known or unanticipated TCRs, and mitigation is not required.

Maintenance and Storage Facility

No TCRs have been identified in the APE in the vicinity of the MSF. Therefore, operation of the MSF will not result in impacts to known TCRs. No ground-disturbing activities are proposed at the MSF during operation. As a result, there will be no direct or indirect impacts to known or unanticipated TCRs, and mitigation is not required.

4.16 Parklands and Community Facilities

This section summarizes the potential effects and impacts on parklands and community facilities for the No Build Alternative and the LPA. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Parklands and Community Facilities Impact Analysis Report* (Metro 2024k). A detailed analysis of Section 4(f) of the U.S. Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act are discussed in the *West Santa Ana Branch Transit Corridor Project Section 4(f) and Section 6(f) Impact Analysis Report* (Metro 2024l) and in Chapter 5 (Section 4(f) and Section 6(f) Evaluation) of this Final EIS/EIR.

This section has been revised to reflect identification of the LPA, inclusive of refinements to the LPA. Specifically, the Draft EIS/EIR analyzed impacts associated with demolishing the existing pedestrian bridge between the Paramount High School campuses and replacing this bridge with a pedestrian undercrossing. Refinements to the LPA were made in coordination with UPRR, the City of Paramount, and the Paramount Unified School district to demolish and replace the existing pedestrian bridge, rather than providing connectivity via a pedestrian undercrossing. The replacement of the pedestrian bridge will not affect the function of Paramount High School. This section has also been updated to include discussion of the Artesia Historic District Recreation Trails, which opened on April 6, 2021, as an existing facility, based on comments received on the Draft EIS/EIR. This section reflects the Final EIS/EIR impact analysis updates for displacements/ acquisitions, parking, and access. Impact conclusions presented in the Draft EIS/EIR regarding parklands and community facilities are unchanged from those in the Final EIS/EIR, including with respect to Alternative 3.

4.16.1 Regulatory Setting and Methodology

4.16.1.1 Regulatory Setting

Federal and state plans and policies applicable to parklands and community facilities include the U.S. Department of Transportation Act of 1966, the Land and Water Conservation Fund Act of 1965, the Uniform Fire Code, the California Public Park Preservation Act of 1971, the California Code of Regulations Title 24, and the California Education Code. Local plans and policies applicable to parklands and community facilities include the general plans and

community plans for the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the unincorporated Florence-Firestone community of LA County.

The LPA alignment will extend through several jurisdictions with bicycle networks. The following adopted bicycle master plans have been identified in the affected jurisdictions: *County of Los Angeles Bicycle Master Plan 2012* (LA County 2012b), *City of Los Angeles 2010 Bicycle Plan* (City of Los Angeles 2011), *City of Huntington Park Bicycle Transportation Master Plan* (City of Huntington Park 2014), *City of South Gate Bicycle Transportation Plan* (City of South Gate 2012), *City of Bell Bicycle Master Plan* (City of Bell 2016), *City of Downey Bicycle Master Plan* (City of Downey 2015), and the *Bellflower-Paramount Active Transportation Plan* (City of Bellflower and City of Paramount 2019).

4.16.1.2 Methodology

For the purposes of evaluating parklands and community facilities impacts, the Affected Area for parklands is defined as 0.25 mile on both sides of the alignment and around the stations, parking facilities, MSF site, and TPSS sites to identify the context of the surrounding area. The impact analysis for parklands and community facilities is focused on the parklands and community facilities located adjacent to (approximately 50 feet) or within the footprint of the LPA as direct impacts are anticipated to affect these facilities, although indirect impacts could occur to facilities in the greater Affected Area.

For the NEPA analysis, potential adverse effects would occur if the LPA and MSF would result in direct or indirect impacts to parklands and community facilities. Direct impacts are defined as impacts involving physical acquisition, displacement, visual alteration, or relocation of parkland or a community facility. Indirect impacts are defined as changes to visual quality and pedestrian or vehicular access. Direct impacts to parklands and community facilities would only occur if such properties are located directly adjacent to or within the LPA facilities as these adjacent areas have been identified to be the area of potential impact. Indirect impacts would most likely occur to facilities located in proximity to the LPA.

To satisfy CEQA requirements, impacts to parkland and recreation facilities are analyzed in accordance with Appendix G of the *CEQA Guidelines,* identified in Section 4.16.5.

4.16.2 Affected Environment/Existing Conditions

4.16.2.1 Parklands and Recreational Facilities

Within the Affected Area for parklands, 17 parkland and recreation facilities have been identified, totaling approximately 153 acres (Table 4.16.1). Each identified parkland is owned and managed by local government jurisdictions. National parks, state parks, or wildlife refuges are not located in the Affected Area for parklands. In addition, five public schools that provide recreational resources and that are open to the public during non-school hours are also identified.

Table 4.16.1. Parklands and Recreational Facilities Identified within 0.25-Mile of the LPA

Facility	Total Size (acres)	Amenities	Distance to LPA[1] (feet)
Park and Recreational Facilities			
Slauson Multipurpose Center 5306 S. Compton Ave, Los Angeles	3.6	Auditorium, baseball diamond (lighted), basketball courts (lighted/indoor), children play area, community room, computer lab, kitchen, multipurpose room, outdoor fitness equipment, stage, football field (lighted), on-site parking	730 ft
Pueblo del Rio Recreation Center 5350 Alba St, Los Angeles	0.5	Children's play area	1,040 ft
Augustus F. Hawkins Natural Park 5790 Compton Ave, Los Angeles	8.5	Picnic tables, amphitheater, gardening boxes, walking paths, restroom(s), wetlands, nature museum hall, rental space, on-site parking	680 ft; 780 ft from Slauson/A Line Station
Raul R. Perez Memorial Park 6208 Alameda St, Huntington Park	4.5	Community building, indoor fitness room, large room and kitchen, grass sports field (lighted), outdoor basketball courts (lighted), children's playground, walking trail, outdoor gym, on-site parking	200 ft
Salt Lake Park 3401 E. Florence Ave, Huntington Park	23.0	Recreation center, gymnasium, grass soccer field, synthetic grass soccer field, baseball diamonds, batting cages, skate park, tennis courts, weight room, picnic areas, barbecues, children's playgrounds, concession stand, meetings rooms, on-site parking	70 ft; 480 ft from Florence/Salt Lake Station
Lugo Park 7801 Otis Ave, Cudahy	4.4	Youth center, fitness center, gazebo with barbecues, tot-lot synthetic grass soccer field, on-site parking	200 ft
Circle Park 10129 Garfield Ave, South Gate	4.0	Children's playground, open grass area, baseball diamond, on-site parking	1,050 ft
Hollydale Community Center 12221 Industrial Ave, South Gate	2.2	Basketball court, community center, playground	20 ft

Facility	Total Size (acres)	Amenities	Distance to LPA[1] (feet)
Paramount Park 14400 Paramount Blvd, Paramount	21.9	Playgrounds, handball courts (lighted), baseball diamonds (lighted), basketball court (lighted), picnic shelters/barbecues, gymnasium, walking path, restrooms, pool, on-site parking	10 ft; 700 ft from Paramount/ Rosecrans Station
Pirate Park 16559 Bellflower Blvd, Bellflower	<0.1	Pirate-themed children's playground, on-site parking	510 ft; 790 ft from Bellflower Station
Simms Park 16614 Clark Ave, Bellflower	12.6	Auditorium, multipurpose rooms, picnic shelter, lighted softball fields, basketball court, playground, barbeque braziers, fitness center and trail, on-site parking	970 ft
Ruth R. Caruthers Park 10500 E. Flora Visa St, Bellflower	20.0	Baseball/softball fields (lighted), batting cages, skate park, game room, picnic areas, wading pool, playgrounds, lighted tennis courts, lighted basketball court, lighted volleyball courts, lighted handball courts, tetherball courts, fitness center, 2-mile fitness course, equestrian path, barbecues, 2.5-mile bike trail, on-site parking	50 ft
Bellflower Skate Park 10500 E. Flora Visa St, Bellflower	0.2	Skate park, on-site parking	760 ft
Flora Vista Dog Park 9203 Flora Vista St, Bellflower	0.6	Dog park, on-site parking	Adjacent to MSF site
Iron Wood Nine Golf Course 16449 Piuma Ave, Cerritos	26.6	Golf course and driving range, on-site parking	670 ft
Rosewood Park 17715 Eric Ave, Cerritos	6.0	Basketball court, sand area with playground equipment, picnic shelters, barbecues, multipurpose field, on-site parking	60 ft
Artesia Park 1870 Clarkdale Ave, Artesia	14.5	Banquet space, baseball/softball diamond, basketball court, meeting rooms, picnic areas, picnic shelters, children's playground, restrooms, soccer field, tennis court, on-site parking	270 ft 1,060 ft from Pioneer Station

Facility	Total Size (acres)	Amenities	Distance to LPA[1] (feet)
School Facilities [2]			
Lillian Street Elementary School 5909 Lillian St, Los Angeles	2.8	Playground, asphalt play areas include track, tennis court, four-square, basketball and other ball courts, and miscellaneous play space	90 ft
San Antonio Elementary School 6222 State St, Huntington Park	2.2	Asphalt play areas include track, tennis court, basketball and other ball courts, and miscellaneous play space	120 ft
Legacy High School Complex 5225 Tweedy Blvd, South Gate	7.3	Baseball field, open field, tennis courts	120 ft
Paramount High School 14429 Downey Ave, Paramount	15.8	Baseball field, open field space, tennis courts, basketball courts, football field	60 ft
Paramount Park Elementary/ Middle School 14608 Paramount Blvd, Paramount	7.5	Playfield	100 ft

Source: Metro 2024k
Notes: ft = feet; LPA = Locally Preferred Alternative
[1] Distance is measured from the nearest point of the LPA alignment, station, or MSF to the recreational facility.
[2] Recreational facilities at the school facilities listed in the table are open for public use during non-school hours.

4.16.2.2 Bike Facilities

Using Caltrans' *Highway Design Manual* (2016c), bicycle facilities are classified as Class I, II, III, and IV. Class I bikeways provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians. Class II bike lanes are typically striped lanes for one-way bike travel on a street or highway. Class III bike paths are signed shared roadways (sharrows) that provide shared use with pedestrians or motor vehicle traffic. Class IV bikeways are protected bike lanes that are physically separated from the vehicle travel lane by more than the white stripe. Separation may be accomplished with grade separation, flexible bollards, or permanent barriers. Table 4.16.2 summarizes the bike facilities identified within 0.25 mile of the LPA.

Table 4.16.2. Bike Facilities Identified within 0.25-Mile of the LPA

Facility Name/Location	Total Length	On-site Parking	Location Relative to the LPA
City of LA Citywide Bikeway System Citywide Los Angeles	593 miles	No	Citywide with Class I, II, III, and IV bike lanes
Los Angeles River Bike Path [1] Along Los Angeles River	16.5 miles	No	Class I. Crosses under the alignment at the Los Angeles River
Rio Hondo Bike Path City of South Gate	16.8 miles	No	Class I. Crosses under the alignment at the Rio Hondo
Paramount Bike Trail City of Paramount	2.3 miles	No	Class I. Parallel and adjacent[3] to the alignment with segments within the LADWP utilities corridor and Metro-owned right-of-way from the Los Angeles River to Lakewood Blvd
Bellflower Bike Trail City of Bellflower	2.7 miles	No	Class I. Parallel and adjacent[3] to the alignment within the Metro-owned right-of-way between Somerset Boulevard to just north of the SR-91 freeway
San Gabriel River Mid-Trail [2] Along San Gabriel River	35.4 miles	No	Class I. Crosses under the alignment at the San Gabriel River
Artesia Historic District Recreational Trails City of Artesia	0.5 mile	No	Class I. Parallel and adjacent[3] to the alignment between 183rd Street/Gridley Road and 187th Street/Corby Avenue

Source: Metro 2024k
Notes: LADWP = Los Angeles Department of Water and Power; LPA = Locally Preferred Alternative
[1] Los Angeles River Bike Path trail that is developed from the City of Long Beach to the City of Vernon. Los Angeles County, Los Angeles River Master Plan, 2021.
[2] Los Angeles County Department of Parks and Recreation. https://trails.lacounty.gov/Trail/265/san-gabriel-river-trail
[3] For purposes of evaluating parklands, community facilities, and bike facilities, "adjacent" is measured as approximately 50 feet.

4.16.2.3 Community Facilities

Community facilities identified within the Affected Area for parklands include schools, places of worship, emergency services, government offices, health services, museums, library facilities, and other social services (i.e., cemetery, adult care, social assistance). Table 4.16.3 summarizes the community facilities identified within 0.25 mile of the LPA.

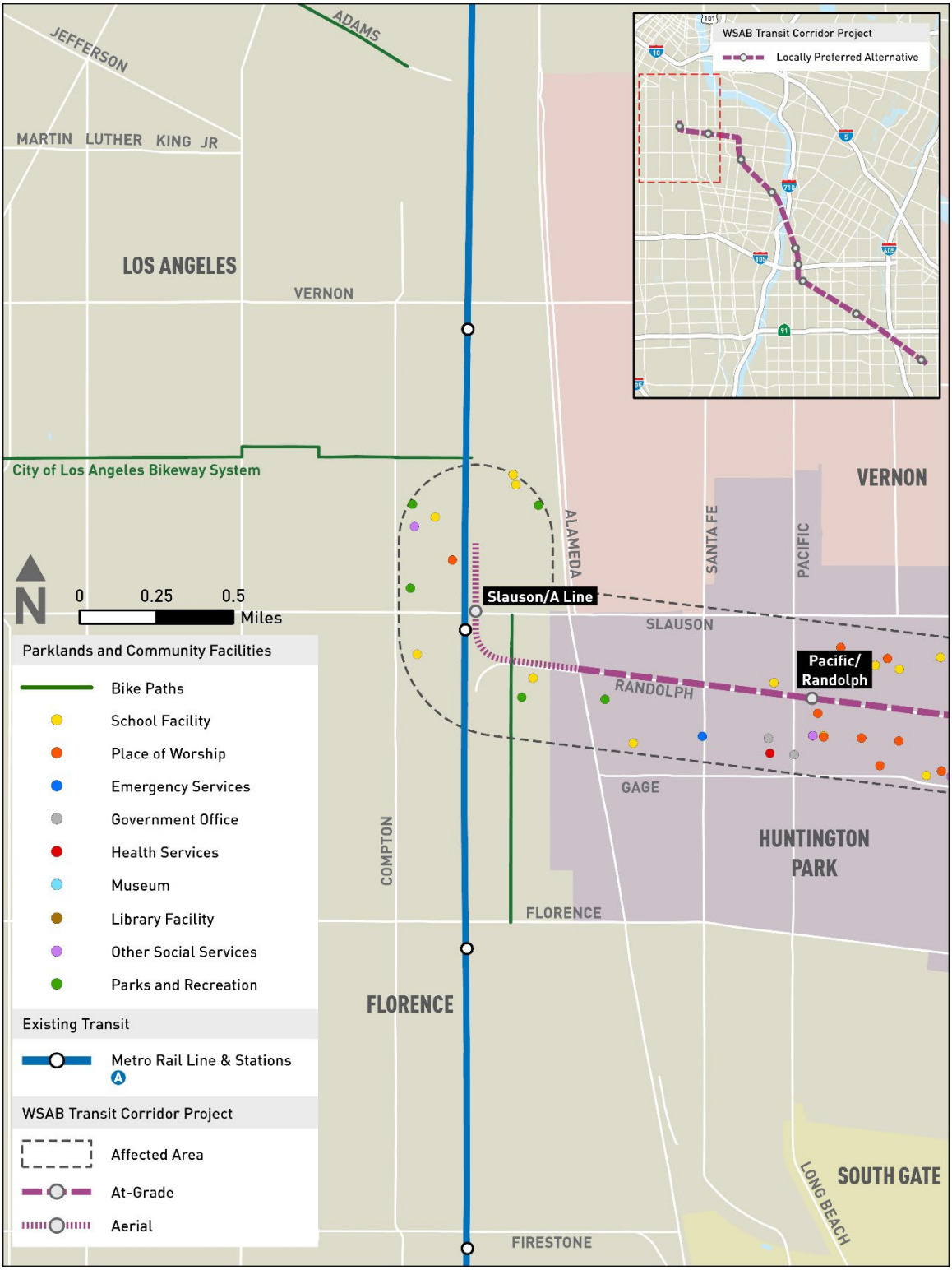
Table 4.16.3. Community Facilities Identified within 0.25-Mile of the LPA

Community Facility[1]	No. of Facilities
School Facility	33
Places of Worship	37
Emergency Services Facility	6
Government Offices	11
Health Services	5
Museum	2
Library Facility	3
Other Social Services (i.e., cemetery, adult care, social assistance)	10
Total	**107**

Source: Metro 2024k
Notes:
LPA = Locally Preferred Alternative
[1] Distance to the resource facility is measured from the nearest point of the project alignment, station, or MSF.

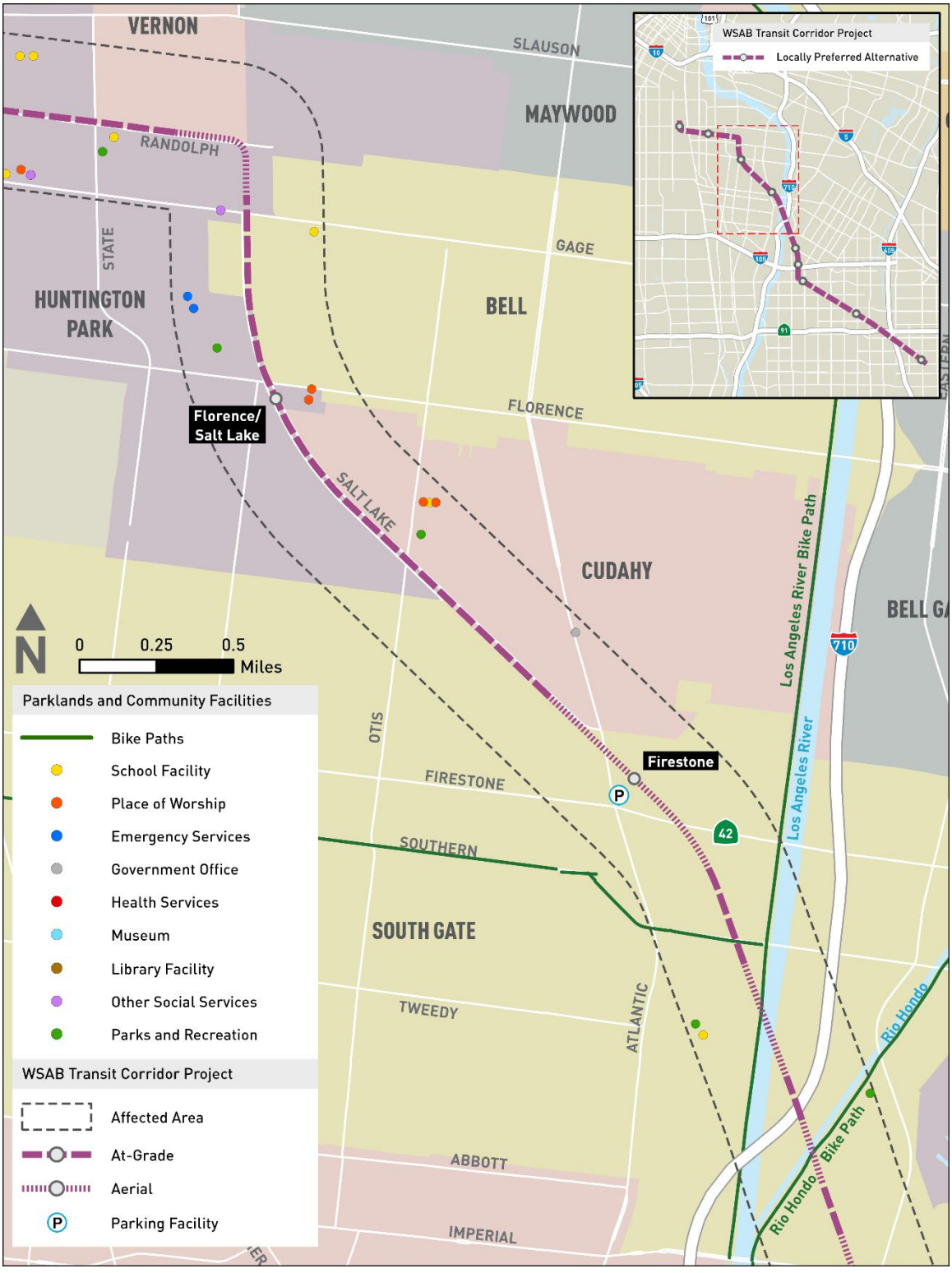
Within the Affected Area for parklands, 107 community facilities were identified. Three community facilities are within 0.25 mile of the MSF site. Figure 4.16-1 through Figure 4.16-5 identify the approximate locations of the parklands, community facilities, and bike facilities located within 0.25 mile of the LPA.

Figure 4.16-1. Parkland, Bike Facilities, and Community Facilities within 0.25-Mile of the LPA (Slauson/A Line Station to Randolph Street)



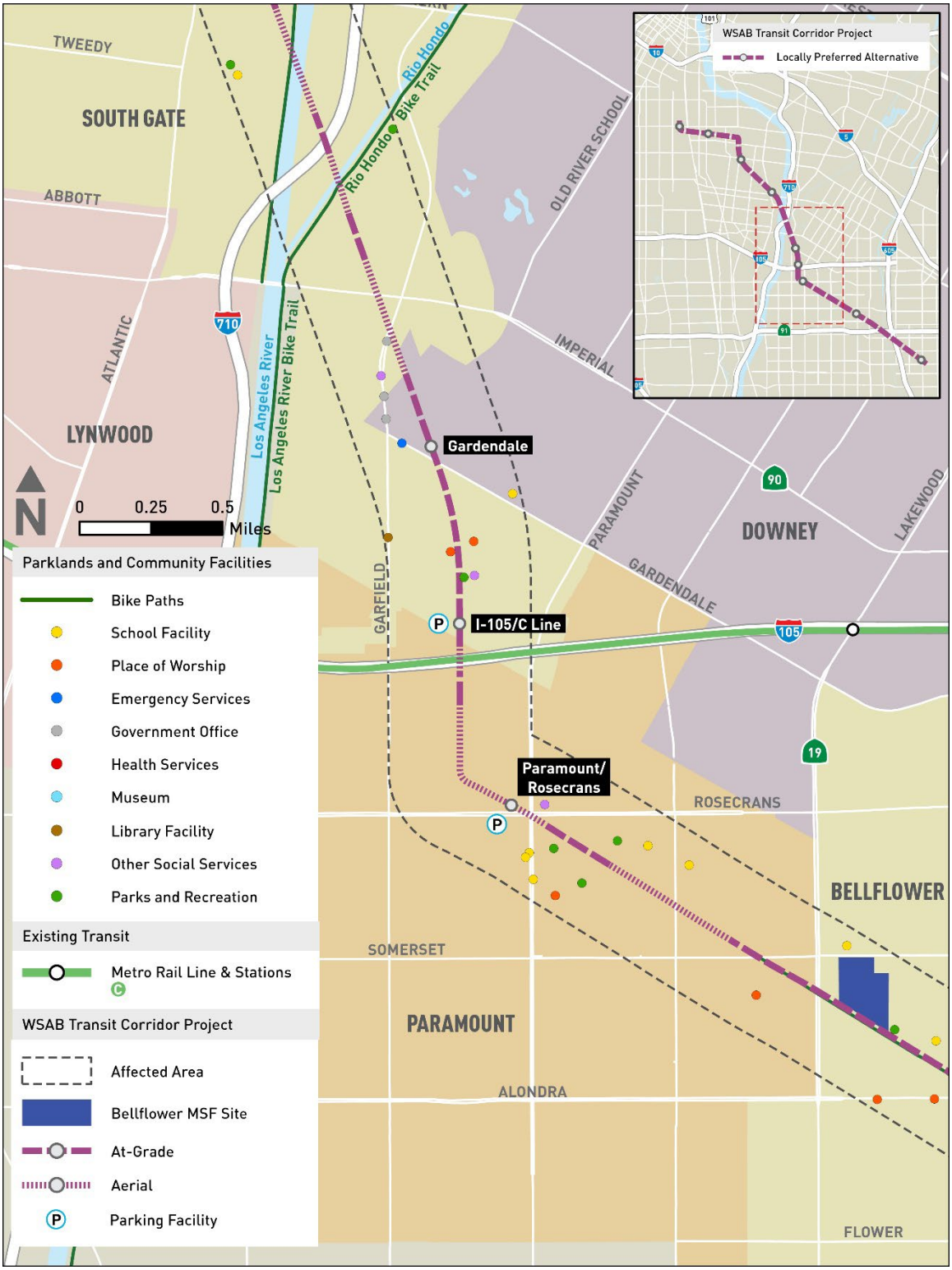
Source: Metro 2024k

Figure 4.16-2. Parkland, Bike Facilities, and Community Facilities within 0.25-miles of the LPA (Randolph Street, Huntington Park to Imperial Highway, South Gate)



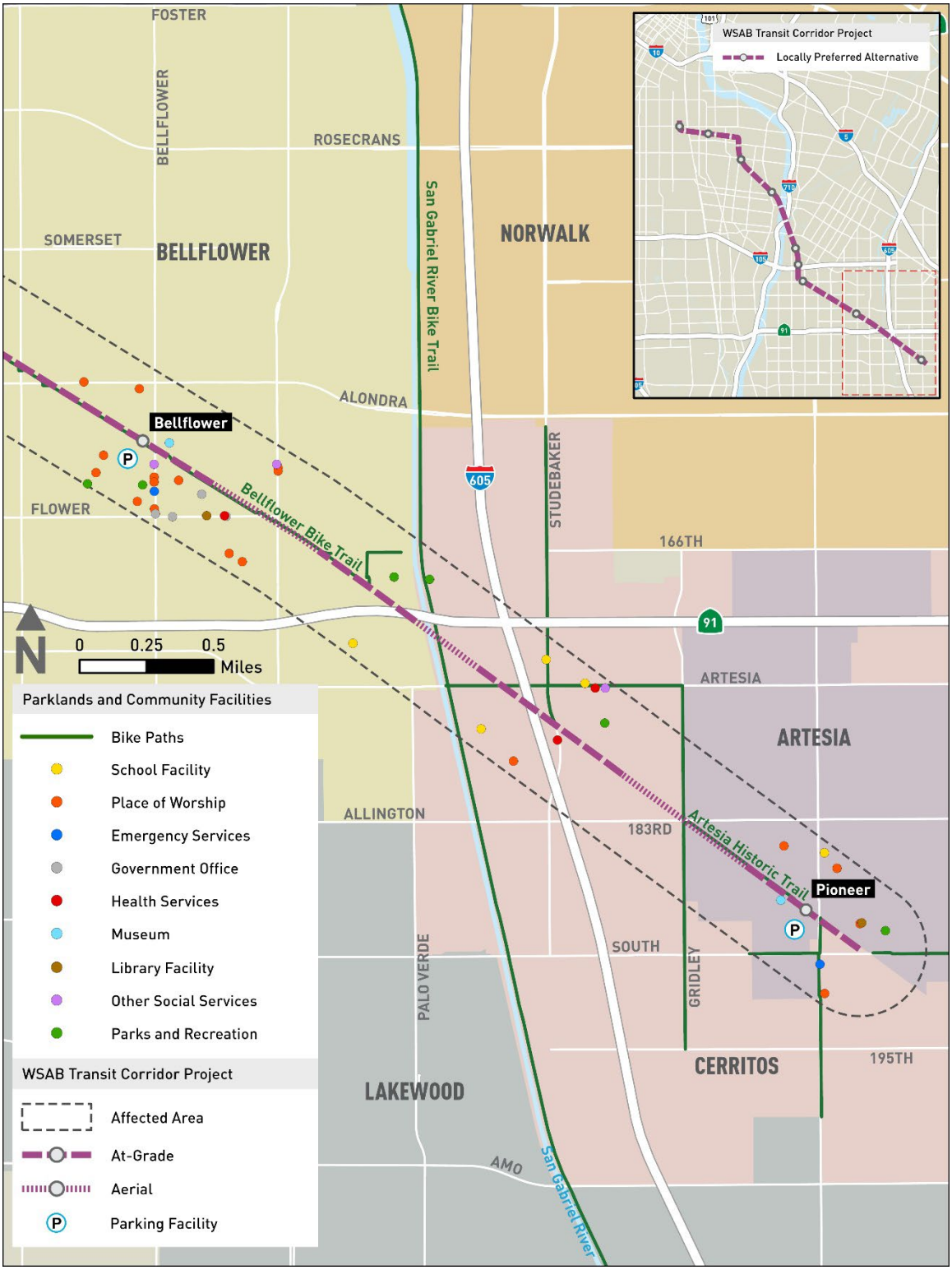
Source: Metro 2024k

Figure 4.16-3. Parkland, Bike Facilities, and Community Facilities within 0.25-Mile of the LPA (Imperial Highway, South Gate to Alondra Boulevard, Bellflower)



Source: Metro 2024k

Figure 4.16-4. Parkland, Bike Facilities, and Community Facilities within 0.25-Mile of the LPA (Alondra Boulevard, Bellflower to South Street, Artesia)



Source: Metro 2024k

Figure 4.16-5. Parkland, Bike Facilities, and Community Facilities within 0.25-Mile of the MSF Site

Source: Metro 2024k

4.16.3 Environmental Consequences/Environmental Impacts

4.16.3.1 No Build Alternative

Under the No Build Alternative, projects identified in the SCAG *2016-2040 RTP/SCS*, Metro's 2009 *LRTP*, and Measure M, as well as local projects, would continue to be built, which would be subject to separate environmental analyses to evaluate potential impacts. Under NEPA, the No Build Alternative is not expected to result in adverse effects related to parklands, bike facilities, or community facilities.

4.16.3.2 Locally Preferred Alternative

Parklands

Acquisition: The LPA will be located within street and rail ROWs, or within acquired properties, and not on or through parklands and recreational facilities. TPSS sites and structures, as well as parking facilities, will be located on properties currently developed with surface parking lots, commercial uses, industrial uses, or that are vacant and abutting the alignment. No property acquisitions for the LPA are required at or around the identified parkland and recreational facilities that will result in displacements or relocation of these facilities.

Paramount Park's northern boundary is separated from the LPA by a 110-foot LADWP-owned utility ROW. In addition to this utility ROW, a 40-foot-wide strip owned by Metro is leased to the City of Paramount and designated for "[p]arking and landscaping for Paramount Park only, and no other uses." Exhibit E to the lease states that "there is a possibility that the West Santa Ana Branch will be selected as a rail connector with Orange County. If such a decision is made, Metro will probably require the return of the entire ROW adjacent to Paramount Park." Per 23 CFR 774.11(h), the property was reserved in the lease agreement for future transportation use while functioning temporarily to support park use.[9]

The LPA will require a partial property acquisition of the LADWP utility ROW to accommodate the track alignment, Paramount Bike Trail, a replacement pedestrian bridge that will connect the Paramount High School campuses, and a permanent aerial easement on public ROW at the corner of Paramount Boulevard and Rosecrans Avenue, as well as along the northern boundary of Paramount Park. The primary use of the LADWP utility ROW is not for recreation and will not directly affect the function of Paramount Park or the Paramount Bike Trail. The LPA will require termination of the lease agreement between Metro and the City of Paramount for the 40-foot-wide section of the Metro-owned ROW currently used for parking and landscaping for Paramount Park. The reversion of the leased parking area does not require property acquisition within the Paramount Park boundary. Park recreational facilities and buildings will not be disturbed, and the general function of Paramount Park will remain unchanged.

TPSS sites and structures will be located within rail ROW or on properties currently developed with surface parking lots, commercial uses, industrial uses, or are vacant and abutting the LPA. Parking facilities at the Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station will be located on sites currently developed with commercial, industrial, and residential uses. These structures and

[9] License Agreement A000604 acknowledges that the return of the entire ROW adjacent to Paramount Park is a possibility for the WSAB rail connector project.

facilities will not be located on or adjacent to parklands or sites developed with recreational facilities.

Property acquisitions will comply with all applicable federal and state requirements, including the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1971 and the California Relocation Act (see *West Santa Ana Branch Transit Corridor Project Displacements and Acquisitions Impact Analysis Report* [Metro 2024m]). The LPA will not result in an adverse effect related to displacement or acquisition of a park.

Parking: Off-site parking at Salt Lake Park and on-site parking at Paramount Park will be affected. Approximately 114 off-site parking spaces located within the San Pedro Subdivision ROW along the northbound side of Salt Lake Avenue between Bell and Florence Avenues are currently used by Salt Lake Park visitors. The LPA will require the removal/relocation of the off-site parking spaces; however, removal of the parking spaces will not result in an adverse effect related to parking or use of Salt Lake Park because other parking will remain available. The Salt Lake Park on-site parking lot along Salt Lake Avenue with approximately 58 parking spots and the 7 off-site parking spaces along the eastbound side of Salt Lake Avenue between Bell and Florence Avenues will not be affected. Street parking along Florence Avenue and Bissell Street, in addition to other on-site and off-site parking around Salt Lake Park, will remain unaffected. The general function of Salt Lake Park will not be affected. In the City of Paramount, the LPA will require termination of the lease agreement between Metro and the City of Paramount for the 40-foot-wide section of the Metro-owned ROW to accommodate the at-grade alignment and aerial easement. The area is currently used for parking and landscaping by Paramount Park. The LPA will affect approximately 20 (of approximately 300) on-site parking spaces on the northern portion of Paramount Park. However, the remaining approximately 280 on-site parking spots will be maintained to the extent feasible, and off-site parking on Paramount Boulevard will not be affected. Park and recreational facilities and buildings will not be disturbed, and the general function of Paramount Park will remain unchanged. Under NEPA, the LPA will not result in an adverse effect related to parking at the park.

Access: The LPA will not obstruct vehicle or pedestrian access to and from the parklands and recreational facilities in the Affected Area for parklands. General access to the surrounding parks will be increased by providing new transit stations near park and recreational facilities. Furthermore, partial acquisition of the adjacent LADWP utility ROW and reversion of the leased parking in Paramount Park will not adversely affect existing vehicle and pedestrian access to the park, and access from Paramount Boulevard to Paramount Park will not be affected. In addition to existing safety barriers, the LPA will include additional safety barriers as necessary along the alignment and in station areas for safety and to hinder illegal track crossings. Pedestrian and vehicular access to parklands and recreational facilities will be maintained at intersections and will not be impeded. Under NEPA, the LPA will not result in an adverse effect related to park access.

Bike Facilities

The existing and planned bike paths identified along the LPA will help achieve Metro's First and Last Mile objectives for transit-oriented communities and provide connectivity to the station areas and surrounding communities. Street improvements as part of the LPA (e.g., grade separations, traffic signalization) will also be implemented using the Metro Rail Design Criteria or equivalent as design guidance to keep bike facilities accessible.

Bike facilities within 0.25-mile of the LPA alignment include the Class I, II, III, and IV bikeways of the City of LA Bikeway System, Los Angeles River Bike Path, Rio Hondo Bike Path, Paramount Bike Trail, Bellflower Bike Trail, San Gabriel River Mid-Trail, Artesia Historic District Recreation Trails, and bikeways maintained by the County of Los Angeles (Figure 4.16-1 through Figure 4.16-4). A portion of the alignment will be aerial and cross above the Los Angeles River Bike Path and the Rio Hondo Bike Path in the City of South Gate via new bridges that will span the river channels, and also cross over the San Gabriel River Mid-Trail via the existing rail ROW bridge. As such, access to and from these bike paths will not be affected.

The LPA will be adjacent to the Paramount Bike Trail, Bellflower Bike Trail, and Artesia Historic District Recreation Trails located parallel along and partially within the PEROW. Operation of the LPA within segments of the PEROW extending south from the intersection of Rosecrans Avenue and Paramount Boulevard to Lakewood Boulevard may not have sufficient space to accommodate the project alignment and operate the Paramount Bike Trail safely, which may require a realignment of the Paramount Bike Trail.[10] Specifically, the Paramount Bike Trail segment between Somerset and Lakewood Boulevards is located within the PEROW. The LPA will install tracks along the southwest side of the PEROW along this segment, requiring the realignment of this segment of the existing bike trail to the north side of the PEROW and will require removal of an approximately 930-foot-long segment of the existing Paramount Bike Trail to accommodate the track alignment. Relocation of this segment of the Paramount Bike Trail will require users of the bike trail to cross the railroad tracks at Lakewood Boulevard to access the bike trail across the street. This segment of the existing bike trail is located at the end of the Paramount Bike Trail. Although segments of the Paramount Bike Trail will be realigned, the bike trail will remain operational and will continue to be used by the community; access to and from the bike path will not be affected.

Additionally, the LPA will require realignment of the Bellflower Bike Trail segment east of Bellflower Boulevard on the north side of the PEROW and relocation of a bus stop to accommodate the Bellflower Station platform and tracks. Although segments of the bike trails will be realigned, the bike trail will remain within the PEROW; the function of the bike trail will be maintained; and access to and from the bike path will not be affected. The bike trail and bus stop will continue to be available for use by the community.

The LPA will not require the realignment of the Artesia Historic District Recreation Trails. The bike trails will remain within the PEROW; the function of the bike trails will be maintained; and access to and from this bike trail will not be affected. The bike trails will continue to be available for use by the community.

With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) as discussed in Section 4.1.4, Land Use, modifications to the bicycle facilities will maintain continuity with other segments of the Paramount and Bellflower Bike Trails. Therefore, with implementation of mitigation, the LPA will not result in an adverse effect related to access to existing bike facilities.

[10] A Bikeway License Agreement between the City of Paramount and Metro was signed in February 2023. The license property comprises the Metro-owned property at the south end of Metro's ROW running southeast, starting from the intersection of Paramount Boulevard and Rosecrans Avenue and diverting outside of Metro's ROW, approximately 300 feet east of the Paramount pedestrian bridge.

The LPA could preempt or obstruct future development and implementation of bike paths proposed and identified in the *City of Huntington Park Bicycle Transportation Master Plan*, *City of Cudahy 2040 General Plan*, *South Gate Bicycle Transportation Plan*, and *City of Bell Bicycle Master Plan* (see Section 4.1.3, Land Use). While planned, the bike facilities are unfunded and are not scheduled for implementation. The following rail ROW locations along the alignment will not have adequate space to accommodate a bicycle path, proposed tracks, and relocated freight tracks:

- **Class I bicycle path along Salt Lake Avenue (Cities of Huntington Park, Bell, and Cudahy).** The San Pedro Subdivision ROW in the Cities of Huntington Park, Bell, and Cudahy will not have adequate space to accommodate a planned Class I bicycle path along Salt Lake Avenue as shown in the bicycle master plans. The Salt Lake Avenue ROW has sufficient space to accommodate a Class II or Class III bicycle path parallel to the San Pedro Subdivision ROW. Converting the planned Class I bicycle path into a Class II or Class III bicycle path along Salt Lake Avenue will keep the bicycle network within the City of Huntington Park, Bell, and Cudahy connected within each city. Metro will continue coordination with the City of Huntington Park to minimize potential adverse effects to the future implementation of the *City of Huntington Park Bicycle Transportation Master Plan*. While planned, the facility is unfunded and not scheduled for implementation.
- **Class I bicycle path north of Rayo Avenue and south of the Los Angeles River (City of South Gate).** Specifically, the San Pedro Subdivision ROW will not have enough space to accommodate a bike path, LRT tracks, and the freight tracks north of Rayo Avenue and south of the Los Angeles River in the City of South Gate, nor space to accommodate the future Class I bicycle path along Salt Lake Avenue in the City of Bell. However, there will be sufficient space along the Salt Lake Avenue Street ROW for the city to accommodate a Class II or Class III bicycle path along the street. Metro will continue coordination with the City of South Gate to minimize potential adverse effects to the future implementation of the *City of South Gate Bicycle Transportation Plan*. While planned, the facility is unfunded and not scheduled for implementation.

Overall, the LPA will be consistent with applicable city bike master plans' objectives and policies. The planned Class I bicycle paths could be converted into Class II or Class III bicycle paths, which will maintain the connectivity identified in the bicycle master plans. However, under NEPA, the reclassification of the bike paths is considered an inconsistency with the current bike plans and an adverse effect will occur.

Metro continues to coordinate with jurisdictions and local agencies so that the LPA will not preempt future development, goals, and plans within each jurisdiction. Under Mitigation Measure LU-1 (Consistency with Bike Plans), described in Section 4.1.4, of the Land Use Section, Metro will continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. As part of this effort, Metro, as appropriate, will support preparation of amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, and includes public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Additional discussion on the LPA and bicycle paths as it relates to land use planning is provided in Section 4.1.3.

Community Facilities

Acquisition: Table 4.16.4 summarizes effects to community facilities along the LPA alignment. Property acquisitions will be required to accommodate aerial columns and structures; grade separations and track alignment; TPSS sites and structures; and parking facilities.

Table 4.16.4. Effects to Community Facilities Located within 0.25 Mile of the LPA

Facility Name	Type of Acquisition	Loss of Supporting Street Parking	Affects Vehicle Access	Affects Pedestrian Access
American Indian Bible Church 5840 Main St, South Gate	Partial acquisition; grade crossing	Yes	No	No
San Antonio Elementary School 6222 State St, Huntington Park	Partial acquisition; grade crossing	Yes	No	No

Source: Metro 2024k
Note: LPA = Locally Preferred Alternative

New TPSS sites, ancillary structures, and parking facilities will be located on properties currently developed with surface parking lots, commercial uses, industrial uses, or that are vacant and abut the alignment. Parking facilities for the LPA will not be located on properties with community facilities. Partial property acquisitions will not disturb existing buildings or change or impact the functionality of the community facilities. Under NEPA, the LPA will not result in an adverse effect related to the functionality of the community facilities.

Parking: Partial property acquisitions will not affect on-site or street parking for community facilities. However, in Huntington Park the restriping of Randolph Street and State Street to accommodate the LPA alignment and grade-crossing improvements will affect street parking on Randolph Street between State Street and Plaska Avenue. State Street parking south of the southern driveway into San Antonio Elementary School will not be affected. Also in Huntington Park, street parking on Main Street adjacent to the American Indian Bible Church will be affected, but street parking along Industrial Avenue will not be affected. Under NEPA, the LPA will not result in an adverse effect related to community facility parking.

Access: The LPA will be aerial or at-grade in the street ROW, rail ROW, or within acquired properties and will not affect vehicle or pedestrian access to community facilities during operation. Access points to the affected community facilities will not be changed, and accessibility to community facilities to the nearest station areas will be enhanced. This includes rebuilding the pedestrian bridge that connects the east and west campuses of Paramount High School. Partial property acquisitions will avoid impacting access points to community facilities, and pedestrian and vehicular access to community facilities will be maintained and will not be impeded. Under NEPA, the LPA will not result in an adverse effect related to community facility access.

4.16.3.3 Design Option: Close 186th Street

Parklands

The design option to close 186th Street but introduce an at-grade crossing at 187th Street would not require the acquisition or displacement of parklands or recreational facilities.

Therefore, consistent with the LPA without the design option, the LPA with the design option would not result in an adverse effect related to parklands and recreational facilities.

Bike Facilities

The LPA with the design option would not impede or affect access to and from the bikeways. The nearest bike facility to 186th Street is the Artesia Historic District Recreation Trails that parallels the LPA between 183rd Street/Gridley Road and 187th Street/Corby Avenue. The LPA with the design option would not require the realignment of the Artesia Historic District Recreation Trails. However, similar to the LPA without the design option, as described above, the LPA with the design option could preempt future development and implementation of planned bike paths in cities along the LPA alignment. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4 of the Land Use Section, Metro would continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Additional discussion on bicycle paths and the LPA with the design option as it relates to land use planning is provided in Section 4.1.3.

Community Facilities

The design option would not require the acquisition of community facility properties as it would involve closing 186th Street rather than 187th Street. The design option would not affect on- or off-site parking or impede vehicle and pedestrian access used for surrounding community facilities. Therefore, consistent with the LPA without the design option, the LPA with the design option would not result in an adverse effect related to community facilities.

4.16.3.4 Maintenance and Storage Facility

Parklands

The MSF site is city-owned, designated as Open Space by the City of Bellflower, and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX). The recreational commercial business is not a public parkland or recreational facility, and acquisition of this property will be required. As discussed in Section 4.1.3.4 of the Land Use Section, the City of Bellflower has confirmed that the site currently operates as a commercial business, that the property is not designated as a significant park or recreation area, and is not designated as having an important role in meeting the park and recreation objectives of the city. Metro has continued to coordinate extensively with the city, including after circulation of the Draft EIS/EIR. In a meeting in April 2022, the city confirmed that the parcels that will be acquired for the MSF are not a significant park or recreation area.

The nearest parkland to the MSF site is the Flora Vista Dog Park located adjacent to the southeastern edge of the property. The MSF will not affect on-site or street parking used by visitors to Flora Vista Dog Park. Pedestrian and vehicle access to Flora Vista Dog Park will be maintained and will not be impeded.

Bike Facilities

The Bellflower Bike Trail segment from Lakewood Boulevard south to Clark Avenue is located within the PEROW and south of the MSF site. This segment of the PEROW may not have sufficient room to accommodate the MSF lead tracks and LRT tracks, and operate the Bellflower Bike Trail safely. This may require a realignment in this segment of the Bellflower Bike Trail to maintain connectivity with the Paramount Bike Trail west of Lakewood Boulevard and the other segments of the Bellflower Bike Trail, although realignment will not be required near the MSF site. With the implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), as discussed in Section 4.1.4 of the Land Use Section, modifications to the bicycle facilities will maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. In summary, all functions of the MSF will be located within the facility; the lead tracks will be located within the PEROW; the MSF will not impair the function of the bike trail; and access to and from the bike trail will be maintained. Under NEPA, with implementation of this mitigation measure, the MSF will not result in an adverse effect related to bike facilities.

Community Facilities

The MSF site is currently used by the Hollywood Sports Airsoft and Paintball Park and Bellflower BMX, a recreational commercial business, and is not identified as a community facility. Community facilities located 0.25-mile from the MSF site include Albert Baxter Elementary School north of Somerset Boulevard, Adventist Union School, Albert Baxter Elementary School to the southwest, and World Mission Maranatha Church to the south on Alondra Boulevard. The MSF will require two full property acquisitions, which will not affect on-site or street parking used by the surrounding community facilities. Access to surrounding community facilities will be maintained, and vehicle or pedestrian access will not be impeded. Under NEPA, the MSF will not result in an adverse effect related to community facilities.

4.16.3.5 U.S. Army Corps of Engineers Facilities

Operation of the LPA at the USACE facilities will not require the acquisition or displacement, or impede or affect access, to parklands and recreational facilities, bike facilities, or community facilities as none are located within these facilities. Therefore, no adverse effects will occur during operation of the LPA at the USACE facilities.

4.16.4 Project Measures and Mitigation Measures

4.16.4.1 Project Measures

There are no project measures required by law or permit related to parklands and community facilities.

4.16.4.2 Mitigation Measures

Refer to Mitigation Measure LU-1 (Consistency with Bike Plans) in Section 4.1.4, Land Use.

4.16.5 California Environmental Quality Act Determination

4.16.5.1 Threshold PARK-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable standards for any park or recreational facility?

No Project Alternative

Under the No Project Alternative, plans for bike paths proposed within or along the rail ROW could be implemented and would not be affected by the LPA. These bike paths would enhance and connect with existing active transportation corridors for the cities. The No Project Alternative would not impact off-site or on-site parking used for parklands or governmental facilities and would not result in the need for the expansion or construction of new parkland or governmental facilities. In addition, the No Project Alternative would not provide greater accessibility to nearby parklands and governmental facilities as would the LPA. Therefore, impacts to parks or recreational facilities and governmental facilities would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA is an infrastructure improvement project in an urban setting that will provide a mode of transportation, accessibility, and connectivity in the surrounding communities. The LPA will not directly create or increase the residential population of the surrounding communities that will result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities. Instead, accessibility to parklands, recreational facilities, and governmental facilities may be improved by having a nearby transit station. Realignment of segments of the Paramount and Bellflower Bike Trails will not result in adverse physical effects or prevent access to bike facilities, and impacts will be less than significant. Nonetheless, Mitigation Measure LU-1 (Consistency with Bike Plans) will be implemented to maintain connectivity and further reduce impacts to a less than significant level as it relates to connectivity.

As discussed in Section 4.16.3.2, the LPA could preempt future development and implementation of the planned Class I bicycle path along Salt Lake Avenue and the planned Class I bicycle path north of Rayo Avenue and south of the Los Angeles River, identified in the *City of Huntington Park Bicycle Transportation Master Plan, City of Cudahy 2040 General Plan, South Gate Bicycle Transportation Plan,* and *City of Bell Bicycle Master Plan,* and will result in a significant and unavoidable impact. Converting the planned Class I bicycle paths into Class II or Class III bicycle paths is feasible and will maintain the connectivity identified in the bicycle master plans. However, the reclassification of the bike paths is considered an inconsistency with the current bike plans and a significant impact will occur.

Metro continues to coordinate with jurisdictions and local agencies so that the LPA will not preempt future development, goals, and plans within each jurisdiction. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Land Use Section, Metro will continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. As part of this effort, Metro, as appropriate, will support preparation of amended language for each affected bicycle plan, demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a

local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination, and with the implementation of mitigation, the LPA may still preempt future development and the implementation of the planned bike paths and limit access to bicycle facilities. Therefore, even with implementation of mitigation, the LPA will result in a significant and unavoidable impact.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans)

Impacts Remaining After Mitigation

Significant and unavoidable impact.

Design Option: Close 186th Street

The LPA with the design option would not generate a new residential population of the surrounding communities that would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities. The LPA with the design option would not impede or affect access to and from nearby parklands, bikeways, or recreational facilities. The nearest bike facility to 186th Street is the Artesia Historic District Recreation Trails that parallels the LPA between 183rd Street/Gridley Road and 187th Street/Corby Avenue. The LPA with the design option would not require the realignment of the Artesia Historic District Recreation Trails. The bike trails would remain within the PEROW, and the function of and access to and from the bike trails would be maintained. The bike trails would continue to be available for use by the community.

The design option would be consistent with the SCAG 2016-2040 RTP/SCS and the City of Artesia General Plan 2030. However, similar to the LPA without the design option, as described above, the LPA with the design option could preempt future development and implementation of other planned bike paths in cities along the LPA alignment. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Land Use, Metro would continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination, and with the implementation of mitigation, the LPA with the design option may still preempt future development and the implementation of the planned bike paths. Therefore, even with implementation of mitigation, the LPA with the design option would result in a significant and unavoidable impact.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans)

Impacts Remaining After Mitigation

Significant and unavoidable impact.

Maintenance and Storage Facility

The MSF will not result in physical impacts to nearby public parks or community facilities and will not generate a new residential population that will increase the need for new recreational facilities. As discussed in Section 4.16.3.4, the City of Bellflower has confirmed that the site is designated as Open Space and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX). The property is not designated as a significant park or recreation area and is not designated as having an important role in meeting the park and recreation objectives of the city. The land is not a public parkland or recreational facility, or government facility. Based on this coordination, it is anticipated that the city will amend the General Plan so that the MSF facility use will be consistent with an appropriate city land use designation. As discussed in Section 4.16.3.4, changes to the Bellflower Bike Trail segment from Lakewood Boulevard south to Clark Avenue and implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) will maintain access and connection between the bike facilities. Therefore, impacts will be less than significant, and mitigation will not be required.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation

Less than significant impact.

4.16.5.2 Threshold PARK-2: Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Project Alternative

Under the No Project Alternative, plans for bike paths proposed within or along the rail ROW could be implemented and would not be affected by the LPA. These bike paths would enhance and connect with existing active transportation corridors for the cities. The No Project Alternative would not directly increase the use of the existing neighborhood and regional parks, bike facilities, or other recreational facilities and would not accelerate physical deterioration of such facilities. Therefore, impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA will improve accessibility to existing neighborhood parks, recreational facilities, and bike facilities by having a nearby transit station. The LPA will not directly increase the local residential population that could result in an increased use of parklands and other recreational facilities. Instead, improved access to recreational facilities may result in more use by the local and surrounding communities. Occasionally, an increase in parkland and recreational facilities may occur during large community events such as fairs and festivals, in which the city departments will provide adequate services and resources to serve attendees of these events. However, these events are anticipated to be minimal, and the potential increase in the use of parklands and recreational facilities is not anticipated to result in the need for construction of new parklands or community facilities.

Existing bike facilities within 0.25-mile of the LPA alignment are summarized in Table 4.16.2. The existing Paramount and Bellflower Bike Trails will also need to be reconfigured to accommodate the LPA, but changes will not accelerate physical deterioration of the bike facilities and connection will be maintained with the implementation of Mitigation Measure LU-1 (Consistency with Bike Plans). As discussed in Section 4.16.5.1, several planned bike facilities will be required to be re-categorized as Class II or Class III bicycle paths to accommodate the LPA and to keep the bicycle networks connected within each city. Converting the planned Class I bicycle paths into Class II or Class III bicycle paths is feasible and will maintain the connectivity identified in the bicycle master plans. However, reclassification of the bike paths is considered an inconsistency with current bike plans and a significant impact will occur.

Nonetheless, the LPA is a transportation infrastructure project and will not directly increase the local residential population that may result in an increased use of the bike facilities. Greater accessibility to the bike facilities with nearby transit stations could result in increased use by the local and surrounding communities; however, the increased use is not expected to severely impact the infrastructure of the existing bike facilities as all maintenance on the bike facilities will be provided by the local city. Furthermore, the existing and planned bike facilities will be reconfigured with the coordination of each city so the bike facilities will be able to accommodate the LPA while meeting city standards. It is anticipated that an increase in use will be minimal and will not result in the need for construction of new bike paths beyond what is already planned in the bike master plans. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Similar to the LPA without the design option, the LPA with the design option will not create new residential populations that directly increase the use of existing parks, recreational facilities, and bike facilities in the surrounding communities. Improved access to recreational facilities may result in more use by local and surrounding communities for recreational purposes. However, the increased use is expected to be minimal and would not result in or accelerate substantial physical deterioration of parks, bikeways, and recreational facilities. The nearest bike facility to the design option is the Artesia Historic District Recreation Trails that parallels the LPA between 183rd Street/Gridley Road and 187th Street/Corby Avenue. Similar to the LPA without the design option, the use of this bike facility may increase; however, the increased use is not expected to severely impact this bike facility as all maintenance of this facility would be provided by the City of Artesia. The increase in use would be minimal and would not result in the need for construction of new bike paths beyond what is planned by the City of Artesia. Therefore, impacts will be less than significant.

Maintenance and Storage Facility

The MSF will not directly create new residential populations that directly use existing parks, recreational facilities, and bike facilities in the surrounding communities. The MSF is a support facility for the LPA and will provide maintenance and storage services and will not provide improved access to parks, recreational facilities, and bike facilities that may result in increased use. Therefore, impacts will be less than significant, and mitigation will not be required.

4.16.5.3 Threshold PARK-3: Would the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Project Alternative

Under the No Project Alternative, plans for bike paths proposed within or along the rail ROW could be implemented and would not be affected by the LPA. These bike paths would enhance and connect with existing active transportation corridors for the cities and would undergo individual environmental clearance. Therefore, impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The Project is a transportation infrastructure project that will provide new transit options to the surrounding community. The LPA does not include the construction of recreational facilities or require the expansion of existing park facilities. The existing Paramount Bike Trail and Bellflower Bike Trail will be reconfigured to accommodate the LPA, and access and connectivity will be maintained with the implementation of Mitigation Measure LU-1 (Consistency with Bike Plans). The modifications will not result in adverse physical effects to the environment. As discussed in Section 4.16.5.1, several planned bike facilities will require re-categorization from Class I to Class II or Class III bicycle paths to accommodate the LPA and keep the bicycle networks connected within each city. Converting the planned Class I bicycle paths into Class II or Class III bicycle paths is feasible and will maintain the connectivity identified in the bicycle master plans. However, the reclassification of the bike paths is considered an inconsistency with the current bike plans and a significant impact will occur. The LPA could preempt future development and implementation of the planned Class I bicycle path along Salt Lake Avenue and the planned Class I bicycle path north of Rayo Avenue and south of the Los Angeles River, as discussed in Section 4.16.3.2.

Metro continues to coordinate with jurisdictions and local agencies so that the LPA will not preempt future development, goals, and plans within each jurisdiction. Under Mitigation Measure LU- 1 (Consistency with Bike Plans) described in Section 4.1.4, Land Use, Metro will continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. As part of this effort, Metro, as appropriate, will prepare amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination, and with the implementation of mitigation, the LPA may still preempt future development and the implementation of the planned bike paths, as well as limit access to bicycle facilities. Thus, impacts to bike facilities will be significant and unavoidable.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation

Significant and unavoidable impact.

Design Option: Close 186th Street

The LPA with the design option is a transportation infrastructure project that would provide new transit options to the surrounding community. Similar to the LPA without the design option, the LPA with the design option would not include the construction or expansion of recreational facilities and would not impede or affect access to and from nearby parklands, bikeways, or recreational facilities. The nearest bike facility to 186th Street is the Artesia Historic District Recreation Trails that parallels the LPA between 183rd Street/Gridley Road and 187th Street/Corby Avenue. The LPA with the design option would not require the realignment of the Artesia Historic District Recreation Trails. The bike trails would remain within the PEROW, and the function of and access to and from the bike trails would be maintained. The bike trails would continue to be available for use by the community.

The design option would be consistent with the SCAG 2016-2040 RTP/SCS and the City of Artesia General Plan 2030. However, similar to the LPA without the design option, as described above, the LPA with the design option could preempt future development and implementation of other planned bike paths in cities along the LPA alignment. Under Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4, Land Use, Metro would continue to coordinate with jurisdictions and local agencies to minimize the preemption of future development, goals, and plans within each jurisdiction. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination, and with implementation of mitigation, the LPA with the design option may still preempt future development and the implementation of the planned bike paths. Therefore, even with implementation of mitigation, the LPA with the design option would result in a significant and unavoidable impact.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation

Significant and unavoidable impact.

Maintenance and Storage Facility

The MSF is a support facility and will provide maintenance and storage services to the LPA. The MSF does not include the construction of recreational facilities or require the expansion of existing recreational facilities. The MSF site is city-owned, designated as Open Space by the City of Bellflower, and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX). The current land use is not a public parkland or recreational facility.

Changes to the Bellflower Bike Trail segment from Lakewood Boulevard south to Clark Avenue and implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) will maintain access and connection between the bike facilities. Modifications to the bike trail will not result in adverse physical effects, and access to and from the community will be maintained; therefore, impacts will be less than significant.

Mitigation Measures

Mitigation Measure LU-1 (Consistency with Bike Plans).

Impacts Remaining After Mitigation

Less than significant.

4.17 Economic and Fiscal Impacts

This section has been revised since the Draft EIS/EIR based on comments received on the Draft EIS/EIR, identification of the LPA, inclusive of refinements, and stakeholder coordination. Estimated job creation was updated in Section 4.17.2.3 under the heading "Operational Impacts on Employment" to reflect updated operating cost data for the LPA. The analysis was also revised to reflect updated information on acquisitions and displacements, as presented in Section 4.3 (Acquisitions and Displacements) of this Final EIS/EIR. In addition, information was added to Section 4.17.3.2 under the heading "Long-Term Impacts on Property Values" regarding Metro's Joint Development Program. In response to comments, a new discussion on the potential impact to sales tax revenues was also added under "Impacts on Local Tax Bases."

The impact conclusions presented in the Draft EIS/EIR regarding economic and fiscal remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. Operation of the LPA will generate economic activity in the Study Area and the greater Los Angeles metropolitan region. During operation, the LPA will provide employees, residents, and visitors an additional transportation link to employment and visitor destinations in LA County. Additional information on economic and fiscal impacts is provided in the *West Santa Ana Branch Transit Corridor Project Final Economic and Fiscal Impact Analysis Report* (Metro 2024r).

4.17.1 Regulatory Setting and Methodology

4.17.1.1 Regulatory Setting

While no specific laws or executive orders regulate the topic of economic impacts, the economics analysis used federal, state, and local guidance to prepare this report, as described below.

Federal

The following federal documents provided guidance for conducting the economic and fiscal impact analysis:

- **Federal Highway Administration Technical Advisory 6640.8A (1987):** This guidance document states that the economic impact analysis should include a discussion of the local and regional impacts of each alternative related to economic development, tax revenue impacts, and employment opportunities. The analysis should also discuss the impacts to local businesses and business districts and the opportunity to minimize or reduce potential impacts.
- **Federal Transit Administration, Social and Economic Impacts (2016):** Transit projects may have economic impacts that should be included in the environmental documentation process. Impacts discussed may include business displacements, disruptions to business activities, and impacts to the regional economy.
- **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970:** The Uniform Relocation Act (P.L. 91-646) provides important protections and assistance for people affected by federally funded projects. This law was enacted by

Congress to ensure that people whose real property is acquired, or who move as a result of projects receiving federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy.

State

- **CEQA:** According to CEQA, economic effects of a project shall not be treated as significant effects on the environment. However, economic effects of the project may be considered to determine the significance of the physical changes caused by the project (see *CEQA Guidelines*, § 15064(e)).
- **California Relocation Assistance Act:** The California Relocation Assistance Act (Government Code § 7260 et seq.) establishes uniform policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. This Act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement.

Local

SCAG defines the regional planning principles for the corridor, while local municipalities define economic policies for specific areas within their jurisdictional boundaries. Refer to the *West Santa Ana Branch Transit Corridor Project Final Land Use Impact Analysis Report* (Metro 2024a) for additional information.

4.17.1.2 Methodology

NEPA requires a discussion of economic and fiscal effects. No specific laws or executive orders specify the impact criteria and thresholds of economic impacts. The methodology for the evaluation of impacts to economics involved an analysis of existing data related to population, employment, tax revenues, development, and an assessment of whether the LPA will adversely impact the regional economy. The environmental impact analyses presented in this section focus on the economic and fiscal effects of parcel acquisitions that will occur with implementation of the LPA and resulting loss in tax revenue and jobs. The economic and fiscal analysis also considers the indirect and induced economic effects and benefits due to the expenditure of funds to construct the LPA. To assess and determine the extent of potential economic effects, demographic, economic, LA County Assessor valuation, property tax, construction cost, and land use data were examined. Operational impacts have the potential to create new jobs and income, impact property values and development, and improve regional mobility and connectivity. Additional information on the methodology used for the economics and fiscal analysis is provided in the Economic and Fiscal Impact Analysis Report.

Under CEQA, economic changes resulting from the LPA will not be treated as having significant effects on the environment unless the economic change(s) are used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic effects on people, those adverse effects may be used as a factor in determining whether the change is significant (CEQA § 15064(e)).

4.17.2 Affected Environment/Existing Conditions

The LPA is located in one of the country's largest metropolitan areas. The LPA alignment will traverse 12 jurisdictions: the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, as well as portions of

unincorporated LA County. For economics, the Affected Area is defined as a 0.25-mile area on both sides of the alignment and a 0.50-mile area around stations.

When possible, data are presented for the Affected Area for economics, but some economic or fiscal data are discussed at the city or regional level when data for the smaller area were not available or are not appropriate due to the larger area of influence.

4.17.2.1 Population, Housing, and Employment

Table 4.17.1 shows population, housing, and employment data for the Affected Area for economics in the Base Year (2017) and Horizon Year (2042). Population and households are projected to grow at 1.9 percent per year, while employment is forecast to grow at 0.8 percent per year. Section 4.2 of the *West Santa Ana Branch Transit Corridor Project Final Communities and Neighborhoods Impact Analysis Report* (Metro 2024n) provides additional information.

Table 4.17.1. Affected Area of Economics Population, Housing, and Employment, 2017 and 2042

Subject	Item	LPA
Population	Year 2017	151,111
	Year 2042	240,580
	Average Annual Growth	1.9%
Households	Year 2017	39,338
	Year 2042	63,711
	Average Annual Growth	1.9%
Employment	Year 2017	37,937
	Year 2042	46,230
	Average Annual Growth	0.8%

Source: Metro 2024n
Note: LPA = Locally Preferred Alternative

Table 4.22.5 in Section 4.22 in the Environmental Justice Section of this Final EIS/EIR provides the percentages of the populations in Study Area jurisdictions that are racial/ethnic minorities and/or are living in poverty.

According to the U.S. Census Bureau (2018), employment within 2 miles of the LPA is concentrated in the education, health care, and manufacturing sectors, representing 34 percent of all jobs. Other large employers in the area include the retail trade (13 percent); arts, entertainment, recreation, accommodation, and food service (10 percent); and professional services (9 percent). These sectors are strong sources of employment in LA County as a whole, which has a slightly higher percentage of jobs in the education and health care sector and a lower percentage of jobs in manufacturing when compared to the Affected Area for economics. Section 4.1 of the Economic and Fiscal Impact Analysis Report provides additional information.

4.17.2.2 Local Government Tax Revenues

City and county governments rely on tax revenues to fund general services to their respective communities. The LPA could affect property tax and retail sales revenues for jurisdictions in the Affected Area for economics. For the State of California, voter-approved Proposition 13 set the property tax rate at 1 percent of assessed value. The 1 percent is shared by all taxing agencies whose districts include the property location, such as cities, school districts, fire departments/districts, and LA County. All cities in the Affected Area for economics except Cudahy receive a portion of the basic levy to fund government services. The rate varies for each city.

Table 4.17.2 shows tax revenues and the percent of total general fund tax revenues represented by property tax revenues for each city within the Affected Area for economics. Property taxes represented 7 to 46 percent of total tax revenue. Approximately 41 percent of all taxes are included as "Other Taxes" in Table 4.17.2; "Other Taxes" may include transient occupancy taxes, utility taxes, business license taxes, and other taxes for which the source is not specified.

Table 4.17.2. Local Government Tax Revenues (2018)

City	Property Taxes	Sales Tax	Other Taxes	Total General Fund Tax Revenue	Property Tax as Percent of Total Tax Revenue
Los Angeles	$2,058,761,000	$557,990,000	$1,891,958,000	$4,508,709,000	46
Vernon	$17,270,355	$7,177,884	$23,974,390	$48,422,629	36
Huntington Park	$1,069,127	$11,686,353	$6,134,065	$18,889,545	6
Bell	$4,411,848	$2,360,400	$4,311,800	$11,084,048	40
Cudahy	$265,030	$1,270,000	$1,097,000	$2,632,030	10
South Gate	$12,314,651	$21,126,054	$4,928,819	$38,369,524	32
Downey	$25,996,994	$25,796,994	$12,218,000	$64,011,988	41
Paramount	$2,265,000	$7,800,000	$6,649,250	$16,714,250	14
Bellflower	$11,032,000	$6,172,000	$7,659,500	$24,863,500	44
Artesia	$2,444,466	$2,695,000	$1,153,381	$6,292,847	39
Cerritos	$3,125,000	$34,577,500	$5,188,900	$42,891,400	7
Total	$2,139,056,655	$674,109,538	$1,965,289,040	$4,778,455,233	45

Sources: City of Artesia 2018; City of Bell 2018b; City of Bellflower 2018; City of Cerritos 2018a; City of Cudahy 2018b; City of Downey 2018; City of Huntington Park 2018; City of Los Angeles 2018a; City of Paramount 2018; City of South Gate 2018; City of Vernon 2018
Note: Revenues reported do not include revenue sources such as license fees, fees for service, interest income, or other miscellaneous non-tax revenues.

4.17.2.3 Existing Land Use

The improved mobility and connectivity provided by stations could be one of many factors that influence new development or redevelopment of vacant or under-utilized properties near stations. Transportation investment may provide opportunities for TOD. This development may also serve as a catalyst for public and private economic revitalization that could provide economic benefits and an enhanced quality of life to communities.

One of the critical components of TOD is supportive policies, including land use policies, that encourage economic development around transit stations. These policies incentivize revitalization of underutilized or vacant parcels, encourage new housing near transit centers, support pedestrian and bike facilities, and preserve or expand access to open spaces and recreation. SCAG reports (2012a) that "all jurisdictions within the Study Area have one or more plans guiding future development around proposed stations."

Table 4.1.2 in Section 4.1.2.1 in the Land Use Section of this Final EIS/EIR provides station location information and surrounding land uses for the LPA. Additional information on land use policies is provided in the Economic and Fiscal Impact Analysis Report and the Communities and Neighborhoods Impact Analysis Report.

Table 4.17.3 provides station location information for the LPA, including the surrounding land uses currently in place.

Table 4.17.3. Existing Land Use Near Stations

Location	Station	Current Station Area Land Use
LA County	Slauson/A Line (adjacent to existing Metro A [Blue] Line Slauson Station)	Industrial, commercial, and residential; civic; open space
Huntington Park	Pacific/Randolph Florence/Salt Lake	Industrial, commercial, and low-scale residential; civic; open space
South Gate	Firestone I-105/C Line	Industrial; Azalea Shopping Center; residential; high-traffic and train movements
Downey	Gardendale	Health care (Rancho Los Amigos); commercial; residential
Paramount	Paramount/Rosecrans	Residential; adjacent to commercial and civic uses
Bellflower	Bellflower	Neighborhoods; residential; commercial and mixed use
Artesia	Pioneer	Industrial; mixed commercial; residential

Sources: SCAG 2013; Metro 2024r
Note: I- = Interstate; LA = Los Angeles

4.17.3 Environmental Consequences/Environmental Impacts

4.17.3.1 No Build Alternative

The No Build Alternative includes existing transportation networks and transportation improvements that have been committed to and identified in constrained plans of the Metro 2009 LRTP (Metro 2009a) and the SCAG 2016 RTP/SCS (SCAG 2016a). Table 2.4 in Chapter 2 (Alternatives Considered/Project Description) of this Final EIS/EIR lists the projects anticipated by 2042. Planned projects would be subject to separate environmental analysis to evaluate economic and fiscal impacts. Implementation of these projects, including operations and maintenance, would be subject to regulatory standards, conditions, and permitting requirements. Compliance with these standards would minimize economic impacts.

Residual impacts are expected to be minor. Therefore, under NEPA, the No Build Alternative would not result in adverse effects related to economic and fiscal effects.

4.17.3.2 Locally Preferred Alternative

The sections that follow describe the potential impacts of the LPA, the design option, and the MSF. More details about the effects of the LPA on economic and fiscal impacts are provided in the Economics and Fiscal Impacts Analysis Report. Discussions across the following economic and fiscal elements are evaluated in the following subsections:

- Operational Impacts on Employment
- Long-Term Impacts on Property Values
- Regional Mobility and Connectivity
- Impacts on Local Tax Bases
- Direct Employment Impacts from Displacements

Operational Impacts on Employment

The LPA will create long-term jobs and additional earnings as a result of operating and maintenance (O&M) expenditures. The benefits of operating and maintaining the light rail system will include providing a range of employment opportunities at living wages. The additional household earnings will result in an increase in positive economic activity to the local economy, both through direct hiring to fill transit jobs and indirectly as these transit workers spend their earnings, thus creating additional consumer demand and jobs to meet that demand.

Annual costs for the LPA were estimated in the *West Santa Ana Branch Transit Corridor Project Final Operating and Maintenance Costs Report* (Metro 2024w) and are shown in Table 4.17.4. LPA annual operating expenses are estimated to be $117.7 million. The O&M cost estimate has been updated to reflect more recent O&M costs on the existing Metro system as well as an update from 2020 dollars to 2023 dollars. Because of these updates, O&M cost has increased since the Draft EIS/EIR, leading to additional expected job creation. Refer to the Final Operating and Maintenance Cost Report (Metro 2024w) for additional information on O&M cost updates. Total wages and benefits are estimated to be approximately 62 percent of total operating expenses.

The overall impact of the additional O&M jobs on the regional economy will depend on the source of funding for the workers. While the LPA will create new jobs associated with operating and maintaining the new light rail line, most funding will come from state and local sources that are considered economic transfers within the region and will not result in new economic activity. In 2016, Metro received assistance from the federal government in the form of grants to fund approximately 10 percent of total operations (Metro 2017f). It is assumed that Metro will continue to receive similar levels of federal assistance to fund operations of the LPA; thus, the additional jobs created through operational activities will have a net benefit on regional economic activity and, under NEPA, the LPA will not result in adverse effects related to operational employment.

To estimate the regional impacts associated with the LPA, Regional Input-Output Modeling System (RIMS) II final-demand multipliers from the Bureau of Economic Analysis for the transit and ground transportation industry were applied to the amount of new funding that will be used for operating expenses (Bureau of Economic Analysis 2017). Multipliers for the

greater Los Angeles area were used. The results of this analysis are summarized in Table 4.17.4.

Table 4.17.4. Summary of Economic Impacts during Operation of the LPA

Item	LPA
Operating expenditure (2023 dollars):	$117,681,000
Percent of new money[1]	10
Additional operating expenditure funded by new federal money	$11,768,000
Final-demand multiplier for Transit and Ground Transportation Sector: Output	2.3162
Final-demand multiplier for Transit and Ground Transportation Sector: Earnings	0.7502
Final-demand multiplier for Transit and Ground Transportation Sector: Jobs per $1 million spent	27.9529
Regional impacts: Output	$27,257,000
Regional impacts: Earnings	$8,828,000
Regional impacts: Employment (person-year jobs)[2,3]	251

Source: Bureau of Economic Analysis 2017; Metro 2024w
Notes: [1] Percent of new money is the percent of total O&M expenses funded through federal funding sources that otherwise would not have been introduced into the regional economy.
[2] A job is defined as one job for one person for one year.
[3] The employment multipliers are based on 2015 data; therefore, the additional operating expenditure funded by new federal money was deflated to 2015 dollars based on the Bureau of Economic Inflation Factor of 1.31.
LPA = Locally Preferred Alternative; O&M operation and maintenance

The operational spending effects associated with the LPA will result in an estimated $27.3 million in overall economic activity per year. The economic activity includes direct and indirect activity. It is estimated that operation-related spending will provide regional economic benefits by generating $8.8 million in additional wages and salaries for households and by creating approximately 250 person-year jobs for all industries in the region per year. A person-year job is defined as one job for one person for one year. Based on the predicted regional economic benefits from both direct and indirect sources, the potential impacts will be beneficial and, under NEPA, the LPA will not result in adverse effects related to operational employment.

Long-Term Impacts on Property Values

The LPA is expected to indirectly lead to new development and/or redevelopment of land surrounding some of the stations, which would likely have the effect of increasing property tax revenues for the affected local jurisdictions. While development is regulated by the affected jurisdictions and is driven by regional and local economic conditions, light rail lines can advance the timing and increase the intensity of development, within the limits allowed by local zoning, particularly surrounding stations.

Research on the impacts associated with light rail systems indicates that light rail is one of many factors that can influence development. A study conducted by the U.S. Government Accountability Office (Wise 2014) identified key conditions that support TOD, including the following:

- Market demand for real estate
- Large parcels of land available for development
- Resident support for TOD
- Efficient access to jobs and centers of activity
- Local government support of TOD

Many communities along the LPAs are subject to local municipal policies that are or will be in place in the future to support TODs. The LPA will serve residents in a densely populated area located in economic and cultural activity centers, which is expected to attract continued investment in the area. The added investment would likely result in increased property values for businesses and residences near station areas. This is consistent with *The Real Estate Mantra—Locate Near Public Transportation*, a study conducted by the American Public Transportation Association and the National Association of Realtors (2019). However, some properties located next to the LPA alignment would likely have some reduction in value because of the nuisance effects associated with the LPA. Section 4.7 (Noise and Vibration) of this Final EIS/EIR and the *West Santa Ana Branch Transit Corridor Project Final Noise and Vibration Impact Analysis Report* (Metro 2024j) identify properties that will experience noise impacts. Mitigation measures such as soundwalls provided per Mitigation Measures NOI-1 (Soundwalls) and NOI-5 (Freight Track Relocation Soundwalls) (described in Section 4.7.4 of the Noise and Vibration Section), will help minimize and mitigate some of the impacts. Overall, the potential for increased property values and new development near station areas will likely offset any value reductions and will provide greater benefits to businesses and residences in the Affected Area for economics as well as increased property tax revenues benefiting the local jurisdictions. The net impact will likely be beneficial for the region and, under NEPA, the LPA will not result in adverse effects related to long-term impacts on property values.

Metro will work with local communities through the Joint Development Program to identify development opportunities and related infrastructure necessary to help create TOD and promote the positive impact for the community. It would be speculative to consider the environmental, economic, or fiscal impacts of such development at this time as development plans are unknown. Policies that encourage TOD, such as general plan updates for the Cities of Huntington Park and South Gate, will encourage development near station areas that should increase the property tax base for communities along the corridor. The new development near the LPA stations will likely result in new property tax revenues for the local and regional taxing authorities, as well as new economic opportunities for residents. Overall potential impacts to property values are anticipated to have a net benefit to the regional economy. More details about project effects on property values are provided in the Economic and Fiscal Impact Analysis Report.

Regional Mobility and Connectivity

Operation of the LPA will provide a number of economic benefits to businesses, employees, and residents in the area, as follows:

- Businesses will benefit from increased access to a broader labor market with a diverse set of skills that is served by the LPA.
- Potential employees who are transit-dependent will have access to a larger labor market, which may provide greater economic opportunities.
- Businesses located near stations may experience an increase in retail sales as riders travel to and from the station area.
- Some public transportation passengers may experience a reduction in vehicle ownership costs as they switch from driving to public transportation.
- Some areas may experience a reduction in congestion, which could lead to travel-time savings for businesses and individuals.
- The transit network will have improved connectivity, with more connections to the existing Metro A (Blue) and C (Green) lines.
- Future travel demand will be accommodated, including the high number of transit trips made by residents along the LPA.
- The densely populated neighborhoods, major employment centers, and other key regional destinations where future growth is forecasted to occur along the LPA will have improved access.

The LPA will have impacts on local businesses as local traffic patterns are changed, patronage to new stations is introduced, and the off-street and on-street parking in the corridor changes (the result of reductions from implementation of the LPA, along with focused increases of dedicated transit parking at five stations: Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station). Even with the new station parking facilities, the changes introduced by the LPA could result in a loss of overall parking for some businesses (refer to the *West Santa Ana Branch Transit Corridor Project Final Transportation Impact Analysis Report* [Metro 2024s] and Section 3.4.4 of Chapter 3, Transportation, of this Final EIS/EIR) and could impact mobility and connectivity. Some businesses may experience a loss in revenue if potential customers are discouraged from patronizing the business because of real or perceived inconvenience. The implementation of Mitigation Measure TRA-20 (Parking Mitigation Program [Permanent]) will reclaim some of the lost parking for customers, which could reduce adverse effects of lost revenue (refer to Section 3.5.2.4 of Chapter 3, Transportation, of this Final EIS/EIR for a summary of the mitigation measure).

Other factors may positively affect business revenues, including increased exposure to customers in and around the station areas or higher visibility along the alignment.

Impacts on Local Tax Bases

Sales taxes provide revenues to the general fund for all cities in the Affected Area for economics. The LPA will impact local businesses as local traffic patterns change, patronage to new stations is introduced, and the off-street and on-street parking along the LPA changes. Some businesses may experience a loss in revenue if potential customers are discouraged from patronizing the businesses because of both real and perceived inconvenience factors, such as roadway modifications or delays associated with at-grade crossings. However, motorists will likely adapt to the changes in traffic circulation, and transit riders may

frequent businesses near the station, reducing overall impacts on retail sales to negligible levels. Businesses that are destination trips, such as shopping centers or automobile sales, make them more resilient to changes in the roadway network.

Some factors may also positively affect business revenues, including increased exposure to customers in and around the station area, higher visibility along the light rail alignment, or changes to local and global economic conditions. The LPA will also result in additional access to businesses along the corridor to customers who do not drive, providing a source of increases retails sales during operations.

For the LPA, Metro will need to acquire residential and commercial properties, as well as property owned by local cities and other government agencies. Parcels are either full acquisitions, partial acquisitions, permanent easements, or public agency right-of-way. Property owned by public agencies is tax exempt and therefore does not generate property tax revenues. More details about the affected properties are provided in the *West Santa Ana Branch Transit Corridor Project Final Displacements and Acquisitions Impact Analysis Report* (Metro 2024m) and summarized in Section 4.3 (Acquisitions and Displacements) of this Final EIS/EIR. Acquisitions and displacements include properties affected as a result of design refinements.

When referring to the property tax impacts of acquisitions, the term "initial property tax impacts" is used because the extent of the long-term fiscal impact of the system is uncertain. Initially, property taxes will no longer be collected from full or partial acquisitions along the route. As a result, the rates charged remaining taxpayers will increase slightly to recover budgeted funds, or budgets for essential government services will be reduced accordingly.

Table 4.17.5 presents the initial property tax impact estimates by city for the LPA. The property tax impact presented in this section focuses on the impact to each city's general fund collections. The tax effects of the LPA are estimated to be a decrease of between approximately 0.0 and 1.4 percent of the budgeted general fund property tax collections in 2018 for affected cities.

Between 7 to 46 percent of the tax revenues collected by affected cities are from property taxes (Table 4.17.2). The remaining revenues come from other tax sources (for example, sales and use, business and occupation, utility, and other). Similar to property tax impacts, the long-run tax impacts to local jurisdictions from these other taxes are uncertain and depend on whether displaced businesses relocate within the same community. Businesses unable or unwilling to relocate within the same community will represent a loss of revenues to the local jurisdiction. These types of losses will be offset to the extent that business activity increases and/or new businesses are attracted to the area. In addition to funding local jurisdiction programs, total property tax levies include funds collected for consolidated county taxes, fire prevention, libraries, schools, and other services. Based on the design of the LPA as evaluated in this Final EIS/EIR, the initial property tax impacts from acquisitions are, in most cases, less than 0.8 percent of the total general fund property tax revenues collected by cities in the LPA alignment. Huntington Park is projected to have the highest relative impact to property tax collections on a percentage basis. However, total property tax revenues only represent 6 percent of total general fund revenues for the city. Thus, the effect of the initial property tax impact is expected to be minimal. Refer to Section 4.3 (Acquisitions and Displacements) for a summary of displacements and relocations associated with the LPA.

Table 4.17.5. Initial Property Tax Impact by City

City	2018 Property Tax Revenue	Initial Property Tax Impacts	Potential Impact to General Fund Revenues
Los Angeles	$2,058,761,000	$9,881	0.00%
Vernon	$17,270,355	$254	0.00%
Huntington Park	$1,170,311	$16,199	1.38%
Bell	$4,411,848	$19	0.00%
Cudahy	$265,030	$0	0.00%
South Gate	$12,314,651	$65,870	0.53%
Downey	$25,996,994	$1,137	0.00%
Paramount	$2,265,000	$18.498	0.82%
Bellflower	$11,032,000	$4,315	0.04%
Artesia	$2,444,466	$15,119	0.62%
Cerritos	$3,125,000	$75	0.00%

Sources: Metro 2024m; LA County 2019b

As discussed in the Long-Term Impacts on Property Values Section, many communities along the LPA have plans for TOD near stations. However, this development will be subject to approval by the city and to all applicable requirements and regulations of the affected city. This will result in new construction, which is added to the jurisdiction's tax base, thus increasing the revenue available to a jurisdiction for essential government services. Thus, the long-term property tax impacts are uncertain but are likely to be lower than the initial property tax impacts. Therefore, under NEPA, the LPA will not result in adverse effects related to local tax bases. More details about the effect of the LPA on property taxes are provided in the Economic and Fiscal Impact Analysis Report.

Direct Employment Impacts from Displacements

Table 4.17.6 provides estimates of the numbers of businesses and employees located at properties that will be acquired for the LPA. The estimates were prepared based on field verification of addresses and business names obtained from the Displacements and Acquisitions Impact Analysis Report and summarized in Section 4.3 (Acquisitions and Displacements) of this Final EIS/EIR.

Table 4.17.6. Business and Employee Displacement – Locally Preferred Alternative

Alternative	Number of Businesses	Estimated Number of Employees
Locally Preferred Alternative	58	368

Source: Metro 2024m

The magnitude of the business displacement impact is described by comparing the number of employees displaced to total employment in the areas surrounding the LPA in Table 4.17.7. The second and third columns compare 2017 and 2042 employment forecasts for neighborhoods surrounding the Affected Area for economics. The estimates are based on SCAG regional projections. Data for the segments are defined as a collection of TAZs located within 0.25 mile of the rail line and 0.50 mile of stations. TAZs are the system used in travel demand forecasting. Columns four and five provide the cumulative annual average growth rate for each option and the implied number of employees added from 2017 to 2018, which is an estimate of one year's underlying growth in employment in the Affected Area for economics. The final column represents an estimate of the number of employees at businesses that will be displaced by the LPA.

Table 4.17.7. Relative Impact of Displaced Employees – Locally Preferred Alternative

Alternative	2017 Employment	2042 Employment	Cumulative Annual Growth		Employees (Jobs) Displaced
			Percent	Jobs	
Locally Preferred Alternative	37,937	46,430	0.8	332	368

Source: Metro 2024m
Notes: LPA = Locally Preferred Alternative; MSF = maintenance and storage facility

The projected employment growth from 2017 to 2042 in the Affected Area for economics is expected to be slightly less than the jobs displaced by the LPA. Employees in a variety of industrial businesses represent approximately 40 percent of potentially affected employment along the LPA. Other industries that are affected by the LPA include retail and automotive services.

According to the Displacements and Acquisition Impact Analysis Report, the supply of currently available replacement sites within a 6-mile radius is sufficient to relocate nearly all displaced businesses. Because Metro will provide relocation assistance to identified eligible displaced businesses and employees, it is likely that some of the displaced jobs will be relocated, not lost. However, some businesses may find it difficult to relocate to a new neighborhood and may decide to close or move farther away, resulting in the loss of jobs in the immediate area Additionally, some employees may find commuting to a relocated business expensive or inconvenient and decide not to relocate with their place of employment. Some displaced employees may be able to find new jobs through the relocation effort. Overall, the potential employment impacts from business displacements are not expected to be substantial. The potential for direct and induced employment associated with the LPA is also expected to add employment opportunities to the local and regional economy. Therefore, under NEPA, the LPA will not result in adverse effects related to displaced businesses as a result of the LPA.

4.17.3.3 Design Option: Close 186th Street

The LPA with the design option is substantially similar to the LPA without the design option with regard to property values, potential impacts, and effect determinations. The LPA with the design option only differs from the LPA without the design option in that the 187th Street at-grade crossing would be open and the 186th Street at-grade crossing would be closed. The LPA with the design option would result in traffic circulation modifications, and motorists are expected to adapt to these changes. No additional displacements would occur under the

LPA with the design option compared to the LPA without the design option. Job creation, property values, regional mobility and connectivity, impacts on local tax bases, and direct employment impacts to local tax bases would remain similar to the LPA without the design option. The operational effects are expected to be similar to the LPA without the design option, and there would not be an adverse effect on the economy.

4.17.3.4 Maintenance and Storage Facility

The MSF will provide additional employment opportunities in the region. The employment estimates discussed above for the LPA include new jobs during operations at the facility. The conclusions and effect determinations provided for the LPA will also be applicable to the MSF.

The MSF site will be on a property owned by the City of Bellflower and leased to the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX. Given that this property is owned by the City of Bellflower, it is exempt from paying property taxes. Therefore, under NEPA, the MSF will not result in adverse effects related to property tax impacts.

The MSF will displace a business (Hollywood Sports Paintball & Airsoft Park and Bellflower BMX) and approximately 75 employees. Some perspective on the relative magnitude of the business displacement impacts can be gained by comparing the number of employees displaced to total employment in the areas surrounding the LPA alignment. The MSF is estimated to displace fewer employees than are projected to be added in the first year in the project area (Table 4.17.8). The number of employees displaced is about 0.2 percent of total employment in the Affected Area for economics based on 2017 estimates.

Table 4.17.8. Relative Impact of Displaced Employees – Maintenance and Storage Facility

MSF	2017 Employment	2042 Employment	Cumulative Annual Growth		Employees Displaced By MSF
			Percent	Jobs	
Bellflower	37,937	46,230	0.8	332	75

Source: Metro 2024m
Note: MSF = maintenance and storage facility

Because Metro will provide relocation assistance to identified eligible displaced businesses and employees, it is likely that some of the displaced jobs will be relocated, not lost. However, some businesses, such as the sports park, may find it difficult to relocate to a new neighborhood and may decide to close, resulting in the loss of jobs in the immediate area. Overall, the potential employment impacts from business displacements will not be substantial. Therefore, under NEPA, the MSF will not result in adverse effects related to employment in the region.

Land uses surrounding the site include single-family and multifamily residential, industrial and commercial, and recreational. The MSF will not involve any roadway/intersection closures or turning restrictions that will restrict access to nearby residential communities. There are no noise impacts associated with the MSF. Nuisance impacts related to access restrictions or noise are not expected to result in adverse effects on property values.

4.17.3.5 U.S. Army Corps of Engineers Facilities

Economic and fiscal impacts are not relevant to USACE facilities.

4.17.4 Project Measures and Mitigation Measures

No project or mitigation measures will be required for the LPA, including the design option and MSF.

4.17.5 California Environmental Quality Act Determination

The CEQA determination presented in the following section is based on a comparison of the existing conditions described in Section 4.17.2 and the environmental impacts analysis presented in Section 4.17.3. The following sections are applicable to the Affected Area for economics, the LPA, the design option, and the MSF.

Under CEQA, economic changes resulting from a project are not to be treated as significant effects on the environment unless the economic change(s) are used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic effects on people, those adverse effects may be used as a factor to determine whether the physical change is significant (CEQA § 15064).

While CEQA does not specify economic thresholds to be analyzed, the following question is presented as relevant to economic issues to be considered under *CEQA Guidelines* and to determine if significant impacts will result from implementation of the LPA.

4.17.5.1 Threshold ECON-1: Would the project result in substantial impacts to regional mobility and connectivity?

No Project Alternative

Under the No Project Alternative, the LPA would not be introduced, thereby resulting in no changes to the Affected Area for economics regarding regional mobility and connectivity. Residents, employees, and visitors in the Affected Area for economics would not have the benefit of the interconnected transportation network provided by the LPA. However, the absence of these potential benefits does not rise to the level of, nor constitute, a significant impact. Therefore, operation-related impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

As discussed in Section 4.17.3.2, operation of the LPA will have beneficial economic and fiscal impacts by improving transit accessibility and mobility, enhancing regional connectivity, and reducing travel time and costs in the region. These improvements will likely encourage greater economic activity and will benefit businesses and commuting employees. No impacts to regional mobility or connectivity are anticipated.

Operation of the LPA will have beneficial economic and fiscal impacts by improving transit accessibility and mobility, enhancing regional connectivity, and reducing travel time and costs in the region. The LPA will provide additional access and connections to the larger regional network. This will likely encourage greater economic activity and will benefit businesses and commuting employees. The potential for transit-oriented development will provide opportunities for utilization of properties and structures and lessen the likelihood of urban decay. The operation of the LPA will also increase employment and tax revenue, which will benefit local and regional economies. Therefore, operation-related impacts will be beneficial, resulting in less than significant impacts, and mitigation will not be required.

Design Option: Close 186th Street

The LPA with the design option is substantially similar to the LPA without the design option with regard to improved transit accessibility, enhanced mobility and regional connectivity, and reduced travel times. Operation-related impacts would be beneficial, resulting in a less than significant impact.

Maintenance and Storage Facility Site

The MSF is a critical component of the LPA and therefore will support the improvements to regional connectivity or mobility provided by the LPA. Impacts will be less than significant and no mitigation will be required.

4.18 Safety and Security

This section summarizes the existing safety and security measures used by Metro in the Affected Area for safety and security and considers the effects on safety and security from operation of the LPA, with and without the design option, and the MSF. System safety refers to the prevention of accidents to transit passengers, employees, or others present at or adjacent to Metro transit facilities, which include stations, tracks, pedestrian walkways, TPSSs, and trains. Security relates to protection of people from intentional acts that could result in injury or harm, and protection of property from deliberate acts of vandalism. This includes crime prevention, law enforcement, and protection against terrorism.

Additional detail on safety and security is provided in the *West Santa Ana Branch Transit Corridor Project Final Safety and Security Impact Analysis Report* (Metro 2024c).

This section has been revised since the Draft EIS/EIR based on comments received and to reflect identification of the LPA, inclusive of refinements. In Section 4.18.3.2, additional information was added to "Motorist, Pedestrian, and Bicyclist Safety" to include FHWA's Proven Safety Countermeasures data. In addition, new discussions about the Metro Customer Code of Conduct regarding littering and dumping; Metro's graffiti removal program; procurement of regular maintenance and clean-up services; and Metro's Rail Custodial Services, including emergency cleaning response services, were added to Section 4.18.3.2 under "Security and Prevention of Crime and Terrorism." Text edits were also made to this section since the Draft EIS/EIR to better clarify design and operation of the LPA and incorporate the latest plans of the City of Paramount's bike path project. The impact conclusions presented in the Draft EIS/EIR regarding safety and security remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

4.18.1 Regulatory Setting and Methodology

4.18.1.1 Regulatory Setting

Federal

The following federal regulations regarding safety and security are applicable to the LPA:

- Public Transportation Agency Safety Plan (49 CFR, Part 673)
- CFR Title 28, Part 36, Americans with Disabilities Act

State

In California, the CPUC has been identified as the state safety oversight agency. The following CPUC General Orders (GOs) regarding safety and security are applicable to the LPA:

- GO 88-B
- GO 164-E
- GO 143-B

Safety and security regulations from the CCR, CBC, and Caltrans are also applicable to the LPA.

Regional

Metro is responsible for compliance with all FTA and CPUC regulations governing the safe operation of its transit systems, both for patrons and employees. The following Metro safety and security policies are applicable to the LPA:

- Metro Grade Crossing Policy for Light Rail Transit (Metro 2010a)
- Metro Emergency Response Plan Policy (Metro 2010b)
- Metro Rail Design Criteria (Metro 2020h)
- Metro Fire/Life Safety Design Criteria (Metro 2010d)
- Homeless Task Force

In addition to Metro, the LACDPW *Standard Plans Manual* (LACDPW 2000) applies to design improvements within County right-of-way. The *Los Angeles County 2035 General Plan* (Los Angeles County Department of Regional Planning 2015) includes policies that affect police and fire services in the Affected Area for emergency service.

Local

The LPA traverses the following 12 local jurisdictions (listed from north to south):

- Los Angeles
- Unincorporated Florence-Firestone community of Los Angeles County
- Huntington Park
- Vernon
- Bell
- Cudahy
- South Gate
- Downey
- Paramount
- Bellflower
- Artesia
- Cerritos

Relevant General Plan policies and objectives within each jurisdiction are identified in Table 3.1, General Plan Goals and Policies Relating to Safety and Security, in the Safety and Security Impact Analysis Report.

Other

The following fire services regulations will be applicable to the LPA:

- Uniform Fire Code
- National Fire Protection Association

4.18.1.2 Methodology

NEPA requires that the federal government use all practicable means for Americans to have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S.C. 4331(b)(2)). NEPA does not include specific guidance or direction with respect to evaluating alternatives and relative effects of alternatives on public safety and security. The NEPA analysis considers potential adverse environmental impacts, including whether a project or a design option would result in unacceptable safety, security, or operational problems.

Similarly, one aim of CEQA is that the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions. Appendix G of the *CEQA Guidelines* (14 CCR, Section 15000 et seq.), suggests agencies consider whether a project will substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses or whether the project would result in inadequate emergency access. The Appendix G *CEQA Guidelines* are included in Section 4.18.5.

For purposes of the qualitative assessment for safety and security, the Affected Area for safety and security is defined as the area within 100 feet of the LPA and its components (e.g., TPSSs). The Affected Area for safety and security was determined based on the safety of users and crime prevention within the immediately adjacent area of the LPA. The Affected Area for emergency response services is defined as the area within 2 miles of the LPA to capture the service areas of local hospital, fire, and police services. The Affected Area for emergency service was determined based on the service area of hospital, fire, and police services. The following elements were considered in the qualitative analysis within the Affected Area for safety and security: current safety and security conditions as they relate to pedestrians, bicyclists, LRT passengers and employees; existing emergency services (police, fire, and ambulance); available crime and security statistics; and other relevant data for the Affected Area. For each element within the Affected Area for safety and security, the analysis evaluated compliance with regulations and policies, the existing conditions, and design features and project measures to determine the environmental impacts and mitigation measures.

4.18.2 Affected Environment/Existing Conditions

4.18.2.1 Transit System Safety

For the safety of passengers and the public, Metro operates all transit-related vehicles according to the guidelines established by the CPUC. Regulations established by the CPUC for light rail vehicles (LRVs) include requirements for rearview mirrors, audible warning devices, and grab handles for standing passengers. The CPUC also regulates LRV braking, lighting, and operating speeds (GO 143-B). As a result of compliance with these regulations, Metro has a proven track record in safety, with only two derailments for over 120 million vehicle revenue miles since 2008, according to the National Transit Database (2017). Additionally, Metro has established a variety of programs to inform rail users and nonusers alike about proper safety precautions around operating transit vehicles and transit stations.

4.18.2.2 Pedestrian, Bicyclist, and Motorist Safety

The pedestrian circulation system within the Affected Area for safety and security consists of sidewalks, crosswalks, street lighting, and street furniture. The pedestrian circulation system is generally well developed and complete, serving the surrounding land uses. The majority of the intersections are signalized and have crosswalks with pedestrian indicators and push-button activation for pedestrian phases. Most intersections in the Affected Area for safety and security allow pedestrian crossings along all four sides.

Metro is continually working to improve vehicular and pedestrian safety along its current rail lines and has implemented several programs (such as the Rail Safety Orientation Tour Program and the Rail Safety Education Program) to educate rail users and nonusers about safety precautions near transit vehicles and facilities. The latest statistics for accidents between trains/automobiles and trains/pedestrians for Metro's rail lines during the four quarters of Fiscal Year 2020 are presented in Table 4.18.1.

Table 4.18.1. Metro Rail Line Fiscal Year 2020 Train/Vehicle and Train/Pedestrian Accidents

Metro Rail Line	FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4
A (Blue) Line	2	7	0	0
B/D (Red/Purple) Line	0	0	0	0
C (Green) Line	0	0	0	0
L (Gold) Line	2	1	0	0
E (Expo) Line	4	5	0	0

Source: Metro 2024c
Note: FY = fiscal year; Q = quarter

4.18.2.3 Security

The affected environment with respect to security involves the existing bus and rail system, including stations, vehicles, and ancillary facilities, and the areas in the immediate vicinity of those facilities. Passengers, transit employees, vendors, contractors, and members of the general public who come in contact with the system, as well as transit property and equipment, would be susceptible to the same crimes they might experience in the surrounding neighborhoods. Metro implements internal security features for its bus and rail system, including closed-circuit television (CCTV) cameras, emergency call boxes, fully lighted station stops, bicycle parking, and transit parking areas. These features, which are on the trains and buses or at the rail stations, are designed to offer security and a sense of personal well-being for patrons and passengers.

4.18.2.4 Freight Railroad

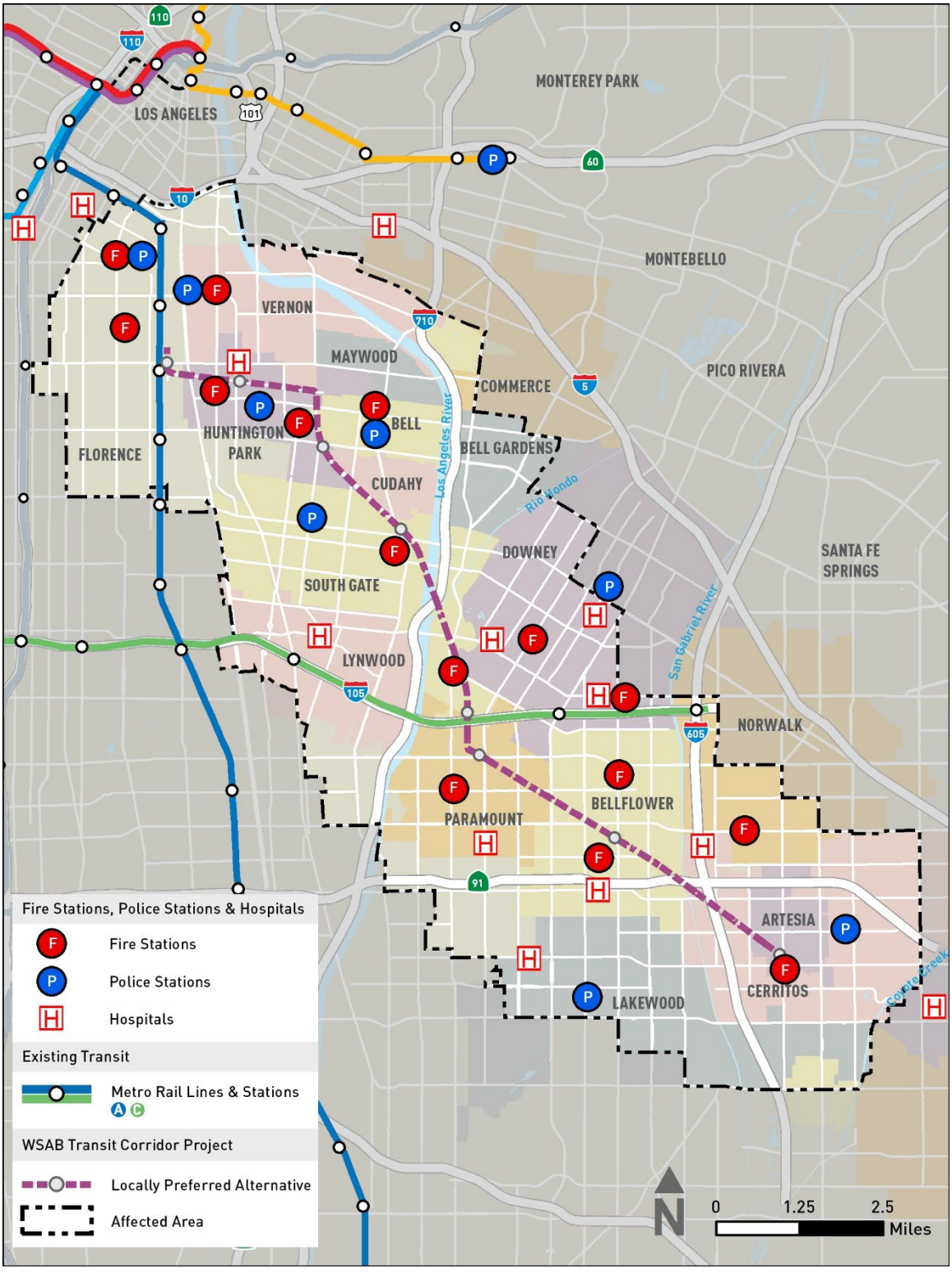
Several subdivisions and branches of existing railroads with active freight operations are within the Affected Area for safety and security; some would share ROW with the LPA. The FRA defines shared ROW as two or more rail services operating on separate parallel tracks having track centerline separation of less than 30 feet. Separation of 30 feet or less triggers the application of certain FRA safety regulations. The LPA will share ROW with freight along

the Wilmington Branch, La Habra Branch, San Pedro Subdivision, and PEROW corridors, as shown in Figure 3-9 in Chapter 3, Transportation, of this Final EIS/EIR.

4.18.2.5 Fire Protection

Various fire departments provide fire and emergency response services throughout the Affected Area for emergency service. These fire departments, including the Los Angeles Fire Department, the Los Angeles County Fire Department, Vernon Fire Department, and Downey Fire Department, will provide first response in case of an accident. Figure 4.18-1 shows fire stations within the Affected Area for emergency service. Additional details on the existing fire protection services within the Affected Area for emergency service are provided in the Safety and Security Impact Analysis Report.

Figure 4.18-1. Fire Stations, Police Stations, and Hospitals within the Affected Area for Emergency Service



Source: Metro 2023

4.18.2.6 Police Protection

The Los Angeles County Sheriff's Department (LACSD) Transit Services Bureau (TSB), the Los Angeles Police Department (LAPD), and the Long Beach Police Department (LBPD) provide contract police services to Metro. Deputies provide police services for the heavy rail, light rail, and bus transportation systems throughout Metro's 1,433-square-mile service area. The TSB, LAPD, and LBPD provide security patrols for the Metro LRT system. TSB personnel are also deployed for fare compliance and patrolled security for fixed assets. Figure 4.18-1 shows the locations of police stations within the Affected Area for emergency service. Additional details on the existing police and security services within the Affected Area for emergency service are provided in the Safety and Security Impact Analysis Report.

4.18.2.7 Emergency Medical Services

A number of hospitals currently serving the Affected Area provide emergency service. These hospitals are available to assist in the event that emergency medical response services are needed. The locations of the hospitals are shown on Figure 4.18-1. Additional details on the existing emergency medical services within the Affected Area for emergency service are provided in the Safety and Security Impact Analysis Report.

4.18.3 Environmental Consequences/Environmental Impacts

This section summarizes the environmental impacts of the No Build Alternative and the LPA as they relate to safety and security and the methodology used to evaluate these impacts. More details about the LPA's effects on safety and security are included in the Safety and Security Impact Analysis Report.

4.18.3.1 No Build Alternative

As discussed in Section 2.5.1 of Chapter 2, Project Description/Alternatives Considered, of this Final EIS/EIR, the No Build Alternative includes capital transportation improvements and/or transit and highway operational enhancements in the Affected Area for both safety and security, as well as emergency services, that are reasonably foreseeable. These include Metro service features that currently exist or projects that have been explicitly committed for buildout by the year 2042. Implementation of these projects, including operations and maintenance, would be subject to the regulatory standards, conditions, and permitting requirements discussed in Section 4.18.1 (e.g., FTA, FRA, CPUC, MRDC; Metro 2020h]). Compliance with these standards would minimize impacts on safety and security. Impacts, if any, are expected to be minor and not adverse. Maintenance and operation of the projects included in the No Build Alternative would be subject to environmental clearance.

4.18.3.2 Locally Preferred Alternative

Transit and Freight System Safety

Transit system safety focuses on identifying, eliminating, and/or controlling safety hazards related to the systems and equipment, including signaling, traction power, overhead catenary system, stations, alignment, track, and communication associated with the LPA. The potential for safety hazards such as collisions, service interruption, property damage, injuries, or fatalities may occur as a result of the malfunction or misuse of these systems and equipment.

The LPA will be designed and constructed in accordance with the referenced regulations, standards, and policies identified in Section 4.18.1. All facilities and equipment will be designed to provide for the safety and security of passengers and employees. The following will be implemented to identify and minimize safety hazards during preliminary engineering and final design of the LPA:

- Safety and Security Certification Plan
- System Safety Program Plan
- Threat and Vulnerability Assessment (TVA)
- Preliminary Hazard Analysis (PHA)
- Establishment of a Fire/Life Safety Committee to meet with the design team and review fire protection measures and requirements, and other safety hazards

Metro has established operating procedures in the case of a seismic event during operation. The LPA will meet the required structural design standards and building codes to minimize the potential hazards of a seismic event.

With implementation of these plans, assessments, and committee, the LPA will be designed such that there will not be adverse transit system safety impacts during revenue service operations. The LPA will be operated in accordance with Metro system safety plans, policies, and procedures or equivalent, such as the Metro System Safety Program Plan, the Metro System Security Plan, the Metro Standard and Emergency Operating Procedures, and the Metro Rail Operating Rulebook.

The LPA will operate in approximately 9.8 miles of shared ROW with freight operations along the following corridors:

- Wilmington Branch: Approximately 0.3 mile of shared ROW with freight operations
- La Habra Branch: Approximately 2.3 miles of shared ROW with freight operations
- San Pedro Subdivision: Approximately 6.1 miles of shared ROW with freight operations
- PEROW: Approximately 1.2 miles of shared ROW with freight operations

Both the Wilmington Branch and the La Habra Branch are owned and operated by UPRR. The San Pedro Subdivision is owned by the Ports of Los Angeles and Long Beach and operated by UPRR. The PEROW is owned by Metro, but a short segment between the San Pedro Subdivision and Somerset Boulevard is operated by UPRR to serve the World Energy facility. The LPA will operate separately from the freight tracks associated with the World Energy oil refinery tracks in Paramount. At the facility, after going over Downey Avenue in an aerial configuration, the LPA will be elevated on a retained fill wall with a fence on top that will separate the LRT tracks from the freight tracks associated with the refinery. Where the LRT tracks are at grade in proximity to the facility, a fence will separate the LRT tracks from the freight tracks. Tracks will not be shared, and minimum distances will be maintained from flammable equipment and materials. The overhead catenary system poles will be located approximately 27 feet from the nearest storage track and more than 80 feet from the ROW boundary of the World Energy facility.

Shared ROW with freight operations will introduce the potential for a derailment or a collision between the trains that could cause service interruptions, equipment damage, and/or harm to passengers and employees. This situation currently exists on the Metro A

(Blue) Line along the Wilmington Branch where it shares ROW with freight operations. To date, there has not been any collisions between the Metro A (Blue) Line and freight operations.

To avoid derailments, the LPA will be designed in accordance with FRA and Metro standards and criteria, and may include the following:

- Appropriate track spacing distance between freight and the LPA
- Protective fencing and barriers installed where appropriate
- An intrusion detection system to detect an intrusion into the ROW
- Communication protocols established between the railroad and Metro to quickly respond to derailment emergencies
- Emergency responder training and drills to respond to derailment emergencies

As part of the project development process and pursuant to the requirements of FTA Circular 5800.1 – Safety and Security Management Guidance for Major Capital Projects, Metro will conduct a PHA and TVA and create a Fire/Life Safety committee. The TVA and the committee will review the LPA and verify countermeasures to increase safety and reduce the potential of collisions during subsequent design phases.

While these safety features and processes will minimize impacts, an adverse effect will still occur due to the potential for derailment and collision. Under NEPA, the LPA will result in adverse effects related to safety and security prior to the implementation of Mitigation Measure SAF-1 (Encroachment Detection) (see Section 4.18.4), which will detect potential derailments that may occur on Metro ROW. With implementation of this mitigation measure, impacts will be minimized and there will not be an adverse effect on the safety of passengers, employees, and the public from the shared ROW with freight operation. After implementation of Mitigation Measure SAF-1 (Encroachment Detection) (see Section 4.18.4), the LPA will not result in adverse effects related to safety and security.

Motorist, Pedestrian, and Bicyclist Safety

At-grade crossings of the LPA will introduce the potential for collisions and potential hazards to motorist safety. The LPA will include 30 LRT at-grade crossings, which will introduce the potential for conflicts between LRVs and motor vehicles. The potential for impacts will be minimized because the LPA will follow the standards in the Manual of Uniform Traffic Control Devices (MUTCD), observe all applicable traffic laws, implement and follow CPUC and local safety requirements, and incorporate design features such as signs and markings, flashing light signals, gates and traffic-control signals, pathway grade crossings, illumination, and safety barriers. There will be no adverse effects related to motorist safety and collisions, and mitigation measures are not required.

Pedestrian and bicycle safety during operation of the LPA will consider safety along the alignment, at station locations, at designated crossings, and at proposed parking facilities. Pedestrian safety issues will mostly apply to proposed at-grade stations and less to the proposed aerial LRT facilities, as aerial stations can be designed to avoid these concerns. Additionally, the aerial stations will avoid potential conflicts between pedestrians/bicyclists and motor vehicles that may occur with the at-grade stations.

Consistent with the design in the Draft EIS/EIR, in Artesia, the LPA will permanently close vehicle and pedestrian access along 188th Street between Corby Avenue and Pioneer Boulevard for the Pioneer Station parking structure. The closure of 188th Street will have no impact on safety because pathways via Corby Avenue and the Pioneer Station walkway between the station platform and parking structure will continue to be safe and accessible.

The LPA will be operated in accordance with Metro system safety plans, policies, and procedures and will provide for the safety of those riding within the LRV and for pedestrians and bicyclists along the guideway and at stations. Pedestrian and bicycle safety is prioritized through Metro's *Grade Crossing Policy for Light Rail Transit* (2010a), providing a method for determining whether proposed grade crossings should be grade-separated or at-grade. The review process begins with an initial screening during the feasibility study, which initially categorizes roadway crossings into "at-grade should be feasible," "possible at-grade operation," and "grade separation usually required." The initial analysis has been completed, and further information on the grade crossing analysis can be found in the *West Santa Ana Branch Grade Crossing Analysis Step 1 Technical Report* (Metro 2017i). In addition, in compliance with CPUC regulations (CPUC GOs 88-B and 164-D), Metro will prepare and submit grade crossing design applications and conduct grade crossing diagnostics. Based on the CPUC review of grade crossing applications and diagnostics, additional safety and security design features will be incorporated, if necessary.

In addition, many at-grade locations will incorporate safety features, including the following, that are identified by the FHWA as Proven Safety Countermeasures:

- Medians and pedestrian refuge islands (up to 56 percent reduction in pedestrian crashes) (FHWA 2008)
- Flashing lights (up to 47 percent reduction in pedestrian crashes) (National Academies of Science, Engineering, and Medicine 2017)

Although the grade crossing analysis will determine the grade separations, there will be no changes to the determination of safety impacts for both the at-grade and grade-separated crossings. LRT systems operate safely and successfully in both at-grade and grade-separated configurations in cities across California and North America.

As part of SAF PM-7 (Station Access), the LPA will include modifications to provide safe and ADA-accessible access for pedestrians and bicyclists to and from the stations. The LPA will also operate in conjunction with Metro's First/Last Mile Strategic Plan (2014b), which incorporates pedestrian and bicycle safety improvements. Examples of first/last mile safety improvements include bicycle lanes, sidewalks, crosswalks, signage and wayfinding, and information and technology that ease travel.

The LPA will follow Metro's latest Rail Operating Rulebook and CPUC regulations, which allow LRV operators to use audible warning devices to alert pedestrians and bicyclists that an LRV is approaching. Pedestrian and bicycle traffic control and channelization techniques (e.g., crossing gates and ROW barriers) will be used to direct pedestrian and bicycle movements at at-grade crossings and to encourage the use of designated crossings. Signage will be posted at these locations to provide safety information and awareness.

The LPA will comply with all applicable regulations and the MRDC or equivalent. In addition, the PHA and TVA will be prepared during the preliminary engineering and final design stages of the LPA to verify hazards and features for enhanced pedestrian and bicyclist safety, such as pavement markings and signs. The analysis will verify illumination levels and sight distance improvements, as necessary. This analysis is required by FTA and SAF PM-5 (Certification and Approval).

Table 4.18.2 provides a qualitative evaluation of safety and security conditions for pedestrians and bicyclists. Elements evaluated include traffic safety, access/accessibility, sight visibility, lighting, and urban design, and considers both the existing conditions of the Affected Area for safety and security and the proposed project features. Each element was given a rating of either "Poor," "Fair," or "Good," and a rating of "N/A" was given for any element not applicable for any of the specific segments evaluated. A "Poor" rating is defined as a higher risk safety and security condition and should consider potential improvements. A "Fair" rating is defined as an adequate safety and security condition, where potential improvements could be considered, as needed. A "Good" rating is defined as a low risk safety and security condition, where no improvements are needed for pedestrian and bicyclist safety.

Pedestrian and bicycle safety conditions within and near parking facilities will be similar to those at station locations because of the potential for a large congregation of pedestrians during the AM and PM peak travel periods. Table 4.18.3 summarizes the station parking facilities and the potential impacts.

The assessment identified station and guideway locations as "Good" and Fair" and will not result in adverse effects. The assessment considered analyses from the *West Santa Ana Branch Transit Corridor Project Transportation Impact Analysis Report* (Metro 2024s) and *West Santa Ana Branch Transit Corridor Project Urban Design Report* (Metro 2019).

Based on this analysis, the LPA will provide a safe and secure environment for Metro patrons, pedestrians, and bicyclists. For further details on the information presented, refer to the Safety and Security Impact Analysis Report.

To minimize potential hazards, traffic-control improvements and wayfinding features (e.g., signage, pavement markings) will be implemented to provide safe passage at station parking facilities and reduce potential conflicts between vehicles and pedestrians/bicyclists at all stations with parking facilities or interfaces with bicycle paths. In addition, Metro will continue to coordinate with the City of Paramount regarding the proposed multi-use trail near the Paramount/Rosecrans Station to promote a safe interface between pedestrians crossing the trail and users of the multi-use trail. Under NEPA, the LPA will not result in adverse effects related to safety and security, and mitigation will not be required.

Table 4.18.2. Summary of Pedestrians and Bicyclists Safety Assessment for the LPA

Jurisdiction	Segment	Type	Configuration	Traffic Safety	Access/ Accessibility	Sight Visibility	Lighting	Urban Design
Unincorporated LA County	Slauson/A Line	Station	Aerial	**FAIR** Future Rail to Rail project will enhance traffic safety	**FAIR** Future Rail to Rail project will enhance traffic safety	**GOOD** No issues	**FAIR** Area is adequately lit	**FAIR** Industrial setting; future Rail to Rail project will enhance urban design
Unincorporated LA County, Huntington Park	Slauson/A Line to Pacific/Randolph	Guideway	Aerial, At-Grade	**GOOD** Travel lane reduction and crosswalk improvements	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Huntington Park	Pacific/Randolph	Station	At-Grade	**GOOD** Travel lane reduction and crosswalk improvements	**GOOD** Sidewalk and curb ramp improvement	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Huntington Park, Bell	Pacific/Randolph to Florence/Salt Lake	Guideway	At-Grade, Aerial	**GOOD** Travel lane reduction and crosswalk improvements	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Huntington Park	Florence/Salt Lake	Station	At-Grade	**GOOD** Signalized intersection with crosswalk improvements	**GOOD** Sidewalk and curb ramp improvements	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues

Jurisdiction	Segment	Type	Configuration	Traffic Safety	Access/ Accessibility	Sight Visibility	Lighting	Urban Design
Huntington Park, Cudahy, South Gate	Florence/Salt Lake to Firestone	Guideway	At-Grade, Aerial	**GOOD** Crossing gates and existing signalized intersections with crosswalk	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
South Gate	Firestone **[P]**	Station	Aerial	**FAIR** Crossing gates and existing signalized intersections with crosswalk with new driveway	**FAIR** Sidewalk and curb ramps at specific locations	**FAIR** Station is located behind several buildings, but sight visibility is adequate from aerial station	**FAIR** LPA provides lighting	**FAIR** Industrial with no issues
South Gate, Downey	Firestone to Gardendale	Guideway	Aerial, At-Grade	**GOOD** Crossing gates and existing signalized intersections with crosswalk	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Downey	Gardendale	Station	At-Grade	**GOOD** Signalized intersection with crosswalk improvements	**GOOD** Sidewalk and curb ramp improvement	**GOOD** No issues	**GOOD** LPA provides lighting	**FAIR** Industrial with no issues
Downey, South Gate	Gardendale to I-105/ C Line	Guideway	At-Grade	**GOOD** Crossing gates and existing signalized intersections with crosswalk	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**FAIR** Industrial with no issues

Jurisdiction	Segment	Type	Configuration	Traffic Safety	Access/ Accessibility	Sight Visibility	Lighting	Urban Design
South Gate	I-105/C Line **[P]**	Station	At-Grade	**GOOD** Crossing gates and crosswalk	**GOOD** Curb ramps, pedestrian walkway from C Line station, direct access from parking facility	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and industrial with no issues
South Gate, Paramount	I-105/C Line to Paramount/Rosecrans	Guideway	At-Grade, Aerial	N/A	N/A	N/A	N/A	**GOOD** Residential and industrial with no issues
Paramount	Paramount/Rosecrans **[P]**	Station	Aerial	**GOOD** Existing signalized intersections with crosswalks	**GOOD** Direct access from parking facility	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Paramount, Bellflower	Paramount/Rosecrans to Bellflower	Guideway	Aerial, At-Grade	**GOOD** Crossing gates and existing signalized intersections with crosswalk	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Bellflower	Bellflower **[P]**	Station	At-Grade	**GOOD** Crossing gates and existing signalized intersections with crosswalks	**GOOD** New curb ramps	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues

Jurisdiction	Segment	Type	Configuration	Traffic Safety	Access/ Accessibility	Sight Visibility	Lighting	Urban Design
Bellflower, Cerritos, Artesia	Bellflower to Pioneer	Guideway	At-Grade, Aerial	**GOOD** Crossing gates and existing signalized intersections with crosswalks	N/A	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues
Artesia	Pioneer **[P]**	Station	At-Grade	**GOOD** Crossing gates and existing signalized intersections with crosswalks	**GOOD** Direct access from parking facility	**GOOD** No issues	**GOOD** Area is well-lit	**GOOD** Residential and commercial with no issues

Source: Metro 2023
Note: N/A = not applicable; LPA = Locally Preferred Alternative; [P] = Stations with Parking

Table 4.18.3. Safety Summary for Proposed Parking Facilities

Parking Facility	Location	Proposed Parking Spaces	Parking Facility Safety Description	Potential Issues	Design Features
Firestone Station	South Gate	600 parking spaces	Parking facility will have direct connection to station.	▪ Potential for pedestrian and freight interface accessing the station on the southwest side of the station from Atlantic Avenue.	▪ Pedestrian access from the parking lot will not cross tracks and will be at grade to reach the elevators, escalators, and stairs beneath the station platform.
I-105/C Line Station	South Gate	340-360 parking spaces	Path of travel for passengers transferring between C (Green) Line and the LPA will require pedestrian movement and crossing Century Boulevard. Total distance of travel will be approximately 0.2 mile.	▪ Potential for pedestrian and automobile interface accessing the station as pedestrians cross Century Boulevard.	▪ Park-and-ride design has been revised since the Draft EIS/EIR to avoid pedestrians crossing freight tracks. ▪ Controlled pedestrian crossing gates with warning lights and signs, crosswalks, and signage at the Century Boulevard at-grade crossing separating the two stations for the C (Green) Line and the LPA.
Paramount/ Rosecrans Station	Paramount	490 parking spaces	Parking facility has direct connection to station. Direct connection path of travel from the parking facility to the station will require movement of pedestrians underneath transmission towers or via sidewalk along Paramount Boulevard.	▪ Potential for pedestrian and bicyclist interface due to future bicycle path terminating near the southeast end of the station.	▪ Dedicated pedestrian walkway from parking facility to plaza level.
Bellflower Station	Bellflower	260 parking spaces	The path of travel will require crossing tracks to access station. Parking facility has direct connection to station.	▪ No safety issues.	▪ Pedestrian crossing with swing gates and warning signage.

Parking Facility	Location	Proposed Parking Spaces	Parking Facility Safety Description	Potential Issues	Design Features
Pioneer Station	Artesia	1,100 parking spaces	Path of travel from the parking facility requires pedestrian movement along 187th Street or Pioneer Boulevard. Total distance of travel will be less than 0.1 mile.	▪ No safety issues.	▪ Pedestrian walkway from parking facility to sidewalk along 187th Street and Pioneer Boulevard. Includes pedestrian crossing gates and signage.

Source: Metro 2023

Emergency Response Services

Potential impacts on emergency response services will occur if the LPA were to interfere with local jurisdictions' emergency response plans or delay emergency service providers. Delays could occur as a result of gate downtimes at the at-grade crossings. Other potential impacts could include modifications to emergency preparedness and planning, changes in the ability to provide fast and efficient response to emergencies or disasters, and the broader ability to minimize risk to the safety and health of passengers, employees, and emergency response personnel.

Metro will coordinate with involved fire and police departments to address fire/life safety and security for the LPA alignment, parking facilities, and station areas within their respective jurisdictions. A comprehensive Emergency Preparedness Plan (EPP) that can be integrated with emergency service providers, local jurisdictional emergency response plans, and Metro's existing emergency procedures will be developed for operation of the LPA, as required by FTA. Metro, in coordination with local jurisdictions, will develop traffic management plans to reduce delays in response times for emergency service providers. Gate operations at grade crossings will be configured per CPUC standards as part of the LPA and the traffic mitigation measures.

The previously described coordination and operational requirements will minimize the potential impacts on emergency service providers and response times. Under NEPA, the LPA will not result in adverse effects related to safety and security, and mitigation will not be required.

Security and Prevention of Crime and Terrorism

Security relates to protection of people from intentional acts that could result in injury or harm, and protection of property from deliberate acts of vandalism. This includes crime prevention, law enforcement, and protection against terrorism. Terrorism is defined by the Homeland Security Act of 2002 as acts that are dangerous to human life or potentially destructive of critical infrastructure or key resources.

To help prevent crime and terrorist activity, Metro contracts with law enforcement personnel from LACSD, LAPD, and LBPD on the transit system during hours of operation (see Section 4.18.2.6). Metro and contracted law enforcement will employ an ongoing assessment of security at all station areas for appropriate redeployment of law enforcement and security services. In addition, Metro's TSB is deployed for fare compliance and patrolled security for fixed assets. The multi-agency law enforcement in the Metro system allows local jurisdictions to be positioned for active and timely response to emergency calls. Metro's policing contracts provide consistent and reliable staffing of approximately 314 law enforcement officers per 24-hour period. It also includes dedicated service and proactive security patrols and provides flexibility to enhance security as the Metro transit system expands to include the LPA.

In addition, the Metro Customer Code of Conduct, which states dumping is prohibited in, on, or in close proximity to Metro facilities and vehicles, will apply to the LPA. Littering or dumping is a Metro violation and can result in a monetary fine, ejection from Metro property, and exclusion for 90 days from Metro property. Metro also has a graffiti program that requires removing graffiti within 24 hours of when it is reported. Furthermore, the MRDC requires graffiti-resistant coating to furnishings and surfaces to prevent graffiti. Metro also procures regular maintenance and clean-up services, such as clearing trash and illegal dumping from Metro ROW, facilities, parking lots, and parcel properties, which will apply to the LPA. Metro Rail Custodial Services provides each station with cleaning services twice per day; these services include trash removal, sweeping, mopping elevators, odor

mitigation, and disinfecting escalator and staircase handrails, ticket machines, seating areas, and elevator buttons. Emergency cleaning response services are provided for materials and substances that can pose health and safety concerns for patrons. Supervisors are assigned to each line for dedicated coverage, including station inspections.

The LPA will be designed to include security features such as lighting, surveillance, CCTV, access control, and emergency call boxes to reduce the potential for crime and terrorist activity. The TVA conducted in compliance with FTA regulations will include a response and evacuation plan. Key provisions of the TVA will include the following:

- Identify various threat scenarios that may be applicable to the LPA's assets
- Provide a preliminary assessment of the consequences and possible effects resulting from credible criminal and terrorist threats
- Develop a prioritized risk assessment based on potential consequences and probability
- Verify countermeasures that are practical to implement and help improve transit system security

Security patrols, crime prevention through environmental design (CPTED), and compliance with FTA regulations will minimize potential security concerns associated with the identified threats. The LPA will be designed to address crime and terrorism. Under NEPA, the LPA will not result in adverse effects related to safety and security, and mitigation will not be required.

4.18.3.3 Design Option: Close 186th Street

Transit and Freight System Safety: The LPA with the design option is substantially similar to the LPA without the design option in regard to transit system safety conditions, potential impacts, and effect determinations because the LPA with the design option would maintain the same number of at-grade crossings as the LPA without the design option. Rail freight does not operate through 186th or 187th Streets. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the design option would not result in adverse effects related to safety and security, and mitigation would not be required.

Motorist, Pedestrian, and Bicyclist Safety: The design option would permanently close a sidewalk along 186th Street across the PEROW. However, the LPA with the design option is substantially similar to the LPA without the design option in regard to motorist, pedestrian, and bicycle safety conditions, potential impacts, and effect determinations. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the design option would not result in adverse effects related to safety and security, and mitigation would not be required.

Emergency Response Services: The LPA with the design option is substantially similar to the LPA without the design option in regard to emergency response service conditions, potential impacts, and effect determinations. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the design option would not result in adverse effects related to safety and security, and mitigation would not be required.

Security and Prevention of Crime and Terrorism: The LPA with the design option is substantially similar to the LPA without the design option in regard to security and crime conditions, potential impacts, and effect determinations. The conclusions and effect

determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the design option would not result in adverse effects related to safety and security, and mitigation would not be required.

4.18.3.4 Maintenance and Storage Facility

Transit and Freight System Safety: The MSF site will be closed to the public and only employee-related work will occur at the site. The employee-related work at the MSF will be completed consistent with OSHA requirements, and employees will follow the procedures in Metro's latest Rail Operating Rulebook for transit system safety. No freight operations will occur within the MSF site. Under NEPA, the MSF will not result in adverse effects on safety and security related to transit and freight system safety, and mitigation will not be required.

Motorist, Pedestrian, and Bicyclist Safety: The MSF site will be closed to the public and only employee-related work will occur at the site. Access to the MSF site will be strictly controlled by an onsite guard and security team, as well as barriers around the perimeter of the maintenance yard to prohibit unauthorized access into the yard. A new signalized intersection will be added for the MSF entrance at Somerset Boulevard and Bayou Avenue, which will provide increased safety for motorists, pedestrians, and bicyclists. Under NEPA, the MSF will not result in adverse effects on safety and security related to motorists, pedestrians, and bicyclists, and mitigation will not be required.

Emergency Response Services: The MSF will not interfere with emergency response services because there are no at-grade crossings. Under NEPA, the MSF will not result in adverse effects on safety and security related to emergency response services, and mitigation will not be required.

Security and Prevention of Crime and Terrorism: The MSF will be designed per the MRDC or equivalent. To deter crime and terrorism, the MSF will include CCTV, emergency call boxes, and the necessary lighting to provide visibility around the entire facility day and night. Access to the MSF site will be strictly controlled by an onsite guard and security team, as well as barriers around the perimeter of the maintenance yard to prohibit unauthorized access into the yard. Under NEPA, the MSF will not result in adverse effects on safety and security related to security and prevention of crime and terrorism, and mitigation will not be required.

4.18.3.5 U.S. Army Corps of Engineers Facilities

Transit and Freight System Safety: LPA operation over the USACE facilities will be substantially similar to other portions of the alignment in regard to transit system safety conditions, potential impacts, and effect determinations. The conclusions and effect determinations provided for the overall alignment, as described in Section 4.18.3.2, will also apply to USACE river crossings. Under NEPA, the LPA will not result in adverse effects on safety and security related to transit system safety, and mitigation will not be required.

Along the San Pedro Subdivision, the LPA will cross over the Los Angeles River and the Rio Hondo channel in an aerial configuration via proposed LRT bridges to be constructed next to the existing freight bridge. The same freight operating conditions, potential impacts, and effect determinations for the overall alignment, as described in Section 4.18.3.2, will also apply to the USACE facilities. The LPA will not result in adverse effects on safety and security related to freight because the LPA will operate on a new, separate bridge over USACE facilities.

Motorist, Pedestrian, and Bicyclist Safety: LPA operation over the USACE facilities will not affect motorist safety because no at-grade crossings are at these locations. Under NEPA, the LPA will not result in adverse effects on safety and security related to motorists at the USACE facilities, and mitigation will not be required.

The LPA will cross the Los Angeles River, Rio Hondo channel, and San Gabriel River in an aerial configuration via proposed LRT bridges. To reduce the risk of accidents and trespassing onto the guideway, the LPA will include high-quality access control at the USACE river crossings, including barriers, fencing, and signage. These design features will minimize illegal ROW entry. The conclusions and effect determinations provided for the overall alignment, as described in Section 4.18.3.2, also will apply to the USACE river crossings. Under NEPA, the LPA will not result in adverse effects on pedestrian and bicyclist safety at the USACE facilities, and mitigation will not be required.

Emergency Response Services: LPA operation over the USACE facilities will not interfere with emergency response services because no at-grade crossings are at these locations. Under NEPA, the LPA will not result in adverse effects on safety and security related to emergency response services at the USACE facilities, and mitigation will not be required.

Security and Prevention of Crime and Terrorism: The LPA will cross over the Los Angeles River, Rio Hondo channel, and San Gabriel River in an aerial configuration via proposed LRT bridges. The bridges and abutments will be designed to incorporate CPTED principles, and the design will restrict public access, preventing individuals from occupying Metro's ROW over the USACE facilities. The conclusions and effect determinations provided for the overall alignment, as described in Section 4.18.3.2, also will apply to the USACE river crossings. Under NEPA, the LPA will not result in adverse effects on security and prevention of crime and terrorism at the USACE facilities, and mitigation will not be required.

4.18.4 Project Measures and Mitigation Measures

4.18.4.1 Project Measures

The following project measures would be required during project operation and, therefore, are included as part of the LPA to avoid, minimize, or reduce the potential for impacts on safety and security:

SAF PM-1 Emergency Access. Metro will coordinate access for emergency responders, locations of fire hydrants, and security features with the applicable fire and police departments in addressing fire, life, safety, and security for the LPA, parking facilities, and station areas within their respective jurisdictions.

SAF PM-2 Security Assessments. Metro will employ an ongoing assessment of security at all WSAB station areas for possible redeployment of law enforcement and security services.

SAF PM-3 Freight Track Clearance. There will be a minimum 20-foot horizontal clearance between the LPA and freight track(s) where the LPA is located at-grade in shared ROW. This occurs primarily from Randolph Street to World Energy.

SAF PM-4 Pedestrian Bridge. The pedestrian bridge at Paramount High School connecting athletic fields to the school will be reconstructed to avoid potential interactions between pedestrians and vehicle traffic.

SAF PM-5 Certification and Approval. The LPA will comply with all FTA and FRA safety and security certification processes and approval prior to the start of revenue operating services. This includes conducting a PHA and a TVA. The PHA will assess the potential hazards introduced by or associated with a design. The TVA will verify critical assets and vulnerability to specific threats based on the likelihood of occurrence and the severity of occurrence and develop countermeasures for addressing prioritized vulnerabilities.

SAF PM-6 Metro Compliance. The LPA will be operated in compliance with Metro's policies, standard operating procedures, and rulebook or equivalent, as approved by Metro.

SAF PM-7 Station Access. The LPA will include modifications to provide safe and ADA-accessible access for pedestrians and bicyclists at stations.

SAF PM-8 Fire/Life Safety Committee. A Fire/Life Safety Committee for the LPA will be established per the MRDC or equivalent and FTA requirements. The committee will be tasked with addressing fire protection requirements for the operation of the LPA, along with establishing minimum requirements that will provide for the protection of life and property from the effects of a potential fire. Additional safety and security design recommendations may be identified by the Fire/Life Safety Committee as the LPA's design progresses further during preliminary engineering and final design.

4.18.4.2 Mitigation Measures

The following operation-related mitigation measure will be implemented to avoid, minimize, or reduce the potential for impacts on safety and security:

SAF-1 Encroachment Detection. Subject to coordination with the applicable stakeholders, the Locally Preferred Alternative will incorporate a means of encroachment detection along the portion of the corridor that shares right-of-way with freight operations. The encroachment detection system will detect unauthorized entry into Metro right-of-way, such as a freight train derailment. Prior to the start of service, Metro will develop a plan that outlines procedures should the encroachment detection system be triggered. In the event the intrusion detection system detects a possible derailment, all parties operating in the shared right-of-way corridor will be notified and train traffic (freight and light rail transit) will not be permitted to enter the area until the detection is investigated and the intrusion, if any, addressed to avoid possible derailments.

4.18.5 California Environmental Quality Act Determination

4.18.5.1 Threshold SAF-1: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Project Alternative

The No Project Alternative would not include the operation of any project features and would not result in changes or impacts on adopted emergency response plans or emergency evacuation plans. Therefore, no impact would occur under the No Project Alternative, and no mitigation measures are required.

Locally Preferred Alternative

As described in Section 4.18.3.2, there will be changes in the Affected Area for safety and security because the LPA will introduce operation of a new LRT route; however, the LPA will not impair or interfere with adopted emergency response plans or evacuation plans because evacuation plans will typically avoid crossing active rail corridors (U.S. Department of Health and Human Services 2003) and the at-grade portions of the LPA are located within active rail corridors. The aerial segments of the LPA will not impair or interfere with adopted emergency response plans or emergency evacuation plans.

The LPA will include development of a comprehensive EPP, per CPUC GO 164-E, that will be integrated with local jurisdictional emergency response plans. The EPP will establish and coordinate the roles and responsibilities that will be carried out by Metro personnel and by various emergency response agencies in the event of a fire, medical, or security emergency. In addition to the EPP, a Fire/Life Safety Report will be developed to explain the safety features in the proposed stations, the design specifics related to emergency access and egress, and the security and fire suppression systems.

Per FTA's System Safety Program Plans (49 CFR Part 659) and CPUC GO 164-E requirements, Metro will be responsible for implementing or conducting the TVA, Safety and Security Certification Plan, System Safety Management Plan provisions, and hazard analyses. Metro's Fire/Life Safety Committee will be responsible for overseeing project compliance with NFPA 130 and Metro's Fire/Life Safety Design Criteria, as well as coordination with fire jurisdictions for design reviews, training, and familiarization. The operation of the LPA will not impair or interfere with emergency response and evacuation plans. Therefore, impacts for the LPA will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

As described in Section 4.18.3.3, consistent with the LPA without the design option, the LPA with the design option would not interfere with emergency response or evacuation plans. Therefore, no impact would occur, and mitigation would not be required.

Maintenance and Storage Facility

As described in Section 4.18.3.4, the MSF will not interfere with emergency response plans or emergency evacuation plans as there are no at-grade crossings. Therefore, no impact will occur, and mitigation will not be required.

4.18.5.2 Threshold SAF-2: Result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain response times or other performance objectives for fire and police protection services?

No Project Alternative

The No Project Alternative would not include the operation of any project features and would not result in changes or impacts on government facilities, as well as response times for fire and police protection services. Therefore, no impact would occur under the No Project Alternative, and mitigation would not be required.

Locally Preferred Alternative

As described in Section 4.18.3.2, the LPA will not result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities or the need for new or physically altered government facilities in order to maintain response times or other performance objectives for fire and police protection services. Operation of the LPA will not introduce the need for new or expanded facilities relative to emergency service providers, and there will not be any new buildings required for such services as a result of the LPA. Therefore, no impacts will occur under the LPA, and mitigation will not be required.

Design Option: 186th Street

As described in Section 4.18.3.3, consistent with the LPA without the design option, the LPA with the design option would not result in new or physically altered government facilities to maintain response times or other performance objectives for fire and police protection services. Therefore, no impact would occur, and mitigation would not be required.

Maintenance and Storage Facility

As described in Section 4.18.3.4, the MSF will not result in new or physically altered government facilities to maintain response times or other performance objectives for fire and police protection services. Therefore, no impact will occur and mitigation will not be required.

4.18.5.3 Threshold SAF-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Project Alternative

The No Project Alternative would not include the operation of any project features and would not introduce or increase hazards due to geometric design or incompatible uses. Therefore, no impact would occur under the No Project Alternative, and mitigation would not be required.

Locally Preferred Alternative

As discussed in Section 4.18.3.2, for locations where the LPA will cross streets at-grade, the addition of LRVs and an increase in the frequency of trains will be the primary new safety hazard for pedestrians, bicyclists, and vehicular traffic in the Affected Area for safety and security. This impact will be addressed through design features of the LRV, such as audible warning devices to alert pedestrians, bicyclists, and vehicular traffic that an LRV is approaching. Per the MRDC, pedestrian and bicycle traffic control and channelization techniques will also be used to control pedestrian and bicycle movements at intersections and encourage the use of designated crossings through pedestrian gates and crosswalks. In addition, Metro will prepare grade crossing applications for approval by the CPUC and in coordination with local public agencies, such as city and county fire departments. Following review of grade crossing applications, additional safety and security design features may be incorporated, if necessary. Impacts will be further reduced through the incorporation and application of the MRDC or equivalent, CPUC rail crossing rules and regulations, and MUTCD requirements. In addition, FTA-required hazard analyses will be prepared during preliminary engineering and final design stages of the LPA to identify specific hazards and may include features described in Section 4.18.3.2 for enhanced pedestrian and bicyclist safety. Therefore, impacts related to motorist, pedestrian, and bicycle safety will be less than significant for the LPA, and no mitigation measures are required.

The LRT operations and stations of the LPA will also share ROW with freight operations, which could result in impacts. Safety requirements will be established in accordance with FTA and FRA regulations (49 CFR 659), CPUC GO 164-E and GO 143-B requirements, the MRDC or equivalent, and with additional input from the freight operators for safety elements. The Project will also operate in accordance with Metro system safety plans, policies, and procedures, including the Metro System Safety Program Plan, the Metro System Security Plan, the Metro Standard Emergency Operating Procedures, and the Metro Rail Operating Rulebook. The direction included in these safety plans, policies, and procedures is summarized in Section 4.18.3.2.

The safety characteristics will reduce the potential for conflicts between freight and LRT service; however, impacts will not be completely avoidable and will be considered significant. Therefore, Mitigation Measure SAF-1 (Encroachment Detection) has been identified so that additional safety measures are incorporated to lower impacts from LRT operations and freight operations within shared ROW to less than significant levels.

The LPA will provide security features to support the prevention of crime and terrorism, as described in Section 4.18.3.2. The LPA will comply with Metro's MRDC or equivalent and security plans, incorporate CPTED features, and include security patrols to minimize potential security concerns associated with criminal and terrorist activities. Design features, and operational security features and requirements will help prevent crime and terrorism; therefore, it will be a less than significant level for the LPA.

Mitigation Measures: Mitigation Measure SAF-1 (Encroachment Detection)

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

As described in Section 4.18.3.3, consistent with the LPA without the design option, the LPA with the design option would be designed per the MRDC or equivalent and would not introduce or increase hazards due to geometric design features or incompatible uses. Therefore, no impact would occur, and mitigation would not be required.

Maintenance and Storage Facility

As described in Section 4.18.3.4, the MSF will be designed per the MRDC or equivalent and will not introduce or increase hazards due to geometric design features or incompatible uses. Therefore, no impact will occur, and mitigation will not be required.

4.19 Construction Impacts

This section has been updated since the Draft EIS/EIR in response to comments on the Draft EIS/EIR and to reflect refinements to the LPA, including the locations of staging areas. In response to comments on the Draft EIS/EIR, two construction staging areas have been relocated from private property and away from businesses and residences into railroad ROW. Additionally, one construction laydown/staging area was added in an industrial area on properties identified as full acquisitions since circulation of the Draft EIS/EIR.

After the release of the Draft EIS/EIR, coordination with key stakeholders continued, leading to refinements in the LPA and a better understanding of project challenges, uncertainties, and other risks that could affect construction of the LPA. In turn, updates were made to the construction schedule. One change involves implementing a strategy to proactively minimize

freight and utility conflicts along the LPA in advance of construction. This, in turn, will reduce overall risks to the Project. As part of this strategy, and based on stakeholder feedback and the use of multiple contract packages for construction of the LPA, the construction schedule has been modified from six years as shown in the Draft EIS/EIR to approximately eight years.

Additionally, the Draft EIS/EIR assumed demolition and reconstruction of three bridges at I-105 (Century Boulevard Overpass [freight bridge], Façade Avenue Overcrossing, and Arthur Avenue Pedestrian Overcrossing). Since circulation of the Draft EIS/EIR, the demolition and reconstruction of the Façade Avenue Overcrossing and Arthur Avenue Pedestrian Overcrossing have been avoided because the I-105 ExpressLanes Project obtained Design Exceptions for Nonstandard Outside Shoulder Widths, which allows for these four-span bridges to remain. Modifications will still be made to the Façade Avenue Overcrossing, however, to accommodate the vertical circulation elements for emergency egress from the C (Green) Line infill station. Additionally, based on stakeholder coordination, a haul route was modified.

For completeness, a focused section on demolition has been added (Section 4.19.2.3), although this does not represent a new construction activity compared to the Draft EIS/EIR. Additionally, Table 4.19.1 was updated to include information regarding the demolition and reconstruction of the Paramount High School pedestrian bridge. Section 4.19.2.5 has been updated to include additional information on construction methods for the freight track relocation, and Section 4.19.2.7 under the heading "River Crossings" has been updated to include additional information on construction activities at the three river crossings. Section 4.19.2.4 was updated with information on steps if undocumented utilities are found during construction. Topic-specific updates are summarized under each topic in Section 4.19.3, as applicable.

4.19.1 Regulatory Background and Methodology

All state, regional, and local regulations and guidelines pertinent to construction of the Project will be followed. For additional regulatory information, refer to the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2024g). Information on regulatory requirements and methodology is also included in the prior discipline-specific subsections within this chapter. Methodology is described in the topic-specific sections where it differs from the methodology used for the long-term analysis.

4.19.2 Construction Activities

This section provides an overview of typical construction activities required to build an LRT system and associated stations, systems, and other supporting facilities. The activities summarized in this section are based on information known to date about construction of the LPA. Actual construction methods and materials will be site specific and at the discretion of the contractor. All construction methods and materials will be conducted per the MRDC or equivalent, and will comply with all regulatory requirements. The final means and methods may differ from what is included in this analysis. Construction sequencing and methods will largely be adopted during final design and may depend on the requirements of a delivery method deemed suitable for the project, including a potential public-private partnership. During final design and prior to construction, preconstruction evaluations will be completed to determine existing conditions that will affect construction methods and timing. An environmental reevaluation will be conducted as applicable if construction means and

methods vary from what was described in this Final EIS/EIR. Additional information on construction means and methods is provided in the Construction Methods Report and Section 3.7 in Chapter 3, Transportation, of this Final EIS/EIR.

4.19.2.1 Construction Sequencing and Duration

Construction activities for the LPA are scheduled to begin in 2024 and continue through 2032, with system testing occurring in 2034 and revenue service beginning in 2035. During this time, various components of the LPA will be under construction concurrently throughout the 14.5-mile alignment. Some portions may be constructed in phases with activities occurring progressively from one end of the alignment to the other. A construction plan will be developed during the final design phase of the LPA to further detail the construction durations, schedule, and sequencing. Metro will coordinate with local jurisdictions as applicable on the construction schedule as the construction plan is developed.

Major components of the LPA construction include guideways and trackwork (at-grade and aerial), grade separations, roadway modifications, utility relocations, station platforms (at-grade and aerial), an MSF, parking facilities, and supporting systems facilities (e.g., TPSSs). Additionally, construction of the LPA will require realignment of existing freight tracks. Construction activities, approximate durations, and equipment are summarized in Table 4.19.1 and in the subsections that follow. Working hours of construction will vary to meet the type of work being performed and to meet local ordinance restrictions. LPA construction will generally occur on weekdays during daytime hours. Nighttime and/or weekend construction may be required to minimize impacts, such as minimizing roadway/lane closures during peak periods.

Table 4.19.1. General Sequence of Construction Activities and Equipment

Activity	Approximate Duration (Months)[1]	Description	Equipment Required
Demolition Activities			
At-grade guideway	6-25	Clear and grub ROW, remove and abate contaminated soil/hazardous material, remove abandoned track and abandoned utilities Remove existing freight tracks once tracks are relocated	Bulldozers, excavators, backhoes, loaders, bobcats, dump trucks
Stations and Parking facilities		Demolish existing structures, pavement, clear and grub site, remove abandoned utilities	Bulldozers, excavators, cranes, bobcats, backhoes, loaders, dump trucks
Maintenance facility		Demolish existing structures, pavement, clear and grub site, remove abandoned utilities	Bulldozers, excavators, cranes, bobcats, backhoes, loaders, dump trucks
Paramount High School Pedestrian Bridge		Demolish existing structures, pavement, clear and grub site, remove abandoned utilities	Bulldozers, excavators, cranes, bobcats, backhoes, loaders, dump trucks

Activity	Approximate Duration (Months)[1]	Description	Equipment Required
Utility Relocation			
Utilities	39-42	Relocate or temporarily reroute utilities; typically will not exceed 5-10 feet in depth of disturbance Protect in place utilities that will not be relocated	Trench excavators, loaders, jackhammers, pavement saws, haul trucks, excavator/backhoes, trucks, cranes, and generator/ compressors, concrete trucks, rollers, and power compactors, trenchers, concrete pavers, rollers
Freight Rail Line Relocation			
At-grade freight tracks	26-36	Relocate existing freight tracks including preparation of track bed construct new rail and shoo-flys as necessary. Construct ballasted track. Construct at-grade street and traffic modifications, and install pedestrian safety equipment.	Rubber-tired graders, bulldozers, excavators, loaders, compactors, and water trucks for dust control, metal wheel compactors, road rollers, in addition to specialized equipment to handle and install rail, ties, and ballast
New freight bridge over I-105		Construct of new four-span freight bridge over I-105. Demolish existing railroad bridge once the new bridge and associated trackwork are complete	Cranes, air compressors, loaders, trucks, specialized water jet excavators, drilling rigs, hauling trucks, transit mix concrete trucks and concrete pumps, material and equipment delivery trucks, forms, reinforcing steel, pavement saws, pre-stressed concrete post tensioning strands, jacks, and related equipment
At-grade LRT			
Guideway	18-36	Prepare track bed, construct the supporting track slab, lay rail surface track work. Construct at-grade street and traffic modifications, and install pedestrian safety equipment. Excavate ground and concurrently jack concrete box support for I-710 crossing.	Rubber-tired graders, bulldozers, excavators, loaders, compactors, and water trucks for dust control, metal wheel compactors, road rollers, in addition to specialized equipment to handle and install rail, ties, and ballast For jacked box tunnel: box shield, hydraulic jacks and pump, grouting equipment, welders, cranes, drill rigs, jackhammers, flatbed trucks, concrete delivery truck and pumping equipment, ventilation equipment, and dump trucks

Activity	Approximate Duration (Months)[1]	Description	Equipment Required
Stations	18-24	May be constructed concurrently with guideway segments using standard building materials Construct supporting station elements such as foundation, columns, walls, platform slab, and canopies	Forklifts, generator sets, loaders, small to mid-size cranes, welders, bulldozers, water trucks for dust control, trucks for the removal of excavated material, transit mix concrete trucks and pumps, trucks to deliver forms, reinforcing steel, and other building materials
Surface parking facilities	4-6	Grade, prepare, pave, and stripe site. Install concrete curbs, lighting, driveways, sidewalks, and landscaping	Jackhammers, air compressors, concrete pumping equipment, paving machines, rollers, dump trucks, front-end loaders, forklifts, crawler cranes, crawler bulldozers/loaders, rubber-tired loader/bobcats, trucks, and water trucks for dust control
Parking structure facility	8-12	Grade, prepare parking structure foundations, cast-in-place concrete columns and slabs, install precast structural elements. Install structural finishes, elevators, electrical, signage, and parking systems. Pave and stripe. Install concrete curbs, lighting, driveways, sidewalks, and landscaping	Jackhammers, air compressors, concrete pumping equipment, paving machines, rollers dump trucks, front-end loaders, forklifts, large crawler cranes, crawler bulldozers/loaders, rubber-tired loader/bobcats, trucks, and water trucks for dust control, soil augurs, pile drivers and associated equipment

Activity	Approximate Duration (Months)[1]	Description	Equipment Required
Aerial LRT			
Guideway	18-36	Construct foundation, columns, and elevated sections. Fasten rail with plinth directly to the deck of the structure Construct ascending/descending retaining walls and fill at elevated sections	Cranes, air compressors, loaders, trucks, backhoes and bulldozers for excavation, vibratory or pile driving equipment, rubber-tired and sheep's-foot rollers, water trucks for dust control, specialized water jet excavators, drilling rigs, hauling trucks, transit mix concrete trucks and concrete pumps, material and equipment delivery trucks, jacks and related equipment
Stations	18-30	Construct foundations, columns, and/or elevated sections. Install support platform, track slabs, station amenities, and vertical circulation elements Construct pedestrian bridge connections for Slauson/A Line Station	Trucks for the removal of excavated soil and surface material, trucks to deliver forms, forklifts, backhoes, welders, drilling rigs, cranes, possibly specialized water jet excavators, vibratory equipment, concrete trucks and concrete pumps, material and equipment delivery trucks, water trucks for dust control, and related equipment
Surface parking facilities	4-6	Grade, prepare, pave, and stripe site. Install concrete curbs, lighting, driveways, sidewalks, and landscaping	Jackhammers, air compressors, concrete pumping equipment, paving machines, rollers dump trucks, front-end loaders, forklifts, crawler cranes, crawler bulldozers/loaders, rubber-tired loader/bobcats, trucks, and water trucks for dust control
Systems			
Signals (LRT Train Control Signals, LRT Crossing Signals, and Freight Rail Crossing Signals)	12-18	Construct foundations and conduit for electrical and signaling equipment. Relocate existing signal infrastructure as needed for freight crossings. Construct signal infrastructure for LRT following completion of freight construction activities.	High-rail vehicles, bobcats, forklifts, trench diggers, backhoes, and cranes, material/equipment trucks
OCS	8-12	Construct foundations for the OCS poles, duct banks and conduit for underground electrical feeder lines from TPSSs then install the OCS poles. Finally, install TPSS feeder cables and overhead catenary lines	High-rail vehicles, trench diggers, backhoes, bobcats, forklifts, and cranes, material/ equipment trucks, drill rigs, concrete trucks, other equipment needed for foundations

Activity	Approximate Duration (Months)[1]	Description	Equipment Required
TPSS	8-12	Install grounding mat, prefabricated electrical and electronic equipment structures for traction power systems, and communications equipment	Backhoes, bobcats, forklifts, cranes, material/equipment trucks
Systems testing and pre-revenue operations	15	Test and integrate system once construction is completed. Test power, communications, signaling, and ventilation systems; train operators and maintenance personnel	Small equipment, service vehicles, and rail vehicles
Maintenance and Storage Facility			
Maintenance and storage facility	25	Construct maintenance facility structures, rail vehicle storage yard and connecting tracks, parking facilities and site roadways, and lead track connections to mainline. Construct lead track at-grade rail crossings, retaining walls, and bridge and trench structures. Construct shop. Install storage track and access trackway from mainline track to maintenance facility area. Build vehicle wash, TPSS, and parking facility	Bulldozers, tractor trailer rigs, loaders, earthmovers, graders, bobcats, forklifts, cranes, concrete trucks, excavators, paving machines, rollers, and materials/equipment trucks
Paramount High School Pedestrian Bridge			
Paramount High School Pedestrian Bridge	8-12	Grade, prepare foundations, cast-in-place concrete columns and slabs, install precast structural elements. Install lighting, sidewalks, and landscaping.	Cranes, air compressors, loaders, trucks, backhoes and bulldozers for excavation, vibratory or pile driving equipment, rubber-tired and sheep's-foot rollers, water trucks for dust control, specialized water jet excavators, drilling rigs, hauling trucks, transit mix concrete trucks and concrete pumps, material and equipment delivery trucks, jacks and related equipment

Source: Metro 2024g
Notes: [1] Portions of activities will be conducted at the same time as other activities. Therefore, the total cumulative duration will be less than the sum of the individual activities.
LRT = light rail transit; OCS = overhead catenary system; ROW = right-of-way; TPSS = traction power substation

4.19.2.2 Construction Staging Area and Haul Routes

Construction staging areas[11] are proposed along the LPA alignment. Staging areas will be needed near grade separations, new bridge crossings, certain freeway crossings, and intermittently along viaduct structures. Typically, the staging areas will be located within the alignment ROW or on land to be acquired for major project elements such as the MSF, parking facilities, or TPSS sites.

Construction staging areas have been relocated and added along the LPA since the release of the Draft EIS/EIR in response to public comments. The staging area near State Street and Randolph Street has been relocated to the east of State Street in the railroad ROW, and the staging area at the southeast corner of Imperial Highway and Garfield Place has been relocated to the north of Imperial Highway within the San Pedro Subdivision ROW. The new staging area is located on the east side of the railroad ROW between Rayo Avenue and Southern Avenue.

Staging areas will be used for the storage of construction materials and equipment, locations of temporary offices for field personnel, parking for field personnel, and fabrication of construction materials (e.g., on-site welding of rail strings). Construction staging will also occur within public streets to support construction of both the aerial and at-grade guideway in the rail ROW, which will require temporary lane closures. Site clearance and demolition of existing structures at the construction staging areas will occur before major construction activity.

The locations of construction staging areas and haul routes are provided in Section 3.7.1 in Chapter 3, Transportation, of this Final EIS/EIR (see Table 3.33). The number of construction workers on-site at any one time will vary depending on the type of activity, but generally, approximately 250 to 400 construction workers are anticipated per each 7-mile segment at the peak of construction. This number is based on the number of direct hires for the Expo Phase 2 Project, meaning workers hired full time for construction, and includes contracted and craft employees that come to the job site regularly.

4.19.2.3 Demolition

Prior to construction, contractors will prepare work sites. This will include clearing, grubbing, soil remediation/abatement, and/or grading, followed by mobilization of initial equipment and materials, as applicable for the specific site. At some construction staging sites, building demolition may be required. Demolition will include controls to ensure that adjacent buildings and infrastructure are not damaged. These controls could include the installation of fencing and barricades, environmental monitoring, and restrictions on the types of equipment and demolition procedures used.

4.19.2.4 Utility Relocation and Installation

To the extent possible, the LPA will be designed to avoid conflicts with existing major utilities. Nevertheless, construction of the LPA may require the relocation, modification, or protection-in-place of utilities. Utility relocation work will generally occur within the affected ROW and on adjacent and nearby streets. Affected utilities will include storm drains, sanitary sewers, power lines, gas pipelines, electrical duct banks, oil pipelines, electrical transmission lines, lighting, irrigation pipelines, water lines, fiber optic lines, telephone, and cable lines.

[11] "Construction staging areas" is used interchangeably with "laydown areas" throughout this document.

Relocation of utilities will generally be performed before construction of other project elements. Protection-in-place is the method of choice, as this is less disruptive to service and less costly. To accommodate the aerial guideway, relocation of existing utility support poles will be required to reroute the utility lines around the LPA. Poles may also be removed and electrical lines relocated underground.

In the event undocumented utilities are encountered during construction, they will be potholed to determine approximate depth, orientation, and if possible, type, material, and size. Based on this information, likely utility owners in the area will be contacted to verify this information and to confirm if the utility is active. If the utility is active, a relocation plan will be developed and relocation performed by the contractor or the utility owner. If the utility is determined to be inactive, it will be removed or abandoned in place by the contractor following standard procedures.

Metro will coordinate utility relocations under the terms of each provider's franchise or other agreements defining the provisions for relocation work. In addition to relocation, various new utilities will be installed as part of the LPA. The equipment required for utility relocations is provided in Table 4.19.1. Utilities along the LPA are identified in Appendix A in the Construction Methods Report, and major utility conflicts are identified in Table 4.2 of that report.

4.19.2.5 Freight Rail Line Relocation

Portions of the LPA will share the rail ROW with active freight operators and require relocation of freight tracks. Figure 3-9 in Chapter 3, Transportation, of this Final EIS/EIR identifies locations of freight relocation. Approximately 8.7 miles of rail freight will be relocated and reconstructed to accommodate the LPA. Construction activities related to relocation of freight are described in this section and summarized in Table 4.19.1. Metro will coordinate with rail operators to help maintain freight operations during construction activities to the extent feasible.

To minimize disruptions and maintain active freight operations, new freight track(s), storage, and/or siding tracks will be constructed first. In locations where the new freight track(s) conflict with the existing freight tracks, either the existing tracks will be reconstructed in the new location using specialty track alignment equipment or temporary detour tracks will be constructed. At the completion of freight track construction, existing freight operations will be transferred to the new freight tracks. The existing freight tracks will be removed to allow space for the construction of the new LRT tracks.

At freight track grade crossings where the LRT tracks will also be at-grade, the first activity will be to perform sidewalk work, install new gate foundations for both freight track and LRT tracks, and install new signal houses. After this activity, there will be two potential scenarios depending on the grade crossing configuration:

- If the new freight tracks conflict with existing freight operations, a shoofly-track will be needed. In this case, new track grade-crossing concrete panels will be installed and freight operations will be cutover from the existing track to the shoofly-track. New vehicular gates and pedestrian gates for freight track and LRT tracks will be installed and tested. Then new freight track will be constructed at the grade crossing. Finally, operations from the shoofly-track will be cutover to the new freight track.

- If the new freight track is not in conflict with existing track operations, new grade-crossing concrete panels and trackwork will be installed. New vehicular gates and pedestrian gates for freight track and LRT tracks will be installed and tested. After this, freight operations will be cutover from the existing track to the new track.

4.19.2.6 At-Grade Construction Activities

Guideway

The LPA will include at-grade guideway construction. Table 4.19.1 summarizes construction activities associated with the at-grade guideway. Construction activities will occur in rail ROW and within city streets.

Construction activities for the LRT tracks will occur within active and inactive rail corridors, as well as within city streets, depending on the location. Additionally, to accommodate the guideway, street sections may require reconfiguration and/or reconstruction. Street reconstruction activities will be required at at-grade crossing locations. Street reconstruction will allow for track slab placement, both LRT and freight signal equipment (crossing gates and flashers), traffic signals, and rails. Street reconfiguration and/or reconstruction activities will also require modifications to the existing street elements, such as street curbs, gutters, medians, and/or sidewalks that will be affected by the rail grade crossings and/or street reconfiguration.

Stations

At-grade station locations will have a center platform configuration within the rail ROW, with the exception of the I-105/C Line Station which will have a side-platform configuration. Construction of the at-grade stations will involve cast-in-place concrete or precast panels to construct an approximately 40-inch-high platform along with ramps and stairs. Station furnishings will include canopies, railings, lighting, seating, signage, artwork, bike racks, and fare vending equipment. For typical construction durations and equipment used for at-grade stations, see Table 4.19.1.

Parking Facilities

Surface parking facilities will be constructed at four station locations: Firestone, I-105/C Line, Paramount/Rosecrans, and Bellflower. Additionally, a five-level parking structure will be constructed at Pioneer Station. Construction of the surface parking facilities will involve initial demolition of each site where existing structures, utilities, and pavement are present, subgrade preparation of the parking area, paving, and striping. Concrete curbs, lighting, driveways, sidewalks, and landscaping will be installed, as necessary. Access to the surface parking facility at the Firestone Station will be via a driveway along Atlantic Avenue connecting to a tunnel beneath the freight tracks and station. The parking structure at Pioneer Station will also require installation of new concrete foundations, cast-in-place structural columns, and precast parking structure elements. Elevators, electrical, signage, and parking systems will also be installed. For typical construction durations and equipment used for construction of parking facilities, see Table 4.19.1.

4.19.2.7 Aerial Construction Activities

Guideway

The LPA will include aerial guideway construction. Construction of an LRT aerial guideway will begin with installation of piles for columns and piers that support the structure and loads that will be carried on it. Pile-supported columns will be constructed in two main stages. In the first stage, piles made from steel or concrete, typically about 12 to 15 inches in diameter, will be driven into the ground by vibratory or pile driving equipment or, alternatively, cast-in-drilled-hole piles. The second stage joins the piles with the construction of the pile cap, typically a 4- to 5-foot-thick slab of reinforced concrete. The pile cap will be constructed to distribute the structural load to two or more piles.

Reinforced concrete columns are constructed in numerous sizes and can be poured inside reusable steel forms. To support the aerial guideway, the columns will be large in diameter, such as 8 feet or larger. The shape of the columns is generally circular but can vary. Once the reinforced concrete columns are constructed, the horizontal support of the guideway with the aerial girders will be constructed. Cast-in-place concrete spans will require the construction of falsework (temporary framing) to support the forms into which concrete is poured. The depth of the falsework is determined by the length of the spans and can be several feet deep. If a bridge will span an active roadway, the bridge will be designed with sufficient clearance under the falsework to allow traffic to pass. If required, clearance may be temporarily reduced during construction and trucks and other vehicles may need to be detoured.

Alternatively, the aerial guideways may be constructed of precast elements, which would require the use of large cranes; therefore, construction staging areas close to the construction site would be used to set up the cranes and to temporarily store the girders. Placement of girders over active roads may occur at night to minimize impacts to traffic. Once the girders have been placed on the columns, a concrete slab will be built to secure the girders, and then the rail is attached to the slab. At a few locations along the alignment, straddle bents will be used when a singular column supporting the aerial guideway is not feasible. Straddle bents consist of two large-diameter columns, offset from the row of typical columns, with a beam between them and the aerial guideway on top of the beam or integrated within the beam. For typical construction durations and equipment used for aerial guideway construction, see Table 4.19.1.

River Crossings

The LPA will span the Los Angeles River, Rio Hondo channel, and San Gabriel River on an aerial guideway. Crossings over the Los Angeles River and Rio Hondo channel will require construction of new bridges parallel to the existing active freight bridges. At the San Gabriel River, an existing abandoned freight structure owned by Metro will be demolished and replaced with a new LRT structure. At the Los Angeles River and Rio Hondo channel, extended piers will be supported by pile foundations and tied to existing piers.

After substructures and piers are completed and cured, superstructure construction would be completed. Precast/pre-stressed girders will be transported to the job site and erected onto the bent caps. After girders are erected on bent caps, stay-in-place steel/or precast panels will be used for casting deck slabs, so no falsework will be required. This method will minimize the impact to the river. Precast spliced girders could be an alternative for longer spans and, if used, would require midspan construction towers at splice locations.

Retained Cut and Fill Guideway

Retained fill guideway will be constructed where there is a transition between the aerial and at-grade guideway. Retained cut will be required in areas for aerial structure supports and the underground construction at the I-710. A typical transition section area is about 500 to 700 feet in length. Typical equipment used to construct retained fill include backhoes and bulldozers for excavation, vibratory or pile driving equipment, loaders, cranes, rubber-tired and sheep's-foot rollers, hauling trucks, transit mix concrete trucks, concrete pumps, and water trucks for dust control.

At several locations along the corridor, freight realignment will require retained fill supported by retaining walls, for example along San Pedro Subdivision where Salt Lake Avenue is parallel to the tracks along the west side of the ROW. The retaining walls would avoid or minimize impacts to the roadway.

Stations

Construction of aerial stations will involve construction techniques similar to those for aerial guideways. Foundations and columns will be constructed to support the platform. The station platform will typically be constructed of cast-in-place concrete with falsework. Forms will be erected, reinforcing steel put in place, and concrete will be placed into the forms to construct the columns and the platform slab. Ancillary facilities will then be added, including stairs, elevators, canopy, railings, lighting, seating, signage, artwork, and fare vending equipment. For typical construction durations and equipment used for aerial structures, see Table 4.19.1.

Slauson/A Line Station

The project alignment will be elevated and adjacent to the A (Blue) Line just north of the A (Blue) Line Slauson Station. The WSAB Slauson/A Line Station will be an independent structure from the existing A (Blue) Line station but will be accessed either at ground level or by two new pedestrian bridges crossing between the two platforms and above the freight track. A bus bridge for the A (Blue) Line may be needed for approximately six months during reconfiguration of the existing A (Blue) Line station. Construction near or above the freight railroad tracks will require coordination with the operating railroad. The basic steps and approximate construction durations to reconfigure the existing station and construct the new station are as follows (some tasks can be performed concurrently):

- Construct the project viaduct and the station frames (30 months)
- Construct the new vertical circulation and pedestrian bridge columns at existing A (Blue) Line Station and install pedestrian bridges with bus bridges (six months)
- Construct the proposed Slauson/A Line Station, including platform, vertical circulation, pedestrian bridge column, and station finishes (18 months)
- Construct viaduct tracks (12 months)
- WSAB and A (Blue) Line systems integration and testing (12 months)

4.19.2.8 Maintenance and Storage Facility

The MSF will be constructed as part of the LPA and will involve the following construction phases:

- Demolition and site preparation and grading
- Installation of foundations for new buildings

- Erection of buildings with steel framing, masonry blocks, and building aesthetic materials
- Preparation of the rail track bed, installation of the supporting track slab, and laying of the rail tracks for the LRT storage area
- Construction of roadway and parking facilities, including concrete curbs, lighting, driveways, and sidewalks as necessary
- Site aesthetic improvements such as landscaping

Typical equipment could include excavators, loaders, lifts, backhoes, bulldozers, compactors, cranes, saws, compressors, pneumatic equipment, pavers, and graders. For typical construction durations and equipment used for construction of the MSF, see Table 4.19.1.

4.19.2.9 Freeway Crossings

The LPA will cross the I-710, I-105, SR-91, and I-605 freeways. At the SR-91 and I-605 freeway crossings, the existing bridge structures contain sufficient space to accommodate the LRT tracks. Construction will occur below the existing bridges and will not impact the existing freeway travel lanes.

I-710

At I-710, there is insufficient horizontal clearance for the new LRT tracks in the existing freight opening, so a new opening through the embankment will need to be constructed. One approach would be to install a jacked box structure underneath the freeway. This approach is not anticipated to affect peak freeway operations, although ground improvements from the surface of the freeway may be needed to maintain support. It is anticipated the freeway lanes will remain open during this process, although there may be temporary closures to install ground-monitoring instruments and/or ground support infrastructure in the median. The basic steps of a jacked box structure are as follows:

- Construct jacked box structure segments in-line with and adjacent to the freeway embankment and a thrust block
- Perform ground improvements and/or install structural ground support along the entire jacked tunnel alignment from either the surface and/or sides
- Install a tunnel shield at the front end of the box with hydraulic jacks provided at the rear
- Excavate ground from within the shield and jacking the box forward
- Repeat the preceding steps until the new box structure is in the final position

Excavation and jacking are typically carried out alternately in 2- to 4-foot increments. The I-710 Freeway may require ground monitoring to measure potential settlement that may occur during the jacking and excavation operations.

I-105

At I-105, a new infill Metro C (Green) Line Station will be constructed in the median of the I-105 freeway as part of the LPA. Vertical pedestrian access will be provided from the LRT bridge to the proposed I-105/C Line Station platform via stairs, escalators, and/or elevators. On the west end of the platform, an emergency-only exit will be provided from the I-105/C Line infill station to the Façade Avenue overpass bridge, although design does not preclude an entrance. To accommodate construction of the new infill station platform, the existing Metro C (Green) Line tracks will be realigned, and the I-105 lanes would be shifted within the

existing Caltrans ROW for approximately 2,500 feet. The realigned I-105 lanes would allow for a wider median to accommodate the WSAB Project.

As a separate project, Metro and Caltrans have completed the Final EIR/Environmental Assessment for the I-105 ExpressLanes Project. The selected alternative converts the existing high-occupancy vehicle lane(s) on the I-105 freeway to two ExpressLanes. If construction of the I-105 ExpressLanes Project is concurrent with the WSAB Project, lane reconfiguration would not be required for WSAB because the I-105 ExpressLanes Project would reconfigure the I-105 lanes. If WSAB construction occurs prior to construction of the ExpressLanes Project, the lanes would be shifted as part of WSAB construction activities.

Three existing structures cross I-105 in the area of the C (Green) Line infill station:

- Century Boulevard Overpass, which carries one heavy-rail track for UPRR
- Façade Avenue Overcrossing, located approximately 186 feet west of the Century Boulevard Underpass, that carries one lane of vehicular traffic in each direction
- Arthur Avenue Pedestrian Overcrossing, located approximately 250 feet east of the Century Boulevard Overpass, carries a 12-foot-wide pedestrian path, a sewer line and casing, and a storm drain

The Draft EIS/EIR identified demolition and reconstruction of the Arthur Avenue Pedestrian Overcrossing and the Façade Avenue Overcrossing to accommodate the infill station. However, the demolition and reconstruction of these bridges are no longer required because these existing four-span bridges can accommodate both the I-105 ExpressLanes Project and the infill Metro C (Green) Line Station. Additionally, comments received on the Draft EIS/EIR requested that the western station entrance location for the infill station be modified to emergency egress only. Vertical circulation at this location but will be limited to emergency egress only. Emergency egress gates will be constructed along the existing Façade Avenue Overcrossing and along the western end of the infill station platform. Minor construction impacts will occur at Façade Avenue to add the emergency egress and vertical circulation elements, but impacts will be limited to the western portion of the bridge, and travel lanes will not be affected. Future escalators and ticket vending machines will not be precluded and could be constructed at a future date.

To accommodate the construction activities needed for the new freight and LRT bridges and LRT infill station, the C (Green) Line transit operations will be temporarily suspended in this area and a bus bridge may be provided to maintain connectivity for approximately 22 months. Alternatively, Metro is considering single-track operations along the Metro C (Green) Line, which would reduce the duration of the bus bridge but could increase the overall duration of construction in this location. Many of the construction activities associated with the new bridges and LRT infill station may occur concurrently. The basic steps for construction within and over the freeway are as follows:

- Remove existing C (Green) Line tracks and establish construction area (two months)
- Construct new freight bridge (21 months)
  - Construct falsework and then a cast-in-place concrete bridge over the freeway lanes and frontage roads, maintaining vehicular access to the extent feasible
- Shift the existing freight operations to the new bridge and demolish the existing bridge (three months)

- Construct new two-span LRT bridge (21 months)
  - Construct median column(s) and abutments for the LRT bridge
  - Construct falsework and then a cast-in-place concrete bridge, including a pedestrian walkway, over the freeway lanes and frontage roads, maintaining vehicular access
  - Connect the pedestrian walkway to the new C (Green) Line Station platform
- Realign the C (Green) Line tracks to the final location for the station (six months)
- Construct infill C (Green) Line station and vertical circulation elements at either end (four months)

During construction, the width of the shoulder lanes may decrease to accommodate falsework or other construction elements. In general, vehicular traffic on the freeway and frontage roads will be maintained during the duration of construction. Temporary freeway and frontage road closures, with appropriate detours, may be required during off-peak hours for the demolition of the existing freight bridge and if the final design calls for placement of precast structural beams across the roadways. Construction methods will be considered further during the advancement of design. Construction activities for the WSAB Project will be coordinated with the I-105 ExpressLanes Project as applicable depending on the construction schedule of the two projects.

4.19.2.10 Other Construction Activities

Traction Power Substations

TPSS locations and an image of an example TPSS are identified in Section 1.5 of Appendix C, System Components and Ancillary Facilities, of this Final EIS/EIR. A TPSS provides power to the overhead catenary system (OCS) and is typically a metal prefabricated building approximately 15 feet wide by 40 feet long by 15 feet high. Each at-grade TPSS site will be cleared and graded, and a concrete slab will be constructed with the appropriate underground utility connections. The TPSS structure will be delivered, mounted on the slab, and connected to the utilities. Fencing or another type of barrier will be installed around the perimeter of the site, and architectural and landscaping treatments will be applied, as required. Typical equipment used to construct a TPSS are identified in Table 4.19.1.

TPSS sites along the LPA were added, removed, and relocated since the release of the Draft EIS/EIR in response to public comments. TPSS Site 14 was relocated from the northwest corner of Randolph Street and State Street to the east within railroad ROW, and TPSS Site 2 has been relocated from the northwest side of the intersection of 183rd Street/Gridley Road to the southeast side. Optional TPSS Site 7E has been added within the reconfigured parking facility east of the tracks at the I-105/C Line Station parking facility, and optional TPSS Sites 16E and 12E in the City of Huntington Park have been eliminated from consideration.

Overhead Catenary Systems

The OCS is described in Section 1.2 of Appendix C, System Components and Ancillary Facilities, of this Final EIS/EIR, which also includes an example image. The OCS electrically powers the LRT through a contact wire suspended above the track. Construction of the OCS in the at-grade and aerial guideway sections will involve constructing the foundations for the OCS poles. This will be accompanied by construction of duct banks and conduit for the underground electrical feeder lines from the TPSS sites, followed by installation of the OCS

poles. Installation of the feeder cables and overhead catenary lines will occur after guideway construction. The overhead wires will be installed from the guideway using high-rail equipment and specialized vehicles with the ability to operate on both roadways and rails. Construction equipment is summarized in Table 4.19.1.

4.19.3 Construction Impacts, Mitigation Measures, and CEQA Determination

The following sections summarize the evaluation of construction-related effects of the LPA, including the design option and MSF, by discipline under NEPA, followed by the analysis per CEQA. To satisfy CEQA requirements, impacts are analyzed in accordance with Appendix G of the *CEQA Guidelines*. Project measures and/or mitigation measures are identified as applicable. The analysis of construction effects applies similar methodology as that described for the operational/long-term analysis for the disciplines, as discussed earlier in Chapter 4 and the corresponding technical reports of this Final EIS/EIR, unless specified otherwise. The construction effects of each discipline are evaluated in this section, with the exception of environmental justice, which is discussed in Section 4.22.4 of the Environmental Justice Section. This section summarizes information from the corresponding impact reports. The evaluation is based on the construction activities summarized in Section 3.7 of Chapter 3, Transportation, and Section 4.19.2 of this Final EIS/EIR, and detailed in the Construction Methods Report.

A discipline-specific evaluation of the No Build Alternative is not included in the following subsections. Under the No Build Alternative, infrastructure and transportation-related projects located within the Study Area and identified in the SCAG 2016-2040 RTP/SCS (SCAG 2016a), Metro's 2009 LRTP (Metro 2009a), and Measure M would continue to be implemented and built with the exception of the LPA. Projects included under the No Build Alternative would be subject to environmental clearance prior to construction. Construction activities would be temporary and would not result in long-term impacts. Furthermore, projects built under the No Build Alternative would implement project-specific construction-related measures to reduce and minimize potential adverse effects to the extent feasible. Refer to Section 4.21.4 of the Cumulative Impacts Section for the construction-related cumulative impact assessment that considers effects from construction of the LPA concurrent with other planned and reasonably foreseeable projects.

4.19.3.1 Land Use

This section has been revised to reflect identification of the LPA, inclusive of refinements to the LPA. The impact conclusions related to construction-related impacts on land use from the Draft EIS/EIR remain unchanged, including with respect to Alternative 3.

Locally Preferred Alternative

Land Use Compatibility: Construction of the LPA will result in temporary activities and require construction staging, materials stockpiling, hauling of dirt and materials, temporary street and lane closures, and temporary bike trail detours. TCEs and property acquisition will also be required for construction. TCEs are temporary, and are not expected to change the primary function of the existing use on properties that are temporarily acquired to be used as TCEs. Affected sites with TCEs are anticipated to be returned to preconstruction conditions once construction is completed. Construction staging and laydown areas will also occur on sites that will be permanently acquired, such as for parking facilities or the MSF. Construction staging and laydown areas will be primarily located on acquired sites characterized as industrial, commercial, or vacant. Parcels to be fully acquired for

construction laydown and construction support sites will require the demolition of any existing structures on the properties. Once use of the staging and laydown area is complete, the sites will be converted to parking facilities for the LPA stations or the MSF. TCEs are temporary and will not result in adverse effects regarding land use compatibility.

Temporary construction activities will be located within the public ROW and/or rail ROW or on sites acquired for construction. Temporary barriers and fencing will be placed along the perimeter of construction areas; temporary parking for construction personnel will be provided at construction staging areas; and the use of nearby streets could result in restricted street parking, sidewalk detours, bike trail detours, and traffic lane closures. Refer to Table 3-34 in Chapter 3, Transportation, of this Final EIS/EIR for the locations of sidewalk, bike, and street closures.

Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) (described in Section 4.19.3.2 [Construction-related Communities and Neighborhoods]) will maintain access to residences and businesses to the extent practicable. All construction activities will be temporary, and areas of TCEs are anticipated to be returned to preconstruction conditions once construction is complete. Therefore, under NEPA, the LPA will not result in adverse effects related to land use compatibility and will not permanently physically divide an established community.

Land uses located adjacent to and along the alignment and station areas may experience adverse effects regarding intermittent construction noise. Construction activities will require the use of heavy earth-moving equipment, generators, cranes, pneumatic tools, and other similar pieces of equipment that could result in noise and vibration effects. Vibration-generating activities could result in noticeable levels of vibration but will largely occur within the rail ROWs and are unlikely to result in building damage. Equipment vibration could exceed the FTA vibration annoyance criteria when conducted in proximity to vibration-sensitive uses. Mitigation to be implemented as applicable to the surrounding land uses includes Mitigation Measures NOI-6 (Noise Control Plan), which requires the contractor to prepare a noise control plan, and VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), which includes a Vibration Control Plan, minimizing the use of impact devices, drilling for building foundations, construction vibration limits, and construction monitoring to avoid construction vibration levels that will exceed the FTA construction impact criteria (refer to Section 4.19.3.7 [Construction-related Noise and Vibration] for a description of these measures). Although adverse noise effects could occur during construction, adverse effects associated with construction will be temporary and access to sensitive uses will continue to be available. Additionally, the function of the surrounding land uses will not be impaired.

In summary, implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access to residences and businesses to the extent practicable. All construction activities will be temporary, and areas of TCEs are not expected to change the primary function of the existing uses. Sites to be used as construction laydown areas will be converted to parking facilities for the LPA stations and the MSF. Therefore, under NEPA, the LPA will not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans: Construction activities will be temporary, and affected sites with TCEs are expected to return to their primary functions once construction is complete. Construction activities will not conflict with applicable regional land use plans, policies, and regulations.

Under NEPA, the LPA will not result in adverse construction effects regarding consistency with regional land use plans, policies, and regulations.

Consistency with Local Land Use Plans: Construction activities will be temporary, and affected sites with TCEs are anticipated to be returned to preconstruction conditions once construction is complete. Therefore, construction will not conflict with applicable land use plans, policies, and regulations of local jurisdictions. In addition, as discussed in Sections 4.19.3.5 and 4.19.3.7, construction activities for the LPA will also be consistent with air quality plans and policies and noise ordinances to minimize construction impacts to surrounding land uses. Under NEPA, the LPA will not result in adverse construction effects related to consistency with local land use plans, policies, and regulations.

Design Option: Close 186th Street

Construction activities associated with the design option specifically would primarily be located at 186th Street and 187th Street within public ROW and the PEROW. Community disruption could occur while construction activities are performed. Construction activities may result in restricted street parking, sidewalk detours, traffic lane closures, and access detours. Although access to surrounding land uses may be detoured for short periods during construction, access to residences and businesses would be maintained to the extent practicable with implementation of Mitigation Measure COM-1 (Construction Outreach Plan).

Sensitive land uses, such as residences, may experience adverse effects regarding intermittent construction noise. Similar to the LPA without the design option, construction activities and equipment used during construction of the LPA with the design option could result in adverse noise effects. Construction of the LPA with the design option would implement the same mitigation to reduce construction-related noise and vibration impacts to the extent feasible (Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), as applicable to the surrounding land uses). Although noise effects could occur during construction, adverse effects associated with construction would be temporary and access to sensitive uses would continue to be available. Additionally, the function of the surrounding land uses would not be impaired. Construction activities would be temporary, and affected sites with TCEs would be anticipated to be returned to preconstruction conditions once construction is complete. Construction activities would not conflict with applicable regional and local land use plans, policies, and regulations. Under NEPA, the LPA with the design option would not result in adverse construction effects related to land use.

Maintenance and Storage Facility

Construction of the MSF, including temporary parking for construction personnel, will be located entirely within the PEROW, public ROWs, and the properties acquired for the MSF site. Access to businesses and neighborhoods may be detoured for short periods during construction. However, access to residences and businesses will be maintained to the extent

practicable with the implementation of Mitigation Measure COM-1 (Construction Outreach Plan). Sensitive land uses near the MSF site may experience adverse effects regarding intermittent construction noise. Similar to the LPA, construction of the MSF will implement the same mitigation to reduce construction-related noise and vibration impacts to the extent feasible (Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), as applicable to the surrounding land uses). Although adverse noise effects could occur during construction, adverse effects associated with construction will be temporary, and access to sensitive uses will continue to be available. Additionally, the function of the surrounding land uses will not be impaired.

Construction of the MSF will further the objectives of the SCAG 2016-2040 RTP/SCS by providing jurisdictions opportunities to develop compact communities around the public transit system, offering an alternative to automobile travel, providing residents, visitors, and employees within the vicinity of the LPA another mode of transportation to access regional destinations and employment areas, and reducing overall air quality emissions and traffic congestion. Construction of the MSF will also further the goals, objectives, and policies of the *City of Bellflower General Plan: 1995-2010* as they relate to alternative transportation, public transportation, and future growth in transit. Therefore, construction of the MSF will not affect land use compatibility, as well as regional and local land use plans, policies, and regulations. Under NEPA, construction of the MSF will not result in adverse construction effects related to land use.

U.S. Army Corps of Engineers Facilities

Construction of the new bridge crossings at the USACE facilities will be located near current bridges at the USACE facilities. Land uses adjacent to construction areas may experience adverse effects regarding intermittent construction noise. Construction will comply with Metro's Green Construction Policy (Project Measure AQ PM-1, described in Section 4.19.3.5 [Construction-related Air Quality]) and will implement Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), and COM-1 (Construction Outreach Plan) to minimize adverse effects related to noise, and vibration to the extent feasible, and to maintain access and operation to residences and businesses to the extent practicable, as applicable to the surrounding land uses. Construction activities will be temporary, and affected sites with TCEs are anticipated to be returned to preconstruction conditions once construction is complete. Therefore, with implementation of mitigation, LPA construction activities at or near the USACE facilities will not result in adverse effects related to land use compatibility during construction.

Construction activities will not conflict with applicable regional and local land use plans, policies, and regulations. Therefore, no adverse construction effects related to consistency with regional and local land use plans, policies, and regulations will occur during construction of the LPA at the USACE facilities.

Project Measures and Mitigation Measures

Refer to Mitigation Measure COM-1 (Construction Outreach Plan) in Section 4.19.3.2 for a description of the Construction Outreach Plan that will be developed by Metro as part of its Construction Relation Program in Community Relations. Refer to Section 4.19.3.7 for Mitigation Measures NOI-6 (Noise Control Plan) and VIB-3 through VIB-7, which include a Vibration Control Plan, minimizing the use of impact devices, drilling for building foundations, construction vibration limits, and construction monitoring. These measures will be applied as applicable based on the surrounding land uses.

California Environmental Quality Act Determination

Threshold LU-CON-1: Would the Project physically divide an established community?

No Project Alternative

No construction activities associated with the LPA would occur under the No Project Alternative and, therefore, there would not be a division of an existing community. Therefore, no construction-related impacts would occur, and mitigation would not be required.

Locally Preferred Alternative

Temporary barriers and fencing will be placed along the perimeter of construction areas. Although these barriers may result in sidewalk detours and traffic lane closures, the barriers will not permanently divide an established community because they will be removed once construction is complete.

Construction will also result in temporary street and lane closures, TCEs, reconstruction of a pedestrian bridge in the City of Paramount, and potentially detoured segments of the Bellflower Bike Trail. During construction, detours and directional signage will be provided per the Construction Outreach Plan as part of Metro's Construction Relation Program in Community Relations designed for the LPA, as further detailed in Mitigation Measure COM-1 (Construction Outreach Plan). This plan will maintain accessibility to residences and businesses in communities and neighborhoods to the extent practicable, as well as the flow of traffic around the construction area. In addition, affected sites with TCEs for construction staging and temporary street, lane, pedestrian bridge, and bike path detours and closures will be returned to preconstruction conditions once construction is complete. Therefore, the LPA will not permanently physically divide an existing community, and impacts will be less than significant.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan)

Impacts Remaining After Mitigation: Less than significant impact.

Design Option: Close 186th Street

Construction activities would be temporary and located primarily within the PEROW, street ROW, and on sites that would be acquired as part of this design option. Construction activities require temporary street and lane closures. Detours and directional signage would be provided per Mitigation Measure COM-1 (Construction Outreach Plan). Therefore, consistent with the LPA without the design option, construction activities for the LPA with the design option would not permanently physically divide an established community, and impacts would be less than significant.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan)

Impacts Remaining After Mitigation: Less than significant impact.

Maintenance and Storage Facility

All temporary construction activities will be located primarily on the MSF site, the PEROW, local roadways, and sites acquired for construction support and rail construction. Temporary barriers and fencing will be placed along the perimeter of construction areas and may result in sidewalk detours and traffic lane closures; however, the barriers will be removed once construction is complete. If construction activities require temporary street and lane closures, detours and directional signage will be provided per Mitigation Measure COM-1 (Construction Outreach Plan). Therefore, construction of the MSF will not permanently physically divide an existing community, and impacts will be less than significant.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan)

Impacts Remaining After Mitigation: Less than significant impact.

Threshold LU-CON-2: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Project Alternative

No construction activities associated with the LPA would occur under the No Project Alternative, and there would be no conflicts with applicable land use plans, policies, and regulations of local jurisdictions. Therefore, no construction-related impacts would occur, and no mitigation measures are required.

Locally Preferred Alternative

Construction activities for the LPA will be temporary and will not directly conflict with applicable regional and local land use plans, policies, and regulations. Construction of the LPA will further the objectives of the SCAG 2016-2040 RTP/SCS by providing jurisdictions the opportunities to develop compact communities around the public transit system, offering an alternative to automobile travel, providing residents, visitors, and employees within the vicinity of the LPA another mode of transportation to access regional destinations and employment areas, and reducing overall air quality emissions and traffic congestion.

With regard to consistency with local land use plans, policies, and regulations, TCEs and property acquisitions will be required for construction staging areas and construction support sites. Following construction, affected sites with TCEs are anticipated to be returned to preconstruction conditions, and acquired parcels will increase the opportunity for development in station areas. Because the acquired parcels will be Metro-owned, it will create additional opportunity for transit-oriented development. Metro's role in the ownership of these acquired parcels will be limited to that of a property owner as these parcels will be outside of the rail ROW, and the parcels will be subject to the land use controls of the local jurisdictions. In addition, as discussed in Sections 4.19.3.5 and 4.19.3.7, construction activities for the LPA will also be consistent with air quality plans and policies and noise ordinances to minimize construction impacts to surrounding land uses. Construction of the LPA will further the goals, objectives, and policies of local land use plans as they relate to alternative transportation, public transportation, and future growth in transit within the

respective jurisdictional boundaries. Therefore, construction-related impacts to land use plans, policies, and regulations will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

Construction activities specific to the design option would be temporary and would not directly conflict with applicable regional and local land use plans, policies, and regulations. The design option would further regional policies of the SCAG 2016-2040 RTP/SCS and land use plans, policies, and regulations of the City of Artesia General Plan 2030. Construction of the LPA with the design option will also further the goals and policies of land use plans of other local jurisdictions along the alignment. Therefore, construction-related impacts to land use plans, policies, and regulations would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

Construction activities will be temporary and will not directly conflict with the SCAG 2016-2040 RTP/SCS or applicable *City of Bellflower General Plan: 1995-2010* goals and policies. Construction of the MSF will further the goals and policies of regional and local land use plans. Therefore, a less than significant impact will occur, and mitigation will not be required.

4.19.3.2 Communities and Neighborhoods

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. This section reflects the Final EIS/EIR impact analysis updates for transportation (access and mobility analysis), land use, acquisitions and displacements, visual quality and aesthetics, and noise (community character and cohesion and community stability) as they relate to construction activities. The impact conclusions in the Draft EIS/EIR remain unchanged, including with respect to Alternative 3. The design option would not result in adverse effects related to access and mobility, community character and cohesion, and community stability. The community and neighborhoods analysis for the MSF remains unchanged from what was analyzed in the Draft EIS/EIR. The LPA will not result in adverse effects related to community and neighborhoods during construction.

Locally Preferred Alternative

Access and Mobility

Access and mobility to residential neighborhoods and community facilities will be temporarily affected during construction as a result of temporary street, lane, and bike detours and closures. These closures are shown in Table 3.34 in Section 3.7.1 of Chapter 3, Transportation, of this Final EIS/EIR. Table 4.19.2 summarizes the community facilities and residential properties in which access will be affected by LPA construction activities.

Table 4.19.2. Affected Access to Community Facilities and Residences during Construction

Type of Construction Activity	Community Facilities and Residences	Affected Community
Aerial	Residences along Long Beach Ave	Southeast Los Angeles
Aerial	Residences along Holmes Ave south of Randolph St	Florence-Firestone
Aerial	Lillian Street Elementary School	Florence-Firestone
At-grade	Residences north and south of Randolph St	Huntington Park
At-grade	UEI College	Huntington Park
At-grade	San Antonio Continuation School	Huntington Park
At-grade	San Antonio Elementary School	Huntington Park
At-grade	Residences east and west of Salt Lake Ave	Bell, Huntington Park, and Cudahy
At-grade	Salt Lake Park	Huntington Park
Aerial	Paramount Park	Paramount
At-grade	Paramount High School	Paramount
Aerial	Residences on Downey Ave	Paramount
Aerial, At-grade	Bellflower Bike Trail	Bellflower
At-grade	Bellflower Pacific Electric Railway Depot	Bellflower
At-grade	Residences on the north and south sides of PEROW	Bellflower, Cerritos, and Artesia
Aerial	Residences surrounding 183rd St/Gridley Ave	Artesia and Cerritos
Aerial, At-grade	Artesia Historic District Recreation Trail	Artesia

Source: Compiled for Metro in 2023
Notes: PEROW = Pacific Electric Right-of-Way

Community disruption could occur during the construction phase. Grade crossing modifications at State Street will temporarily affect the lanes and sidewalks adjacent to the San Antonio Elementary School and the landscaping and driveways on the San Antonio Elementary School campus during construction. The driveways and sidewalks will be reconstructed, and the sidewalks will provide additional width for students of the school. Additionally, the existing pedestrian bridge between Paramount High School campuses in the City of Paramount will be demolished and reconstructed. Metro will coordinate with Paramount High School to identify detours while the bridge is unavailable. The LPA will maintain access to businesses, community facilities, residences, and neighborhoods to the extent practicable. However, construction activities and construction staging areas will result in temporary localized street and lane closures. Motorist, pedestrian, and bicycle access to businesses, community facilities, and neighborhoods may be detoured temporarily. Table 3-34 in Chapter 3, Transportation, of this Final EIS/EIR identifies the anticipated street, lane, and sidewalk closures required during construction. Construction activities will temporarily disrupt transit services in locations, and transit stops within construction areas will be temporarily relocated. However, transit services will remain accessible in the affected communities. In addition, construction activities could interrupt

community gatherings or festivals in the project area. Mitigation Measure COM-1 (Construction Outreach Plan) will require Metro to develop a Construction Outreach Plan to minimize effects to affected communities and businesses and minimize impacts to community gatherings or festivals in the project area. Because construction activities are temporary, barriers around construction activities and staging areas will be removed upon completion of construction. Temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions once construction is completed. Under NEPA, the LPA will not result in adverse effects related to community access and mobility during construction.

Community Character and Cohesion

During construction, community character and cohesion would be affected if community facilities and residences are displaced and changes in community layout, land use, visual character, noise levels, land uses, demographics, and air quality adversely affect the character of community facilities and residential areas. These factors are discussed below. Construction activities for the LPA will result in temporary disruption to community activities, but it is not anticipated to result in permanent adverse effects to character and cohesion of communities.

Acquisitions and Displacements, Community Layout, and Land Use: As discussed in Section 4.19.3.3, construction activities, including staging areas, construction support sites, and TCEs, will require property acquisitions. Properties with partial acquisitions for construction or TCEs are anticipated to be returned to preconstruction conditions once construction is completed. No residential uses or community facilities will be temporarily displaced. Some construction staging areas will be located on parking facilities. Permanent acquisitions will occur in these areas because these construction staging areas will be converted to parking facilities to support operation of the LPA. The effects of permanent acquisitions are discussed in Section 4.2.3.2 of the Communities and Neighborhood Section.

Crosswalks, sidewalks, and roadways may be temporarily closed during construction. As discussed in Section 4.19.3.1, construction activities will be temporary, and construction is not expected to permanently disrupt surrounding land uses. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access to residences, businesses, and community facilities to the extent practicable. All construction activities will be temporary, and areas with crosswalk, sidewalk, and roadway closures will be returned to preconstruction conditions or better once construction is complete.

Construction activities will not change the character and cohesion of the affected community because construction activities will be temporary and are not expected to permanently isolate residential neighborhoods or community facilities and will not permanently alter the physical layout of the affected communities. Under NEPA, the LPA will not result in construction adverse effects related to community character and cohesion.

Visual and Aesthetics: As discussed in Section 4.19.3.4, construction activities, construction equipment, and construction work will be temporarily visible in affected communities and could temporarily affect the visual character of some residential neighborhoods. Construction sites will be returned to preconstruction conditions once construction is completed. Implementation of Mitigation Measure VA-3 (Construction Screening) will reduce visual impacts in the communities during construction (refer to Section 4.19.3.4 [Construction-related Visual and Aesthetics] for a description of this measure). Construction activities will not result in adverse changes to the visual character of the affected communities and will not permanently change the established character and cohesion of the affected communities.

Noise and Vibration: As discussed in Section 4.19.3.7, noise related to construction may affect community facilities and residences within 500 feet of construction activities, as this is the distance where noise levels are loudest. It is expected that community facilities and residences farther than 500 feet will not be adversely affected by noise. Typically, at distances greater than 500 feet, construction noise levels are reduced as a result of geometric spreading of noise over an increased area and attenuation provided by intervening rows of buildings. Community facilities that may be affected include schools, community centers, parks, and churches. Vibration-generating activities could result in noticeable levels of vibration but will largely occur within the rail ROWs and are unlikely to result in building damage. Equipment vibration could exceed the FTA vibration annoyance criteria when conducted in proximity to vibration-sensitive uses. Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) will be implemented during construction to reduce construction noise and vibration impacts to the extent feasible, as applicable to the surrounding land uses. With mitigation, vibration impacts during construction will not occur, but construction noise may exceed the FTA construction noise criteria and result in temporary adverse effects to community facilities and residences. Construction noise levels will be temporary disruptions and are not anticipated to reach noise levels that will inhibit use of community facilities and residential properties.

Air Quality: As discussed in Section 4.19.3.5, construction of the LPA will not produce emissions exceeding any regional mass daily threshold or any applicable localized construction emissions thresholds, and no adverse effects related to air quality will occur. In addition, construction activities will be required to comply with applicable rules and regulations and adhere to BMPs to control emissions and exposure to air pollution. Construction-related impacts to air quality will be temporary and will not permanently inhibit the use of community facilities, change the community character, or affect community cohesion.

Community Stability

During construction, an adverse effect on community stability would occur if construction would cause residents to move out of their community. Construction activities will be temporary. While construction will require the acquisition and displacement of properties for construction staging, construction support sites, and TCEs (Section 4.19.3.3), no residential uses or community facilities will be temporarily displaced as a result of these property acquisitions. As discussed above, community disruptions will occur during construction because access to businesses, community facilities, and neighborhoods may be detoured as a result of temporary street or lane closures. Transit stations within construction areas will also be temporarily relocated but will remain accessible within the affected community. Although construction will temporarily affect access and mobility, as well as community character and cohesion, construction activities are temporary and will not cause residents to move out of the affected communities. Additionally, Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access to community facilities, businesses, and residential areas. Under NEPA, construction of the LPA will not result in adverse effects related to community stability.

Design Option: Close 186th Street

The design option would close 186th Street but introduce an at-grade crossing at 187th Street. Construction activities and temporary barriers along the perimeter of the design option construction areas are expected to result in temporary sidewalk, lane, and/or street closures where 187th Street intersects the PEROW. Although vehicular, pedestrian, and bicycle access to businesses, community assets, and residences near the PEROW may be detoured temporarily, access to businesses, community assets, and residences would be maintained. Where 186th Street intersects with the PEROW, the existing crosswalk, sidewalks, and street would be permanently closed. Additionally, the Artesia Historic District Recreation Trail may be closed temporarily at 186th Street and 187th Street to protect the safety of pedestrians, bicyclists, and construction workers. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) would maintain access to businesses, community facilities, residences, and neighborhoods to the extent practicable.

As construction activities are temporary, barriers around construction activities would be removed upon completion of construction. Temporary street, lane, sidewalk, and bike path detours and closures at 187th Street and the Artesia Historic District Recreation Trail would return to preconstruction conditions once construction is completed. The street and sidewalk closures at 186th Street would remain. Access to the surrounding residential neighborhoods, businesses, and community assets would remain and permanent access disruptions to existing land uses on both sides of the PEROW would not occur.

Construction of the design option would require two TCEs but would not displace residences or community facilities. As discussed in 4.19.3.7, noise and vibration impacts for construction of the LPA with the design option would be similar to construction of the LPA without the design option. Similar to construction of the LPA without the design option as discussed above, with implementation of Mitigation Measures NOI-6 (Noise Control Plan) and VIB-3 through VIB-7, and VA-3 (Construction Screening), adverse effects related to construction noise and vibration during construction would be minimized. However, adverse effects related to noise during construction would occur even with mitigation. Nonetheless, the impacts associated with temporary construction-related noise would be temporary disruptions and would not permanently inhibit the use of community facilities, change community character, or affect community cohesion.

Construction of the LPA with the design option could temporarily alter the visual character and quality of the Affected Area, similar to the LPA without the design option. With implementation of Mitigation Measures VA-3 (Construction Screening), VA-4 (Construction Lighting), and NOI-6 (Noise Control Plan), no adverse effects would occur. Construction-related visual effects would be temporary and would not permanently inhibit the use of community facilities, change community character, or affect community cohesion.

Under NEPA, the LPA with the design option would not result in construction adverse effects related to access and mobility, community character and cohesion, and community stability. No long-term adverse effects on neighborhoods and communities would occur during construction of the design option.

Maintenance and Storage Facility

Construction activities related to the MSF will be temporary and will primarily occur within the MSF site. Temporary construction barriers surrounding the MSF are not expected to adversely affect access and mobility to residential neighborhoods and community assets. Construction activities for the MSF will not alter the physical layout of the affected communities, and no residential uses or community assets will be displaced for the purposes of construction staging. Although temporary increases in noise levels and changes in air quality and visual character will occur during construction and could temporarily disrupt the area surrounding the MSF site, the construction-related changes will not permanently alter the character of Bellflower as construction activities are temporary and will be site specific.

Construction of the MSF site will result in temporary lane closures that may affect access to businesses and neighborhoods. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will be implemented to maintain access to the surrounding uses and to maintain traffic flow. Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), and VA-3 (Construction Screening) will be implemented to minimize adverse effects related to construction noise, vibration, and visual quality during construction, as applicable to the land uses surrounding the MSF. However, adverse effects related to noise during construction will occur even with mitigation. Nonetheless, the indirect impacts associated with temporary construction-related noise will be temporary disruptions and will not permanently inhibit the use of community facilities, change community character, or affect community cohesion. Under NEPA, the MSF site will not result in construction adverse effects related to access and mobility, community character and cohesion, and community stability.

U.S. Army Corps of Engineers Facilities

Construction activities at the USACE facilities will be temporary and will primarily occur within, over, and adjacent to the USACE facilities. Temporary construction barriers will be placed along the perimeter of the construction areas. Where the rail ROWs intersect with the USACE facilities, access to residential neighborhoods is not available under existing conditions, and construction barriers will not adversely affect access and mobility to residential neighborhoods from the USACE facilities. Construction activities will not alter the physical layout of USACE facilities. Construction activities at the USACE facilities are not expected to alter the stability and demographics of the communities surrounding the USACE facilities.

Construction at the USACE facilities will result in temporary closure of the existing bike paths at the banks of the Los Angeles River, Rio Hondo channel, and San Gabriel River for the safety of pedestrians, bicyclists, and construction workers; however, detours will be provided. Adverse effects related to air quality and noise during construction will not occur at the USACE facilities. Construction at the USACE facilities will not permanently inhibit the use of the bike paths at the banks of the Los Angeles River, Rio Hondo channel, and San Gabriel River, will not change the character of the USACE facilities, or affect community cohesion. Therefore, adverse effects to access and mobility, community character and cohesion, and community stability will not occur.

Project Measures and Mitigation Measures

Project Measures

There are no construction-related project measures related to communities and neighborhoods.

Mitigation Measures

The following mitigation measure will apply:

COM-1 **Construction Outreach Plan.** Metro will develop a Construction Outreach Plan as part of Metro's Construction Relation & Mitigation Programs in Community Relations in coordination with affected communities, community facilities, and businesses that will be implemented by Metro and its contractors during construction of the Project. The Construction Outreach Plan will include, but not be limited to, the following elements:

- Maintain access to community assets (including, but not limited to, schools and bike trails) and neighborhoods during construction as practicable
- Maintain access to businesses during the operating hours of the businesses as practicable
- Provide signage to direct pedestrians and motorists around construction areas; around sidewalk, street, and lane closures; to entrances of businesses and community assets; to maintain the flow of traffic around the construction area; and to notify pedestrians and motorists of any permanently closed streets prior to the closure of such streets
- Provide appropriate signage, barriers, and fencing for pedestrian and bicycle detour routes to prevent pedestrians and bicyclists from entering the construction zones
- Provide signage alerting potential customers that businesses are open during construction and clearly mark detours as appropriate
- Provide the public with updates, alerts, and schedules during construction and prior to the start of revenue service through informational meetings, the project website, and other forms of communication such as, but not limited to, mailings and flyers to businesses and residences with 0.25-mile of the construction zone
- Develop a mitigation plan to support businesses affected by construction to help reduce impacts to businesses during construction
- Coordinate construction activities with other capital improvement projects being carried out nearby to minimize construction impacts and competing needs for detour routes

Refer to Section 4.19.3.4 for Mitigation Measure VA-3 (Construction Screening) and Section 4.19.3.7 for Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources). These measures will be applied as applicable to the surrounding land uses.

California Environmental Quality Act Determination

Threshold COM-CON-1: Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the existing communities and neighborhoods would remain unchanged. No properties would be acquired; no structures along the project alignment would be demolished; and no new structures would be constructed. No population growth beyond that already anticipated in the SCAG growth projections for the region and in local community plans would occur, either directly or indirectly. Therefore, no impacts would occur and mitigation would not be required.

Locally Preferred Alternative

The construction phase for the LPA will be temporary and will not directly or indirectly induce unplanned population growth in the area. Construction workers are anticipated to be existing Metro workers or new workers who live within driving distance to the job site and will not require moving to the surrounding area for work. Therefore, impacts regarding population growth will be less than significant and mitigation will not be required.

Design Option: Close 186th Street

Similar to the LPA without the design option, the construction phase for the LPA with the design option would be temporary and would not directly or indirectly induce unplanned population growth in the area. Therefore, impacts regarding population growth would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Similar to the LPA, the construction phase for the MSF will be temporary and will not directly or indirectly induce unplanned population growth in the area. Construction workers are anticipated to be existing Metro workers or new workers who live within driving distance to the job site and will not require moving to the surrounding area for work. Therefore, impacts regarding population growth will be less than significant and mitigation will not be required.

4.19.3.3 Acquisitions and Displacements

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. Based on the refinements to the LPA, construction of the LPA will affect 193 parcels, requiring 36 full acquisitions and 189 TCEs. In comparison, construction of Alternative 3 would affect 191 parcels, requiring 34 full acquisitions and 200 TCEs. Construction of the LPA will affect 2 additional parcels, requiring 2 additional full acquisitions but 11 fewer TCEs compared to Alternative 3 as analyzed in the Draft EIS/EIR. The MSF will require 2 permanent, full acquisitions as similarly discussed for the Bellflower MSF site option in the Draft EIS/EIR. The LPA and MSF will not require the relocation or demolition of residential uses during construction.

Similar to assumptions in the Draft EIS/EIR, construction staging areas that require full permanent acquisitions will not be returned to preconstruction conditions, but rather will be used for permanent elements for the LPA, such as station parking facilities and the MSF site,

at the conclusion of construction and to support operation of the LPA. The design option would require an additional two TCEs. The design option would not result in the temporary acquisition of businesses or residential units.

Locally Preferred Alternative

Construction staging areas of the LPA will be primarily located on acquired sites characterized as industrial, commercial, or vacant. Parcels to be fully acquired for construction staging and construction support sites will require the demolition of existing structures on the properties and require the relocation of existing businesses. TCEs will be temporary and are not expected to change the primary function of the existing uses. Parcels affected with TCEs are anticipated to be returned to preconstruction conditions once construction is completed.

For construction staging areas that require full permanent acquisitions, those sites will not be returned to preconstruction conditions, but rather will be used for permanent elements for the LPA, such as station parking facilities and the MSF, at the conclusion of construction and to support operation of the LPA. Specifically, construction staging areas will be located on sites that will be used as parking facilities for the Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station. These will be permanent acquisitions that will be converted from a construction staging area during the construction phase of the LPA to parking facilities to support operation of the LPA.

Table 4.19.3 and Table 4.19.4 summarize the construction-related acquisitions for the LPA, MSF, and design option and by jurisdiction. Construction of the LPA will affect 193 parcels, requiring 36 full acquisitions and 189 TCEs; construction of the MSF will result in 2 affected parcels and 2 full acquisitions. A total of 46 parcels are identified for construction staging areas (LPA inclusive of the MSF site). Construction of the LPA and MSF will result in 47 relocations as a result of construction activities and temporary construction staging areas. The LPA and MSF will not require the relocation or demolition of residential uses. In comparison, Alternative 3 analyzed in the Draft EIS/EIR would affect 191 parcels, requiring 34 full acquisitions and 200 TCEs. The LPA will affect 2 additional parcels, requiring 2 additional full acquisitions, but 11 fewer TCEs, compared to Alternative 3 as analyzed in the Draft EIS/EIR.

Metro will provide compensation for identified eligible businesses and residents affected during construction as required under the Uniform Act and California Relocation Act. Under NEPA, the LPA will not result in construction adverse effects related to acquisitions and displacements.

Table 4.19.3. Summary of Construction-related Acquisitions and Temporary Construction Easements

	Impacted Parcels[1]	Full Acquisitions[2]	TCE	Parcels for Construction Staging Areas	Parcel Affected Area (sq ft)[3]	No. of Relocations Needed
Locally Preferred Alternative	193	36	189	44	2,312,300	46
MSF Site	2	2	0	2	939,700	1
Project Total (LPA + MSF)	**195**	**38**	**189**	**46**	**3,252,000**	**47**
Design Option[4]	2	0	2	0	400	0

Source: Metro 2024m
Note:
[1] Parcels are identified by parcel boundaries and Assessor's Parcel Number. "Impacted Parcels" is not a total sum of the full and partial acquisitions. More than one partial acquisition may occur on a single parcel. Affected parcels, acquisitions, and TCEs identified here are for construction-related acquisitions. Construction full acquisitions refer to property acquisitions for construction staging areas on which parking facilities to support operation of the LPA will be later constructed.
[2] The table accounts for temporary full construction acquisitions and full permanent acquisitions of parcels that will be used for construction staging areas. At the conclusion of construction, some construction staging areas will be used for station parking facilities and the MSF. In total, 22 parcels will be converted to station parking facilities and the MSF.
[3] Rounded to nearest hundred
[4] With implementation of the design option, the LPA with the design option would result in a net of one additional TCE and one additional impacted parcel compared to the LPA without the design option.
MSF = maintenance and storage facility; sq ft = square feet; TCE = temporary construction easement

Table 4.19.4. Construction-Related Acquisitions and Temporary Construction Easements by Jurisdiction

Jurisdiction	Impacted Parcels[1]	Construction Full Acquisitions	TCE	Parcels for Construction Staging Area	Parcel Affected Area (sq ft)[1]	No. of Relocations Needed
Los Angeles	9	9	0	9	53,500	8
Vernon	3	0	3	0	2,100	0
Unincorporated LA County	0	0	0	0	0	0
Huntington Park	47	1	57	1	35,700	5
Cudahy	9	1	8	1	13,000	1
Downey	2	0	3	1	214,200	0
South Gate	60	10	62	17	1,518,500	15
Paramount	37	3	37	3	260,500	5
Bell	5	0	7	0	500	0
Bellflower	4	1	3	1	113,300	1
Artesia	12	11	1	11	99,000	11
Cerritos	5	0	8	0	2,000	0
LPA Only Total	**193**	**36**	**189**	**44**	**2,312,300**	**46**

Jurisdiction	Impacted Parcels[1]	Construction Full Acquisitions	TCE	Parcels for Construction Staging Area	Parcel Affected Area (sq ft) [1]	No. of Relocations Needed
Bellflower (MSF Site)	2	2	0	2	939,700	1
Project Total (LPA + MSF)	**195**	**38**	**189**	**46**	**3,252,000**	**47**
Artesia (Design Option)[2]	2	0	2	0	400	0

Source: Metro 2024m
Notes: The table accounts for temporary construction acquisitions and full permanent acquisitions of parcels that will be used for construction staging areas. At the conclusion of construction, some construction staging areas will be used for station parking facilities and the MSF site. Specifically, 22 parcels will be converted to station parking facilities and the MSF site.
[1] Parcels are identified by parcel boundaries and APN. "Impacted Parcels" is not a total sum of the full and partial acquisitions. More than one partial acquisition may occur on a single parcel.
[2] With implementation of the design option, the LPA with the design option would result in a net of one additional TCE and one additional impacted parcel compared to the LPA without the design option.
MSF = maintenance and storage facility; sq ft = square feet; TCE = temporary construction easement

Design Option: Close 186th Street

As shown in Table 4.19.3, construction of the design option would require two TCEs totaling approximately 400 square feet. With the implementation of the design option, the LPA with the design option will net one additional temporary impact compared to the LPA without the design option. The LPA with the design option would not result in additional temporary displacement of businesses or residential units.

Maintenance and Storage Facility

As shown in Table 4.19.3 and Table 4.19.4, construction staging areas will be located at the MSF site during the construction phase. The MSF site will require two permanent, full acquisitions. Construction of the MSF will permanently displace one business (Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business). Permanent displacements associated with the MSF are described in Section 4.3.3.4 of the Acquisitions and Displacements Section.

As discussed for the LPA, Metro will provide compensation for identified eligible businesses and residents affected during construction of the MSF as required under the Uniform Act and California Relocation Act. Under NEPA, the MSF will not result in construction adverse effects related to acquisitions and displacements.

U.S. Army Corps of Engineers Facilities

The LPA will cross over three USACE facilities: the concrete-lined Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel. Construction activities will require TCEs within USACE-owned facilities. The acquisition and displacement analysis provided in this Final EIS/EIR only considers private acquisitions and not public facilities. Metro will coordinate with USACE in support of the temporary public easements.

Project Measures and Mitigation Measures

Metro will provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act, California Relocation Act, and other applicable regulations. No project measures or mitigation measures are required.

California Environmental Quality Act Determination

Threshold DIS-CON-1: *Would the Project displace substantial numbers of existing people, housing or business, necessitating the construction of replacement housing or replacement business elsewhere?*

No Project Alternative

No project-related construction activities would occur under the No Project Alternative that would result in the need for TCEs and construction staging areas. Therefore, no construction-related impacts would occur.

Locally Preferred Alternative

Construction-related acquisitions for the LPA will be primarily located on acquired sites characterized as industrial, commercial, or vacant. Parcels to be fully acquired for construction will require the demolition of existing structures on the properties and require the relocation of existing businesses. TCEs will be temporary and are not expected to change the primary function of the existing use. Parcels with TCEs are anticipated to be returned to preconstruction conditions once construction is completed.

For construction staging areas that require full permanent acquisitions, those sites will not be returned to preconstruction conditions, but rather will be used for permanent elements for the LPA, such as station parking facilities and the MSF, at the conclusion of construction and to support operation of the LPA. Specifically, construction staging areas will be located on sites for the parking facilities at the Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station. These permanent acquisitions will be converted from a construction staging area during the construction phase of the LPA to parking facilities to support operation of the LPA. A construction staging area will be located at the site that will be permanently acquired for the MSF during construction and converted to the MSF prior to operation of the LPA. Construction staging areas and construction support sites for the LPA will not require the relocation or demolition of residential uses.

Table 4.19.3 summarizes the affected parcels, acquisitions, and TCEs for the LPA. Metro will provide compensation for identified eligible businesses and residents affected during construction. Therefore, with full compliance of the Uniform Act, California Relocation Act, relocation policies and procedures of Metro, and other applicable policies, construction impacts related to displacements will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

As shown in Table 4.19.4, construction of the design option would require two TCEs. With the implementation of the design option, the design option will net one additional temporary impact compared to the LPA without the design option. The design option would not result in the temporary acquisition of businesses or residential units. Therefore, impacts would be less than significant.

Maintenance and Storage Facility

As discussed in Section 4.19.3.3, construction laydown areas will be located at the MSF site during the construction phase and converted to the MSF prior to the start of operation. Construction of the MSF will require the full acquisition of two parcels and will permanently displace one business (Hollywood Sports Paintball & Airsoft Park and Bellflower BMX business). The MSF site does not contain residential units; therefore, no residential displacements are anticipated.

Similar to the LPA, Metro will provide compensation for identified eligible businesses and residents affected during construction of the MSF. Therefore, with full compliance of the Uniform Act, California Relocation Act, relocation policies and procedures of Metro, and other applicable policies, construction impacts related to displacements will be less than significant, and mitigation will not be required.

4.19.3.4 Visual and Aesthetics

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, inclusive of refinements to the LPA. In response to comments on the Draft EIS/EIR, Mitigation Measure VA-3 (Construction Screening) was updated to include residential areas as a sensitive land use. Impacts to visual resources and aesthetics during construction are unchanged from those presented in the Draft EIS/EIR, including with respect to Alternative 3. Construction of the LPA will not result in adverse effects related to scenic vistas, scenic resources, visual character and quality, light, and glare.

Methodology

To satisfy NEPA requirements, the analysis of construction effects related to visual and aesthetics uses the same methods as described in Section 4.4.1.2 of the Visual and Aesthetics Section in the context of temporary project-related construction activities and its overall effects on visual character, views on scenic resources, visual quality, and viewer sensitivity within the Affected Area for visual. To satisfy CEQA requirements, the analysis of construction-related visual and aesthetic impacts assesses temporary project-related construction activities and their overall effects on scenic vistas, scenic resources within a state scenic highway, applicable zoning and other regulations governing scenic quality, nighttime lighting, and glare in accordance with Appendix G of the *CEQA Guidelines*.

The analysis considers the construction activities summarized in Section 3.7 in Chapter 3, Transportation, and Section 4.19.2. Construction activities have the potential to temporarily alter the visual character and quality of the Affected Area for visual because these activities could introduce heavy equipment to the area (e.g., cranes, bulldozers, scrapers, and trucks), security fencing, barricade materials, noise barriers or noise-control curtains (Mitigation Measure NOI-6 [Noise Control Plan] in Section 4.19.3.7), stockpiled building materials, and safety and directional signage into the view corridor of public streets, sidewalks, rail ROWs, and properties where construction will occur. Mature vegetation, including trees, will be removed from some areas. Staging areas will be located primarily on surface parking lots and on commercial, industrial, or vacant properties.

Locally Preferred Alternative

No scenic vistas are located within the Affected Area for visual. In each landscape unit, nighttime construction may be required for certain construction activities, such as trackwork and catenary wire installation. Generally, construction activities are not a substantial source of light or glare. However, nighttime construction work may be required and could increase nighttime light or glare in the Affected Area for visual. If nighttime lighting spills over onto nearby areas or is not shielded in a manner to prevent glare, the additional lighting and glare will be inconsistent with the visual character of the Affected Area for visual, and sensitive viewers will be highly sensitive to the change, if not mitigated. Mitigation Measure VA-4 (Construction Lighting) will be required to reduce spillover light and glare. The following discussion describes other visual effects during construction within each landscape unit that is part of the LPA.

Industrial and Residential Landscape Unit: Construction activities are not expected to obstruct views of the Pueblo Del Rio Public Housing Complex and Salt Lake Park. The Pueblo Del Rio Housing Complex is located half a block north of the construction area, and Salt Lake Park is located across the street from the San Pedro Subdivision ROW where construction activities will primarily occur. Construction activities along Randolph Street will have the potential to block northerly views of L & F Machine Company from the south side of the La Habra Branch ROW. Construction activities within the La Habra Branch ROW have the potential to block northerly views of L & F Machine Company and southerly views of 6101 Santa Fe Avenue. Views of L & F Machine Company and 6101 Santa Fe Avenue will remain available north and south of the La Habra Branch ROW, respectively. Residents on the south side of Randolph Street will not be able to see L & F Machine Company during construction; however, these residents will still be able to see the structure at 6101 Santa Fe Avenue. Views of these scenic resources will not be permanently blocked because construction activities and equipment are temporary and will be removed once construction is completed.

Although construction activities, including those that involve nighttime lighting or will create glare, are not expected to degrade visual quality of the landscape unit, which is currently inharmonious, disorderly, and incoherent, sensitive viewers (residents and users of Salt Lake Park) are located in this landscape unit and will be able to see construction activities. If nighttime construction activities occur near these sensitive viewers, these sensitive viewers could be affected by spillover lighting and glare. These sensitive viewers will be highly sensitive to the change in lighting and glare. Thus, construction activities in these areas could result in adverse effects related to visual quality during construction in the Industrial and Residential Landscape Unit.

Industrial Landscape Unit: The existing visual quality of the landscape unit is inharmonious, disorderly, and incoherent due to the industrial nature of the area, and construction activities, including those that involve nighttime lighting or will create glare, will not further degrade the visual quality of the landscape unit. Construction activities will have the potential to block views of the LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line. Additionally, views of 6000 Alameda Street, 3477 East Gage Avenue, Rio Hondo channel, Rancho Los Amigos – South Campus, and San Gabriel River channel have the potential to be partially blocked. However, no sensitive viewers have views of these scenic resources. Additionally, views of these scenic resources will not be permanently blocked because construction activities and equipment are temporary and will be removed once construction is completed.

Construction activities have the potential to partially block views of the Rio Hondo channel from the Rio Hondo River Trail, Garfield Avenue, and Imperial Highway; and views of the San Gabriel River channel from the San Gabriel River Trail, SR-91, and Artesia Boulevard. Views of the Rio Hondo channel and San Gabriel River channel from the street ROWs are at an angle and are relatively brief because the roadways are primarily used for vehicular travel. The lack of public parking and stopover points around these roadways make it difficult for the public to access the area, as well as the Rio Hondo River Trail and San Gabriel River Trail for the purposes of viewing the Rio Hondo channel and San Gabriel River channel. As a result, viewer sensitivity at the street ROWs is low and construction activities are not expected to further degrade views of the Rio Hondo channel and San Gabriel River channel. Some residents have views of the San Gabriel River channel through their rear yards. However, construction activities are not expected to further degrade the residents' view of the San Gabriel River channel because the San Gabriel River channel is located in an area with a mix of residential, industrial, and infrastructure-related uses. Additionally, views of the Rio Hondo channel and San Gabriel River channel will not be permanently blocked since construction activities and equipment are temporary and will be removed once construction is completed.

Construction activities will not block views of 6231 Maywood Avenue, Hollydale Community Park, Valley Christian Junior High School, and Valley Christian High School. Construction activities will not block views of I-105 because construction will occur within the median and above I-105. Views of the Southern California Edison Long Beach to Laguna Bell Transmission Line are currently not available in the Affected Area for visual, and construction activities will not affect this scenic resource. At Hollydale Community Park, sensitive viewers (users of Hollydale Community Park and residents) will be able to see construction activities occurring within the PEROW behind Hollydale Community Park. If nighttime construction activities occur, spillover lighting and glare from construction areas could affect these sensitive viewers. These sensitive viewers will be highly sensitive to changes in lighting and glare. Because sensitive viewers will be able to see construction activities at Hollydale Community Park and could be affected by spillover lighting and glare, construction activities in these areas will result in adverse effects related to visual quality in the Industrial Landscape Unit.

Residential Landscape Unit: Construction activities, including those that involve nighttime lighting or will create glare, will temporarily alter the visual character of this landscape unit but are not expected to degrade visual character and quality because the existing visual quality in the landscape unit is inharmonious, disorderly, and incoherent. Additionally, construction activities will not obstruct views of scenic resources. However, sensitive viewers (e.g., residents) facing the rail ROWs will be able to see the construction areas and will be sensitive to the change in visual character and quality. If nighttime construction activities occur in these areas and will result in spillover lighting and glare, sensitive viewers will also be highly sensitive to the changes in lighting and glare. Therefore, construction activities in these areas could result in adverse effects related to visual quality during construction in the Residential Landscape Unit.

Suburban Residential and Industrial Landscape Unit: Construction activities will not block views of Paramount Park but have the potential to block views of the Los Angeles River truss bridge from the residential area along Salt Lake Avenue between Southern Avenue and the Los Angeles River, from Firestone Boulevard, and along the Los Angeles River Bike Path north of the bridge. Construction of the LRT bridge across the Los Angeles River will not

obstruct views of the Los Angeles River truss bridge along the I-710 freeway. Views of the Los Angeles River channel will be partially obstructed by construction activities from the Los Angeles River Bike Path, I-710 freeway, and Firestone Boulevard. Views of the Los Angeles River channel are not available at the residential area along Salt Lake Avenue between Southern Avenue and the Los Angeles River. Existing views of the Los Angeles River truss bridge and Los Angeles River channel along Firestone Boulevard and I-710 are at an angle and are relatively brief because the street is primarily used for vehicular travel. The heavily industrialized area, along with the lack of public parking and stopover points around I-710, Firestone Boulevard, and the Los Angeles River Bike Path make it difficult for the public to access the area for the purpose of viewing the Los Angeles River channel and truss bridge. As a result, construction activities are not expected to adversely affect views of the Los Angeles River channel and Los Angeles River truss bridge at I-710, Firestone Boulevard, and along the Los Angeles River Bike Path. Although views of the truss bridge could temporarily be blocked at the residential area south of Southern Avenue, views of the bridge from the residential area are generally at an angle. Additionally, construction activities are temporary, and views of the truss bridge at the residential area will be available upon completion of construction in the area.

Southwesterly views of "Defiance" from Paramount Boulevard and easterly views from Rosecrans Avenue (east of Paramount Boulevard) will also be obstructed. Upon completion of construction in the area, southwesterly views from Paramount Boulevard and easterly views from Rosecrans Avenue will be available. Views of "Defiance" will remain available along the south side of Rosecrans Avenue during construction.

Construction activities, including those that involve nighttime lighting or will create glare, will temporarily alter the visual character of this landscape unit but are not expected to degrade visual character and quality because the existing visual quality in the landscape unit is inharmonious, disorderly, and incoherent. However, sensitive viewers will be able to see construction activities. If nighttime construction activities occur in these areas and will result in spillover lighting and glare, sensitive viewers will also be highly sensitive to the changes in lighting and glare. Therefore, construction activities in these areas could result in adverse effects related to visual quality during construction in the Suburban Residential and Industrial Landscape Unit.

Suburban Residential Landscape Unit: Construction activities are not expected to obstruct views of 10040 Flora Vista Street, Ruth R. Caruthers Park, Rosewood Park, the Artesia Historical Museum, and Old Station #30 because construction activities will occur behind these facilities. Existing landscaping and screened fences along the perimeter of 10040 Flora Vista Street, Ruth R. Caruthers Park adjacent to the PEROW, and an existing wall along the perimeter of Rosewood Park facing the PEROW will obscure views of construction activities within the PEROW. While construction activities could block southerly views of the original Bellflower Pacific Electric Station, easterly and northerly views of this scenic resource will remain available.

Construction activities, which include the construction of aerial structures and the placement of concrete barriers and fencing along the perimeter of the construction areas, will be visible to sensitive viewers. Additionally, construction activities, including those that involve nighttime lighting or will create glare, will temporarily alter the visual character and quality of the Affected Area for visual. However, construction activities are not expected to degrade visual character and quality of the landscape unit because the existing visual quality of the Affected

Area for visual is inharmonious, disorderly, and incoherent. Construction activities are temporary and construction barriers and equipment will be removed once construction is completed. However, sensitive viewers will be able to see construction activities. If nighttime construction activities occur in these areas and will result in spillover lighting and glare, sensitive viewers will also be highly sensitive to the changes in lighting and glare. Therefore, construction activities in these areas could result in adverse effects related to visual quality during construction in the Suburban Residential Landscape Unit.

Summary of Visual Character and Quality: Construction activities, including those that involve nighttime lighting or will create glare, will be visible to sensitive viewers (e.g., residents and users of Hollydale Community Park) and could temporarily alter, but are not expected to degrade, the visual character and quality of the Affected Area for visual. Therefore, construction activities in these areas could result in adverse effects related to visual quality during construction.

Mitigation Measure VA-3 (Construction Screening) will provide screening to obstruct views of construction areas from sensitive viewers, such as residents, park users, and visitors of scenic resources. Mitigation Measure NOI-6 (Noise Control Plan) (described in Section 4.19.3.7 [Construction-related Noise and Vibration]) could reduce significant impacts that construction will have on visual quality. Specifically, this mitigation measure could require that equipment and staging areas be located away from noise-sensitive receivers, which also include some sensitive viewers (such as residences). Mitigation Measure NOI-6 (Noise Control Plan) could also require the installation of temporary noise barriers or noise-control curtains. Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan) will screen views of construction activities, limit the amount of light that could spill over onto adjacent areas, and limit glare from affecting sensitive viewers. In addition, Mitigation Measure VA-4 (Construction Lighting) will require lighting to be directed toward the interior of construction areas and shielded to limit spillover light on adjacent areas and to reduce glare. Construction activities, equipment, and lighting are temporary and will be removed once construction is completed. Upon completion of construction activities adjacent to scenic resources, views of the scenic resources will no longer be obstructed. Under NEPA, with implementation of Mitigation Measures VA-3 (Construction Screening), VA-4 (Construction Lighting), and NOI-6 (Noise Control Plan), the LPA will not result in adverse effects related to visual quality during construction.

Design Option: Close 186th Street

In the vicinity of 186th Street, construction activities associated with the LPA with the design option would be substantially similar to those for the LPA without the design option, which would be substantially similar to the construction activities for the at-grade portions of the LPA. Construction activities would be visible to viewer groups in the Affected Area for visual where 186th Street intersects with the PEROW. Sensitive viewers that would have views of construction activities include residents along 186th Street. No scenic resources are in the Affected Area for visual at the location of the design option. Construction activities would temporarily alter the visual character of the Affected Area for visual around 186th Street. However, construction activities would not significantly degrade the visual character and quality of the Affected Area for visual because no notable scenic resources are located in this area and the visual quality of the PEROW and public right-of-way on which construction activities would be located do not contain features that beneficially contribute to the visual quality of the Affected Area for visual.

Construction activities associated with the design option may require nighttime and weekend construction, which could increase nighttime light or glare along 186th Street. Residences in the Affected Area for visual could be affected by nighttime light or glare if light spills over to the residences or if lighting is not shielded to limit glare at these residences.

The use of construction equipment and lighting would be temporary and would be removed once construction is completed. However, residents along 186th Street would have views of construction activities and would be highly sensitive to the effects associated with spillover lighting and glare. As a result, adverse effects would occur. Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan) would limit views of construction activities from residential areas. These mitigation measures, in addition to Mitigation Measure VA-4 (Construction Lighting), would also limit the amount of light that could spill over onto adjacent areas and reduce glare. These construction effects and mitigation for the LPA with the design option would be similar to those for the LPA without the design option. Therefore, under NEPA, with implementation of mitigation measures, the design option would not result in adverse effects related to visual quality during construction.

Maintenance and Storage Facility

Although residential uses are located to the east, northwest, and north of the MSF site, tall trees and vines along the easterly and northerly perimeters currently block views of the MSF from residential uses east and north of the site, respectively. The existing wall along the northwest perimeter of the site will block views of construction from the mobile home community. The tall trees, vines, and walls are likely to remain in place during construction of the MSF. However, if the landscaping and barriers were removed during construction, views of construction activities within the MSF site will be visible at the residential areas until other types of landscaping and barriers are installed to obstruct views of the MSF, and adverse effects will occur. Implementation of Mitigation Measure VA-3 (Construction Screening) will provide construction screening that will block views of the construction area from residents. Mitigation Measure NOI-6 (Noise Control Plan) could also block views of construction activities from residential uses if temporary noise barriers are installed in the residential area.

If nighttime construction is required, residential uses surrounding the MSF site could be affected if light spills over to the residences or if lighting is not shielded to limit glare at these residences. Residents will be highly sensitive to the effects associated with spillover lighting and glare. Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan), in addition to Mitigation Measure VA-4 (Construction Lighting), will limit the amount of light that could spill over onto adjacent areas and reduce glare. Construction is temporary and construction barriers, equipment, and lighting will be removed once construction is completed. Under NEPA, with implementation of mitigation measures, the MSF site will not result in adverse effects related to visual quality during construction.

U.S. Army Corps of Engineers Facilities

Construction of the LPA over the USACE facilities (i.e., the Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel) will involve site preparation, demolition of the existing freight bridge at the San Gabriel River channel, bridge construction, and guideway construction. Construction activities have the potential to temporarily alter the visual character and quality of the Affected Area for visual because it will introduce heavy equipment, lighting (if nighttime construction activities were to occur), and stockpiled

building materials into the view corridor of the surrounding streets and properties. If nighttime construction is to occur, lighting would not be expected to spillover or create glare onto nearby roadways or properties.

The Los Angeles River truss bridge, Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel are scenic resources. Construction at the Los Angeles River channel has the potential to block views of the Los Angeles River truss bridge and the Los Angeles River from the Los Angeles River Bike Path and nearby street ROWs. Construction activities also have the potential to block views at the Rio Hondo channel and San Gabriel River channel from the Rio Hondo River Trail and San Gabriel River Trail, respectively, as well as from nearby street ROWs. However, construction activities are not expected to result in adverse effects on visual character and quality. Existing views of the Los Angeles River truss bridge, the Los Angeles River channel, the Rio Hondo channel, and the San Gabriel River channel along the street ROWs are at an angle and are relatively brief since the streets are primarily used for vehicular travel. The lack of public parking and stopover points around the street ROWs near the three river channels, the Los Angeles River Bike Path, the Rio Hondo River Trail, and the San Gabriel River Trail make it difficult for the public to access the areas for the purpose of viewing the Los Angeles River truss bridge and the three river channels. As a result, viewer sensitivity at the Los Angeles River truss bridge and the three river channels is low, and construction activities are not expected to further degrade the visual character and quality of the Los Angeles River truss bridge and the three river channels.

Views of the Los Angeles River truss bridge could also be blocked at the residential area along Salt Lake Avenue between Southern Avenue and the Los Angeles River. These residences do not have views of the Los Angeles River. Existing views of the Los Angeles River truss bridge from the residential area south of Southern Avenue are generally at an angle. These angled views of the Los Angeles River truss bridge may temporarily be blocked at this residential area during construction. However, construction activities are temporary, and construction barriers, equipment, and lighting will be removed once construction is completed. Views of the truss bridge from the residential area will be available upon completion of construction in this area. Additionally, Mitigation Measure VA-3 (Construction Screening) will limit views of construction activities from this residential area. Mitigation Measure VA-4 (Construction Lighting) will also prevent spillover lighting and glare from affecting the residences.

Construction activities are not expected to degrade the visual character and quality of the concrete-lined Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel since the existing visual quality in the Affected Area for visual is inharmonious, disorderly, and incoherent. Additionally, construction is temporary and construction barriers, equipment, and lighting will be removed once construction is completed. No adverse effects are expected at the USACE facilities with implementation of Mitigation Measures VA-3 (Construction Screening) and VA-4 (Construction Lighting).

Project Measures and Mitigation Measures

Project Measures

No project measures are required during construction.

Mitigation Measures

VA-3 Construction Screening. During construction, the perimeter of construction staging areas and laydown areas will be screened to shield construction activities and laydown areas from adjacent visually sensitive land uses, including the following:

- Residential properties
- Salt Lake Park (City of Huntington Park)
- Hollydale Community Park (City of South Gate)
- Original Bellflower Pacific Electric Station (City of Bellflower)
- Artesia Historical Museum (City of Artesia)
- Old Station #30 (City of Artesia)

The screening will be designed consistent with the Metro requirements and in coordination with cities and may incorporate artwork, Metro-branded design treatment, and/or community-relevant messaging.

VA-4 Construction Lighting. During construction, nighttime construction lighting will be directed toward the interior of the construction area and shielded with temporary construction screening approved by Metro to limit light spillover into adjacent areas.

Mitigation Measure VA-4 (Construction Lighting) is required for impacts under CEQA only. Also refer to Mitigation Measure NOI-6 (Noise Control Plan) in Section 4.19.3.7.

California Environmental Quality Act Determination

Threshold VIS-CON-1: Would the Project have a substantial adverse effect on a scenic vista?

No Project Alternative

No scenic vistas are located within the Affected Area for visual and no project-related construction activities would occur under the No Project Alternative. Therefore, no mitigation measures are required, and no construction-related impacts would occur.

Locally Preferred Alternative, Design Option, and Maintenance and Storage Facility

There are no scenic vistas within the Affected Area for visual associated with the LPA, design option, or MSF site. Therefore, there will be no impact to scenic vistas, and mitigation will not be required.

Threshold VIS-CON-2: Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Project Alternative

Construction activities would not occur under the No Project Alternative; therefore, no construction-related impacts would occur to scenic resources, and mitigation would not be required.

Locally Preferred Alternative, Design Option, and Maintenance and Storage Facility

No state scenic highways are located within the Affected Area for visual associated with the LPA, design option, or MSF site; therefore, no scenic resources within a state scenic highway will be affected by construction activities. No construction-related impacts will occur, and mitigation will not be required.

Threshold VIS-CON-3: In nonurbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

No Project Alternative

No construction activities would occur under the No Project Alternative and the visual character and quality of the Affected Area for visual would remain similar to existing conditions. Therefore, no construction-related impacts would occur, and mitigation would not be required.

Locally Preferred Alternative

Based on the definition contained within *CEQA Guidelines* Section 15387, the jurisdictions within the Affected Area for visual are urbanized areas, and significant impacts will occur if project-related construction will conflict with applicable zoning and other regulations governing scenic quality.

The municipal codes of the affected jurisdictions generally do not contain regulations that govern scenic quality during construction. However, SCAQMD Rule 403 will have the potential to beneficially affect visual quality during construction by reducing the amount of visible dirt and dust along public rights-of-way (e.g., sidewalks and roadways) and properties in the Affected Area for visual beyond the construction area. Rule 403 does not permit track-out dust to extend 25 feet or more beyond the active construction area and requires all track-out dirt to be removed at the end of each workday or evening shift. Project-related construction activities will be required to comply with this rule.

Construction has the potential to temporarily alter the visual character and quality of the Affected Area for visual because construction activities will introduce heavy equipment (e.g., cranes, bulldozers, scrapers, and trucks), security fencing, barricade materials, stockpiled building materials, and safety and directional signage into the view corridor of public streets, sidewalks, and properties where construction will occur. However, construction activities and equipment are temporary and will be removed once construction is completed. Although the municipal codes of the affected jurisdictions do not contain regulations that govern scenic quality during construction, implementation of Mitigation Measures VA-3 (Construction Screening), and NOI-6 (Noise Control Plan) will reduce construction-related effects on visual character and quality. Mitigation Measure VA-3 (Construction Screening) will screen construction activities from sensitive viewers. Mitigation Measure NOI-6 (Noise Control Plan) will reduce the significant effects that construction could have on visual quality because this mitigation measure will require that equipment and staging areas be located away from noise-sensitive receivers, which also include some sensitive viewers (such as residences). Mitigation Measure NOI-6 (Noise Control Plan) will also require the installation of temporary noise barriers or noise-control curtains, both of which will screen views of construction activities. With implementation of these mitigation measures, the visual character and quality for sensitive viewers in the Affected Area for visual will not be degraded during construction.

Because the LPA will not conflict with applicable regulations governing scenic quality during construction and will implement Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan) to reduce construction-related effects on visual character and quality on sensitive viewers and scenic resources, impacts on visual character and quality

during construction will be less than significant with implementation of mitigation measures.

Mitigation Measures: Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Design Option: Close 186th Street

Similar to construction of the LPA without the design option, construction of the LPA with the design option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403. Construction of the LPA with the design option would not conflict with applicable regulations governing scenic quality. Implementation of Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan) would reduce impacts such that visual character and quality for sensitive viewers would not be degraded during construction. Therefore, impacts would be less than significant with implementation of mitigation measures.

Mitigation Measures: Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Maintenance and Storage Facility

Construction of the MSF site will comply with applicable regulations governing scenic quality, including SCAQMD Rule 403. Although construction of the MSF site will not conflict with applicable regulations governing scenic quality, Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan) will be implemented to avoid impacts to visual character and quality for sensitive viewers in the Affected Area for visual. Therefore, impacts will be less than significant with implementation of mitigation measures.

Mitigation Measures: Mitigation Measures VA-3 (Construction Screening) and NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Threshold VIS-CON-4: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Project Alternative

No project-related construction activities would occur under the No Project Alternative and new sources of light and glare would not be introduced. Therefore, no mitigation measures are required, and no construction-related impacts would occur.

Locally Preferred Alternative

Hours of construction will vary to meet the type of work being performed and to meet local ordinance restrictions. Nighttime and weekend construction may be required and may include, but not be limited to, trackwork, catenary wire installation, and other construction at at-grade crossings. Generally, construction activities will not result in a substantial source of light or glare. However, nighttime construction work could increase nighttime light or glare in the Affected Area for visual and temporarily affect visibility and result in temporary

significant impacts related to spillover lighting and glare if not mitigated. Potential impacts related to construction-related spillover lighting and glare will be reduced to less than significant levels with the implementation of Mitigation Measure VA-4 (Construction Lighting).

Mitigation Measures: Mitigation Measure VA-4 (Construction Lighting)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Design Option: Close 186th Street

Residences in the Affected Area for visual could be affected by nighttime light or glare associated with construction of the design option, if construction activities occur at night, which could result in significant impacts. Consistent with the LPA without the design option, potential impacts related to construction-related spillover lighting and glare would be reduced to less than significant levels with implementation of Mitigation Measure VA-4 (Construction Lighting).

Mitigation Measures: Mitigation Measure VA-4 (Construction Lighting)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

Maintenance and Storage Facility

Construction activities associated with the MSF may require nighttime and weekend construction, which could increase nighttime light or glare for the MSF site. Residential uses surrounding the MSF site could be affected by nighttime light or glare from construction occurring on the MSF site. Therefore, significant impacts on light and glare could occur. Potential impacts related to construction-related spillover lighting and glare will be reduced to less than significant levels with implementation of Mitigation Measure VA-4 (Construction Lighting).

Mitigation Measures: Mitigation Measure VA-4 (Construction Lighting)

Impacts Remaining After Mitigation: Less than significant impact after mitigation.

4.19.3.5 Air Quality

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. The section has also been revised to reflect an updated conceptual construction schedule. The earliest year for regional construction emissions was assumed to be 2022 in the Draft EIS/EIR, with construction lasting through 2028. Based on the updated conceptual construction schedule, the air quality analysis within this Final EIS/EIR assumes that the earliest year for construction emissions is 2024. The analysis also considers four scenarios of concurrent construction activities that will occur in a given year (e.g., 2029, 2029/2030, and 2031). Early utility relocations and freight track relocations may briefly overlap; therefore, a 2025 emissions scenario is also assessed, although on a daily basis these activities are anticipated to require less intense equipment use. Additionally, the modeling tools used in support of the analysis were updated, as further described under the heading "Methodology."

Additionally, in response to comments on the Draft EIS/EIR, this section has been updated to provide a more detailed analysis of the construction odors or visible dust that construction activities will generate. Updates to the discussion do not change the conclusions related to air

quality, and no adverse effects related to construction odors or visible dust will occur during construction of the LPA.

Additionally, as a result of stakeholder coordination, Project Measure AQ PM-1 (Metro Green Construction Policy) was added to this section. The construction-related air quality analysis included in the Draft EIS/EIR analysis assumed compliance with the Metro Green Construction Policy. This compliance is now formally identified as a project measure. Impacts to air quality are unchanged from those presented for Alternative 3 in the Draft EIS/EIR. Construction activities related to the LPA will not result in adverse effects related to air quality.

Methodology

The air quality assessment of construction emissions for the Draft EIS/EIR used CalEEMod Version 2016.3.2 to prepare the analysis. Since the original air quality assessment was prepared for the Draft EIS/EIR, new iterations of air quality analytical tools were published by the CARB, CAPCOA, and the California air districts. For the Final EIS/EIR analysis, CalEEMod (Version 2020.4.0) was used to estimate air pollutant emissions that will be generated by LPA construction activities and accounts for emissions from off-road construction equipment exhaust; on-road mobile vehicle travel associated with workers, vendors, and hauling; and area sources such as fugitive dust generation, architectural coating, and paving. The emissions analysis characterized maximum daily emissions that will be generated by a combination of concurrent activities for the LPA based on an updated conceptual construction schedule. CalEEMod Version 2020.4.0 and its supporting documentation were released in May and June of 2021, and this iteration represents the best available tool for quantifying emissions that will be generated during construction of the LPA.

Regional Emissions The regional portion of the construction air quality assessment evaluated emissions of regulated criteria pollutants and O_3 precursors that will be generated by construction-related activities for the Project occurring within the basin. This includes all sources and activities located along the LRT alignment and on construction sites, and all vehicle travel and source activity on the regional roadway network involved in construction activities. The regional emissions analysis for this Final EIS/EIR is based on the updated conceptual construction schedule with construction assumed to be underway at several construction sites concurrently at various locations along the alignment. Table 4.19.5 presents a summary of the CalEEMod (Version 2020.4.0) input parameters used to estimate combinations of reasonable maximum daily construction activities and resulting air pollutant emissions.

Based on the conceptual construction schedule and Metro's experience in developing new LRT lines, on a given day construction of the LPA may require up to 60 pieces of off-road equipment, up to 750 daily crew members commuting to construction sites, up to 120 hauling loads of bulk material disposals, and up to 80 deliveries of building supplies and materials to the construction sites during peak activity intervals of various phases of work. The equipment inventories, vehicle trips, and material displacement were populated and allocated using best available information and experiential knowledge of Metro LRT projects while taking into account feasibility constraints. The earliest year for regional construction emissions was assumed to be 2024, and four scenarios of concurrent construction activities in a given year is anticipated during the time period from 2029 to 2031. Additionally, early utility relocations and freight track relocations may briefly overlap; therefore, a 2025 emissions scenario is also assessed, although on a daily basis these activities are anticipated to require less intense equipment use and fewer heavy-duty truck trips than the later construction scenarios.

Table 4.19.5. Examples of the Regional Emissions Analysis Source Activity

Construction Activity Combinations	Off-Road Equipment Count	Daily Construction Workers	Daily Vendor Deliveries	Daily Haul Truckloads
Scenario 1: Early Utilities and Freight Track Relocations (2025)				
Utility Relocations	16	250	25	-
Freight Track Relocations	16	250	25	-
Totals	32	500	50	-
Scenario 2: Demolition and Site Work, Utility Relocations, Guideway and Tracks, and Stations (2029)				
Demolition and Site Work	15	125	20	30
Utility Relocations	10	125	10	30
Guideway and Tracks	20	250	30	40
Stations	15	250	20	20
Totals	60	750	80	120
Scenario 3: Utility Relocations, Guideway and Tracks, Stations, and MSF (2029/2030)				
Utility Relocations	10	125	10	30
Guideway and Tracks	20	250	30	40
Stations	15	250	20	20
MSF	15	125	20	30
Totals	60	750	80	120
Scenario 4: Guideway and Tracks, Stations, and Systems (2031)				
Guideway and Tracks	20	250	40	100
Stations	20	250	20	20
Systems	20	250	20	-
Totals	60	750	80	120

Source: Metro, 2024i
Note: MSF = maintenance and storage facility

Furthermore, the differences in excavation and infill volumes will affect the duration of the excavation and fill activities but not the maximum daily activity intensity. The regional emissions analysis focuses on maximum daily pollutant emissions.

For the NEPA and CEQA analyses, regional emissions are evaluated in the context of the SCAQMD Air Quality Significance Thresholds. SCAQMD established maximum daily emissions threshold values for volatile organic compounds, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ as a quantitative guideline for identifying potentially significant air quality impacts from CEQA projects. A significant air quality impact may occur if maximum daily emissions exceed any of the regional mass daily threshold values. Maximum daily regional emissions that will be generated by project construction were compared to the SCAQMD mass daily thresholds presented in Table 4.19.6.

Table 4.19.6. SCAQMD Air Quality Significance Thresholds – Construction Mass Daily Thresholds

Pollutant	Threshold Value (lbs/day)
Volatile Organic Compounds (VOC)	75
Nitrogen Oxides (NO_X)	100
Carbon Monoxide (CO)	50
Sulfur Oxides (SO_X)	150
Respirable Particulate Matter (PM_{10})	150
Fine Particulate Matter ($PM_{2.5}$)	55
Lead (Pb)	3

Source: SCAQMD 2015
Note: lbs/day = pounds per day

Localized Emissions: SCAQMD guidance recommends an assessment of localized air quality impacts near construction sites. The localized analysis focuses on emission sources located on the construction site itself and does not include regional vehicle travel and other remote emissions. Using ambient air monitoring data from 37 monitoring sites throughout the basin in conjunction with air dispersion modeling, SCAQMD determined regionally specific incremental increases in localized pollutant concentrations throughout the basin that could constitute a significant air quality impact by exceeding an applicable air quality standard. The basin was subdivided into SRAs based on proximity to the nearest monitoring station and local topography. The project corridor transects portions of SRA 1 (Central LA County), SRA 4 (South Coastal LA County), SRA 5 (Southeast LA County), and SRA 12 (South Central LA County).

Under the SCAQMD Localized Significance Thresholds (LST) methodology, daily emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ from sources located on the construction site are compared to regionally specific quantitative threshold values derived for each SRA based on construction site size and proximity of sensitive receptors. Table 4.19.7 presents the applicable SCAQMD LST values based on construction site location, size, receptor proximity, and maximum daily ground area disturbance for each site analyzed. Applicable LST values were determined in accordance with the SCAQMD *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* (SCAQMD 2015).

Localized emissions for construction were analyzed for each project component: aerial station and guideway; at-grade station and guideway; parking facilities; and MSF. The various construction activities that will occur throughout the project corridor were compared to the corresponding LST values.

Additionally, SCAQMD states that a project would generate significant emissions of toxic air contaminants if exposures to a sensitive receptor exceed a Maximum Incremental Cancer Risk of 10 in one million, a Cancer Burden of 0.5 excess cancer cases, or a Chronic or Acute Hazard Index of 1.0. No specific threshold has been established for assessing potential impacts from odors.

Table 4.19.7. SCAQMD Localized Significance Thresholds – Construction

Source Receptor Area	Site Size (Acres)	Receptor Distance (m)	Threshold (lbs/day)			
			CO	NO_X	PM_{10}	$PM_{2.5}$
1 (Central LA County)	≤1	25	680	74	5	3
		50	882	74	15	5
		100	1,259	82	33	10
		200	2,406	106	70	24
		500	7,911	168	179	102
	2	25	1,048	108	8	5
		50	1,368	106	25	7
		100	1,799	110	43	12
		200	3,016	126	80	28
		500	8,637	179	190	110
	5	25	1,861	161	16	8
		50	2,331	157	50	11
		100	3,030	165	69	18
		200	4,547	173	107	36
		500	10,666	212	219	126
4 (South Coastal LA County)	≤1	25	585	57	4	3
		50	789	58	13	5
		100	1,180	68	29	10
		200	2,296	90	61	26
		500	7,558	142	158	93
	2	25	842	82	7	5
		50	1,158	80	21	7
		100	1,611	87	37	13
		200	2,869	106	70	30
		500	8,253	151	167	101
	5	25	1,530	123	14	8
		50	1,982	118	42	10
		100	2,613	126	58	18
		200	4,184	141	92	39
		500	10,198	179	191	120

Source Receptor Area	Site Size (Acres)	Receptor Distance (m)	Threshold (lbs/day)			
			CO	NO_X	PM_{10}	$PM_{2.5}$
5 (Southeast LA County)	**≤1**	25	571	80	4	3
		50	735	81	13	4
		100	1,088	94	30	8
		200	2,104	123	66	19
		500	6,854	192	173	86
	2	25	681	114	7	4
		50	1,082	111	21	6
		100	1,496	121	39	10
		200	2,625	145	74	22
		500	7,500	205	182	92
	5	25	1,480	172	14	7
		50	1,855	165	42	10
		100	2,437	176	60	15
		200	3,867	194	95	30
		500	9,312	244	203	103
12 (South Central LA County)	**≤1**	25	231	46	4	3
		50	342	46	12	4
		100	632	54	26	7
		200	1,545	70	54	17
		500	5,452	109	139	70
	2	25	346	65	7	4
		50	515	64	20	6
		100	841	69	34	9
		200	1,817	82	62	19
		500	5,962	117	146	74
	5	25	630	98	13	7
		50	879	84	41	10
		100	1,368	101	55	15
		200	2,514	111	83	27
		500	7,389	139	166	86

Source: SCAQMD 2009
Notes: LA = Los Angeles; SRA = Source Receptor Area; lbs/day = pounds per day; m = meters; CO = carbon monoxide; NO_X = nitrogen oxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns

Each component will be constructed with the same off-road equipment inventory and on-road vehicle fleet and will employ the same types of activities and techniques to complete. Maximum daily emissions generated by on-site sources (i.e., equipment exhaust and fugitive dust) at the various sites were quantified using CalEEMod (Version 2020.4.0) and the activity-specific equipment inventories outlined in Table 4.19.5.

All construction activities for the LPA will be conducted in accordance with the Metro *Green Construction Policy* (Metro 2011b) (per Project Measure AQ PM-1 (Metro Green Construction Policy), and all emissions analyses account for adherence to the mandatory provisions of that policy. Mandatory provisions include the use of construction equipment with engines meeting Tier 4 final emissions standards and the use of haul trucks that comply with 2007 USEPA on-road emission standards for PM (0.01 g/bhp-hr) and NO_X (1.2 g/bhp-hr). Sources included in the emissions analysis are summarized in Table 4.19.5.

Construction Activities: Construction of the LPA will take place over approximately eight years. Construction activities are summarized in Section 3.7 in Chapter 3, Transportation, and Section 4.19.2. Several activities and components of the LPA will be implemented, and throughout the overall schedule, varying combinations of activities will occur concurrently at multiple locations along the LPA. There may be periods during which various components of the LPA are under construction concurrently throughout the 14.5-mile alignment. Additionally, some portions may be constructed in phases with activities occurring progressively from south to north along the alignment, or vice versa. The air quality analysis for construction accounted for the maximum amount of construction activities that may be ongoing concurrently at any given time throughout the eight-year period. Refer to Table 4.19.1 for construction durations and equipment.

Construction of the LPA will require substantial excavation to accommodate the system components. A summary of the soil export and fill import quantities for the LPA is provided in Table 4.19.8. Daily haul truck activity will fluctuate throughout the course of construction. Based on feasibility constraints and preliminary schedule coordination, maximum daily truck activity will not exceed 120 hauling loads and 80 material deliveries throughout the LPA corridor.

Table 4.19.8. Export and Import Quantities—Locally Preferred Alternative

	Total Export (cubic yards)[1]	Export Truck Loads (20-cubic yard trucks)	Total Import (cubic yards)[1]	Import Truck Loads (10-cubic yard trucks)
Locally Preferred Alternative	**78,600**	**3,950**	**547,300**	**54,750**

Source: WSP 2023
Notes: [1] Rounded to nearest hundred

All construction activities will be required to comply with the provisions of the Metro *Green Construction Policy* (Metro 2011b) (per Project Measure AQ PM-1 [Metro Green Construction Policy]), which requires stringent equipment and vehicle inspection and maintenance programs so that operations are within desired manufacturer specifications. Additionally, construction activities will adhere to BMPs to control emissions and exposures to air pollution generated by construction. The BMPs will apply to all construction staging areas throughout the project corridor and will avoid generation of excessive emissions in relocating equipment and material stockpiles. Adhering to BMP provisions contained in the Metro *Green Construction Policy* will comply with SCAQMD Rule 403 governing fugitive dust control.

Locally Preferred Alternative

Criteria Pollutant and Ozone Precursor Emissions: Construction of the LPA will involve a variety of construction activities throughout the 14.5-mile alignment and will implement Project Measure AQ PM-1 (Metro Green Construction Policy). As demonstrated in Table 4.19.5, the emission modeling for LPA construction included reasonably conservative assumptions of up to 750 daily construction crew vehicles, 120 daily truckloads of bulk material hauling, and 80 deliveries of materials to the construction sites. Table 4.19.9 presents the maximum daily emissions that will be generated by concurrent activities during construction of the LPA, as well as the SCAQMD Air Quality Significance Thresholds for mass daily emissions at the regional level.

Table 4.19.9. Maximum Daily Regional Emissions during Construction of the LPA (2024–2032)

Emissions Source	Emissions (lbs./day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Equipment Exhaust	5	23	173	<1	<1	<1
On-Site Dust and Vapors	42	-	-	-	12	6
Material Hauling	<1	32	9	<1	5	2
Vendor Deliveries	<1	8	3	<1	2	<1
Crew Worker Trips	4	2	37	<1	17	4
Total	50	65	221	0.5	35	12
SCAQMD Threshold	75	100	550	150	150	55

Sources: Metro 2024i, SCAQMD 2023
Notes: Numbers are rounded to nearest whole number.
CO = carbon monoxide; lbs/day = pounds per day; LPA = Locally Preferred Alternative; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; ROG = reactive organic gases; SCAQMD = South Coast Air Quality Management District; SO_x = sulfur oxides

During construction of the LPA, maximum daily regional emissions of the six pollutants for which SCAQMD has established regional mass daily thresholds will remain below the threshold screening values. Relative to the emissions described in the Draft EIS/EIR, LPA construction emissions are lower due to the later start of construction (2024 compared to the prior analysis of 2022). Under NEPA, emissions during construction of the LPA will not result in an adverse effect related to air quality and mitigation is not required.

Odors and Dust: Construction of the LPA will not generate a substantial source of construction odors or visible dust. Construction activities will use a variety of gasoline or diesel-powered equipment that emit exhaust fumes as well as asphalt paving, which has a distinctive odor during application. Persons within proximity to the construction work area may find these odors objectionable or result in a temporary annoyance if the source of odors and dust is excessive. However, it is anticipated that emissions from construction activities will occur intermittently throughout the workday and the associated odors will dissipate rapidly within the immediate vicinity of the work area.

Construction activities will generate dust emissions that are primarily associated with equipment disturbing the unpaved ground surfaces within the construction area footprint. Dust emissions will be minimized by mandated compliance with SCAQMD Rule 403

(Fugitive Dust) and Rule 402 (Nuisance). The construction contractor is mandated to comply with SCAQMD Rule 403 related to the control of fugitive dust. The LPA will also implement Project Measure AQ PM-1 (Metro Green Construction Policy) that requires construction activities to be conducted in accordance with Metro's *Green Construction Policy,* which includes BMPs related to control strategies such as the application of water or dust suppressants to unpaved areas to maintain soil moisture content and limiting vehicle speeds on unpaved areas to 15 mph.

To evaluate the potential for localized dust impacts to nearby sensitive receptors, emissions that will be generated from on-site sources (i.e., off-road equipment and fugitive dust and vapors) during construction of each component of the LPA were estimated using CalEEMod and compared to the SCAQMD LST screening values for the applicable SRAs. Table 4.19.10 presents the maximum daily emissions that will be generated by individual demolition and relocation sites throughout the LPA corridor, along with the applicable LST values for a 1-acre work site. The LST values are provided for all SRAs in which demolition and relocation activities will occur during construction of the LPA.

Table 4.19.10. Demolition and Relocation Daily Localized Construction Emissions

Description	On-Site Emissions (lbs/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Equipment Exhaust/Area Source	**29.0**	**2.7**	**3.9**	**0.6**
SCAQMD SRA 1 LST Value	680	74	5	3
SCAQMD SRA 4 LST Value	585	57	4	3
SCAQMD SRA 5 LST Value	571	80	4	3
SCAQMD SRA 12 LST Value	231	43	4	3
Exceed SCAQMD LST Threshold? [1]	**No**	**No**	**No**	**No**

Source: Metro 2024i
Notes: [1] The exceedance of SCAQMD thresholds are measured by comparing the "Equipment Exhaust/Area Source" with the SCAQMD Localized Significance Thresholds
CO = carbon monoxide; lbs./day = pounds per day; LST = Localized Significance Threshold; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; SCAQMD = South Coast Air Quality Management District; SRA = Source Receptor Area

Based on the LST analysis, the demolition and relocation activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, demolition and relocation activities will not result in adverse air quality effects related to dust and odors.

Table 4.19.11 presents the maximum daily emissions that will be generated by excavation and grading sites along the LPA and at construction sites, along with the applicable LST values for a 2-acre work site. Based on the LST analysis, excavation and grading activities during LPA construction will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, excavation and grading activities will not result in an adverse air quality effect related to dust and odors.

Table 4.19.11. Excavation and Grading Daily Localized Construction Emissions

Description	On-Site Emissions (lbs./day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Equipment Exhaust/Area Source	**35.8**	**3.5**	**5.6**	**2.7**
SCAQMD SRA 1 LST Value	1,048	108	8	5
SCAQMD SRA 4 LST Value	842	82	7	5
SCAQMD SRA 5 LST Value	861	114	7	4
SCAQMD SRA 12 LST Value	346	65	7	4
Exceed SCAQMD LST Threshold? [1]	**No**	**No**	**No**	**No**

Source: Metro 2024i
Notes: [1] The exceedance of SCAQMD thresholds are measured by comparing the "Equipment Exhaust/Area Source" with the SCAQMD Localized Significance Thresholds
CO = carbon monoxide; lbs./day = pounds per day; LRT = light rail transit; LST = Localized Significance Threshold; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; SCAQMD = South Coast Air Quality Management District; SRA – Source Receptor Areas

Table 4.19.12 presents the maximum daily emissions that will be generated by construction sources on individual at-grade track and station sites throughout the LPA corridor following demolition and site clearing activities, along with the applicable LST values for a 1-acre work site. The LST values are provided for all SRAs in which at-grade LRT segment construction activities along the project corridor will occur. Based on the LST analysis, at-grade construction activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, at-grade construction activities will not result in adverse air quality effects related to dust and odors.

Table 4.19.12. At-Grade Track and Station Daily Localized Construction Emissions

Description	On-Site Emissions (lbs/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Equipment Exhaust/Area Source	**35.6**	**3.3**	**2.8**	**1.4**
SCAQMD SRA 1 LST Value	680	74	5	3
SCAQMD SRA 4 LST Value	585	57	4	3
SCAQMD SRA 5 LST Value	571	80	4	3
SCAQMD SRA 12 LST Value	231	43	4	3
Exceed SCAQMD LST Threshold? [1]	**No**	**No**	**No**	**No**

Source: Metro 2024i
Notes: [1] The exceedance of SCAQMD thresholds are measured by comparing the "Equipment Exhaust/Area Source" with the SCAQMD Localized Significance Thresholds.
CO = carbon monoxide; lbs./day = pounds per day; LST = Localized Significance Threshold; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; SCAQMD = South Coast Air Quality Management District; SRA = Source Receptor Area

Table 4.19.13 presents the maximum daily emissions that will be generated by individual aerial track and station sites throughout the project corridor following demolition and site clearing activities, as well as the applicable LST values for a 1-acre work site for all SRAs in which at-grade LRT segment construction activities along the LPA alignment will occur. Based on the LST analysis, aerial track and station construction activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, aerial track and station construction activities will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

Table 4.19.13. Aerial Track and Station Daily Localized Construction Emissions

Description	On-Site Emissions (lbs./day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Equipment Exhaust/Area Source	**29.4**	**3.0**	**2.8**	**1.4**
SCAQMD SRA 1 LST Value	680	74	5	3
SCAQMD SRA 4 LST Value	585	57	4	3
SCAQMD SRA 5 LST Value	571	80	4	3
SCAQMD SRA 12 LST Value	231	43	4	3
Exceed SCAQMD LST Threshold? [1]	**No**	**No**	**No**	**No**

Source: Metro 2024i

Notes: [1] The exceedance of SCAQMD thresholds are measured by comparing the "Equipment Exhaust/Area Source" with the SCAQMD Localized Significance Thresholds

CO = carbon monoxide; lbs./day = pounds per day; LST = Localized Significance Threshold; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; SCAQMD = South Coast Air Quality Management District; SRA = Source Receptor Area

Table 4.19.14 presents the daily localized emissions that will be generated by construction of the MSF, as well as the applicable LST values for a 2-acre work site in SRA 5. Based on the LST analysis, construction of the MSF will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, construction of the MSF will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

Construction activities will adhere to the stringent provisions of the Metro Green Construction Policy (e.g., equipment maintenance and inspections, restriction of idling, maintaining buffer zones where feasible, and using renewable diesel fuel in off-road equipment) and employ BMPs to prevent the occurrence of a nuisance odor or dust plume in accordance with SCAQMD Rule 402 (Nuisance). Therefore, the LPA will not result in adverse effects related to odor and dust nuisance during construction.

Table 4.19.14. Daily Localized Construction Emissions for the MSF

Construction Phase	Emissions (lbs/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$
Demolition	34.2	3.1	0.9	0.2
Site Preparation	36.5	3.8	5.8	2.8
Building/Track Installation	24.5	3.7	<0.1	<0.1
Paving/Coating/Striping	24.5	1.8	<0.1	<0.1
Maximum Daily Emissions	**36.5**	**3.8**	**5.8**	**2.8**
SCAQMD SRA 5 LST Value	861	114	7	4
Exceed SCAQMD LST Threshold? [1]	**No**	**No**	**No**	**No**

Source: Metro 2024i
Notes: [1] The exceedance of SCAQMD thresholds are measured by comparing the "Equipment Exhaust/Area Source" with the SCAQMD Localized Significance Thresholds
CO = carbon monoxide; lbs./day = pounds per day; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; ROG = reactive organic gases; SCAQMD = South Coast Air Quality Management District; SO_x = sulfur oxides

Design Option: Close 186th Street

Criteria Pollutant and Ozone Precursor Emissions: The LPA with the design option would involve a variety of construction activities throughout the project corridor similar to the LPA without the design option and would implement Project Measure AQ PM-1 (Metro Green Construction Policy) that requires construction activities to be conducted in accordance with Metro's *Green Construction Policy*. Construction of the LPA with the design option would employ the same equipment and vehicle fleet as the LPA without the design option, and the maximum daily construction activity and emissions would be consistent with the LPA without the design option, as shown in Table 4.19.9. Construction of the LPA with the design option would occur over the same duration as the LPA without the design option and would involve the same phases of construction to develop. Construction activities for the LPA with the design option would not result in greater daily source activity or emissions relative to those disclosed during construction of the LPA without the design option. Construction of the LPA with the design option would not result in adverse air quality effects.

Odors and Dust: The analysis of odorous and particulate dust emissions for the LPA with the design option is similar to the discussion provided for the LPA without the design option. The LPA with the design option would involve the same construction activities and would incorporate the same BMPs as construction of the LPA without the design option. The results of the localized analyses presented in Table 4.19.10 through Table 4.19.14 demonstrate that emissions of dust and vapors from on-site sources during construction would not exceed any applicable SCAQMD LST screening values, which are based on the prevention of substantial pollutant concentrations occurring in close vicinity to construction sites. Construction of the LPA with the design option would not have the potential to create nuisance conditions related to odors and dust.

Maintenance and Storage Facility

Criteria Pollutant and Ozone Precursor Emissions: Table 4.19.15 presents the maximum daily emissions that will be generated by construction of the MSF, as well as the SCAQMD Air Quality Significance Thresholds for mass daily emissions at the regional level. Construction of the MSF will include demolition, site clearing, grading, structure and track installation, paving, and architectural coating activities. Construction of the MSF will last approximately two years and Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented, which requires construction activities to be conducted in accordance with Metro's *Green Construction Policy*. Construction of the MSF will not produce emissions exceeding any regional mass daily threshold and no adverse effects will occur.

Table 4.19.15. Maximum Daily Construction Emissions – MSF

Construction Phase	Emissions (lbs./day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Demolition	**2**	**9**	**43**	**<1**	**6**	**2**
Site Preparation	**2**	**14**	**47**	**<1**	**11**	**4**
Building/Track Installation	**2**	**6**	**33**	**<1**	**4**	**1**
Paving/Coating/Striping	**43**	**5**	**32**	**<1**	**4**	**1**
Maximum Daily Emissions	**43**	**14**	**47**	**<1**	**11**	**4**
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**	**55**

Sources: Metro 2024i
Notes: Numbers are rounded to nearest whole number.
CO = carbon monoxide; lbs/day = pounds per day; MSF = maintenance and storage facility; NO_x = nitrogen oxide; $PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns; PM_{10} = respirable particulate matter of diameter less than 10 microns; ROG = reactive organic gases; SCAQMD = South Coast Air Quality Management District; SO_x = sulfur oxides

Odors and Dust: The odors and dust analysis for the MSF is similar to the analysis presented for the LPA. Construction of the MSF will not generate a substantial source of construction odors or visible dust plumes and Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented to employ BMPs in accordance with SCAQMD Rule 402 (Nuisance). Therefore, the MSF will not result in adverse effects related to construction nuisance.

U.S. Army Corps of Engineers Facilities

Criteria Pollutant and Ozone Precursor Emissions: Construction of the LPA will not create adverse air quality conditions at the locations of the USACE facilities. As discussed above, Project Measure AQ PM-1 (Metro Green Construction Policy) implementation will control emissions so that adverse air quality effects do not occur. There are no sensitive receptors at the USACE facilities that could be affected by criteria pollutant and ozone precursor emissions. Therefore, no adverse air quality effects will occur at USACE facilities.

Odors and Dust: Construction of the LPA will employ BMPs in accordance with the Metro Green Construction Policy (per Project Measure AQ PM-1 [Metro Green Construction Policy]) and SCAQMD Rule 403 to control emissions of fugitive dust to the maximum extent practicable during active equipment and vehicle use. Construction of the LPA will not create

new or exacerbated adverse air quality effects related to odors and dust at the locations of USACE facilities.

Project Measures and Mitigation Measures

Project Measures

The following project measure will be implemented during construction of the LPA, including the MSF, and if the design option is selected.

AQ PM-1: Metro Green Construction Policy. LPA construction activities will be conducted in compliance with the Metro Green Construction Policy and will implement Best Management Practices contained therein as practicable.

Mitigation Measures

There are no construction-related mitigation measures related to air quality.

California Environmental Quality Act Determination

As described in Section 4.5.1.2 of the Air Quality Section and Section 4.19.3.5 under the heading "Methodology," construction of the LPA will generate air pollutant emissions through sources such as heavy-duty off-road equipment exhaust, fugitive dust produced by ground disturbance and soil displacement activities, on-road vehicle exhaust from trips by construction workers, haul trucks, material delivery trucks, and on-road re-entrained dust and brake and tire wear. The SCAQMD guidance states that air pollutant emissions be analyzed on both regional and local scales. The regional emissions analysis, where applicable, considers daily pollutant emissions that will be generated by all sources involved in project construction, both on-site and remote (mobile). The localized emissions analysis relates to the potential concentrations of pollutants in the vicinity of the construction sites, and only considers emissions from sources located on the construction site (i.e., equipment exhaust and on-site fugitive dust). The daily pollutant emissions are compared to the applicable SCAQMD Air Quality Significance Thresholds discussed in Section 4.5.1.2 of the Air Quality Section.

Threshold AQ-CON-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The following analyses address consistency with applicable SCAQMD and SCAG policies, including SCAQMD's 2016 AQMP and growth projections within the SCAG's 2016–2040 RTP/SCS, as well as the 2022 AQMP and 2020-2045 RTP/SCS. The following impact discussions focus on construction emissions in the context of air quality violations and attainment of the air quality standards.

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure and would not introduce additional sources of construction air pollutant emissions into the SCAQMD jurisdiction. Ongoing Metro construction activities and those planned for future Metro projects would remain committed to compliance with the Metro *Green Construction Policy*. Therefore, no impact would occur related to obstructing implementation of the applicable air quality plan by increasing the frequency or severity of air quality violations or delaying attainment of the air quality standards.

Locally Preferred Alternative

The LPA will involve a variety of construction activities throughout the project corridor and will be conducted in accordance with the Metro *Green Construction Policy* consistent with Project Measure AQ PM-1 (Metro Green Construction Policy). The emissions modeling results presented in Table 4.19.9 demonstrate that construction of the LPA will not produce emissions exceeding any regional mass daily threshold. Construction of the LPA will result in a less than significant impact related to potentially obstructing timely attainment of air quality standards as outlined in the 2016 AQMP and 2022 AQMP.

Design Option: Close 186th Street

Implementation of the LPA with the design option would generate emissions similar to those analyzed for the LPA without the design option. As shown in Table 4.19.9, maximum daily regional emissions would remain below the applicable SCAQMD thresholds throughout the construction period. Construction of the LPA with the design option would not result in greater daily source activity or emissions relative to those for the LPA without the design option, and would not have the potential to conflict with or obstruct implementation of the AQMP. This impact would be less than significant.

Maintenance and Storage Facility

Construction of the MSF will last for approximately two years and will be conducted in accordance with the Metro *Green Construction Policy* per Project Measure AQ PM-1 (Metro Green Construction Policy). As shown in Table 4.19.15, construction of the MSF will not produce emissions exceeding any regional mass daily threshold. Construction of the MSF will result in a less than significant impact related to potentially obstructing timely attainment of the AQMP, and mitigation is not required.

Threshold AQ-CON-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The project region is currently designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$. The following analysis focuses on ozone precursors (reactive organic gas and NO_X) and particulate matter (PM_{10} and $PM_{2.5}$) emissions that may contribute to a cumulatively considerable incremental increase in atmospheric concentrations of ozone and particulate matter.

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure, and no new sources of construction air pollutant emissions would be introduced to the SCAQMD jurisdiction. Therefore, no impact related to cumulatively considerable net increases in criteria pollutant or ozone precursor emissions would occur, and mitigation would not be required.

Locally Preferred Alternative

As demonstrated in the emissions analysis detailed in Table 4.19.9, construction of the LPA will not result in a significant air quality impact related to ozone precursors or particulate matter. The SCAQMD asserts that if a project generates daily emissions exceeding the project-level CEQA mass daily thresholds of significance, those emissions would also be considered cumulatively considerable. Conversely, maximum daily emissions that do not

exceed the regional threshold would also be determined to not be cumulatively considerable or significant. Therefore, construction of the LPA will result in a less than significant impact related to cumulatively considerable increases in emissions of nonattainment pollutants.

Design Option: Close 186th Street

The analysis of cumulatively considerable emissions during construction of the LPA with the design option is similar to the discussion provided for the LPA without the design option. Construction of the LPA with the design option would result in emissions of equal magnitude to those that will be generated during construction of the LPA without the design option. Therefore, this impact would be less than significant, and no mitigation would be required.

Maintenance and Storage Facility

Table 4.19.15 presents the maximum daily emissions that will be generated by construction of the MSF, as well as the SCAQMD Air Quality Significance Thresholds for mass daily emissions at the regional level. Construction of the MSF will include demolition, site clearing, grading, structure and track installation, paving, and architectural coating activities. Construction of the MSF will last for approximately two years and will be constructed in accordance with the Metro Green Construction Policy per Project Measure AQ PM-1 (Metro Green Construction Policy). As detailed in Table 4.19.15, construction of the MSF will not generate maximum daily emissions of particulate matter and ozone precursors in excess of the applicable SCAQMD regional mass daily threshold value. Therefore, according to SCAQMD guidance, construction of the MSF will result in a less than significant impact related to cumulatively considerable increases in nonattainment pollutants, and mitigation will not be required.

Threshold AQ-CON-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

The potential sensitive receptor exposures to substantial pollutant concentrations and the public health implications of construction emissions are assessed in both regional and localized contexts.

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, the No Project Alternative would not introduce any sources of air pollutant emissions into the area and no construction-related emissions would occur. No impact related to exposure of sensitive receptors to substantial pollutant concentrations generated by construction activity emissions would occur, and mitigation would not be required.

Locally Preferred Alternative

Regional Emissions: The regional emissions analysis for the LPA presented in Table 4.19.9 demonstrates that maximum daily regional emissions will remain below all applicable SCAQMD mass daily thresholds of significance. Therefore, construction of the LPA will not generate regional emissions that will potentially expose sensitive receptors to substantial pollutant concentrations and impacts will be less than significant.

Localized Emissions: Table 4.19.10 presents the maximum daily emissions that will be generated by individual demolition and relocations throughout the LPA corridor, along with the applicable LST values for a 1-acre work site. The LST values are provided for all SRAs in

which demolition and relocation activities will occur during construction of the LPA. Based on the LST analysis, the demolition and relocation activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, demolition and relocation activities will result in a less than significant impact related to the exposure of sensitive receptors to substantial localized pollutant concentrations.

Table 4.19.11 presents the maximum daily emissions generated by excavation and grading sites throughout the project corridor, along with the applicable LST values for a 2-acre work site. Based on the LST analysis, excavation and grading activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, excavation and grading activities will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

Table 4.19.12 presents the maximum daily emissions generated by individual at-grade track and station sites throughout the LPA corridor following demolition and site clearing activities, along with the applicable LST values for a 1-acre work site. The LST values are provided for all SRAs in which at-grade LRT segment construction activities along the LPA corridor will occur. Based on the LST analysis, at-grade construction activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, at-grade construction activities will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

Table 4.19.13 presents the maximum daily emissions that will be generated by individual aerial track and station sites throughout the project corridor following demolition and site clearing activities, as well as the applicable LST values for a 1-acre work site. The LST values are provided for all SRAs in which at-grade LRT segment construction activities along the LPA corridor will occur. Based on the LST analysis, aerial track and station construction activities will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, aerial track and station construction activities will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

Table 4.19.14 presents the daily localized emissions that will be generated by construction of the MSF, as well as the applicable LST values for a 2-acre work site in SRA 5. Based on the LST analysis, construction of the MSF will not generate emissions exceeding any applicable LST value for sensitive receptors located within approximately 80 feet of the construction sites. Therefore, construction of the MSF will result in a less than significant impact related to exposure of sensitive receptors to substantial localized pollutant concentrations.

In summary, the LPA will result in a less than significant impact related to the exposure of sensitive receptors to substantial localized pollutant concentrations during construction.

Design Option: Close 186th Street

Regional Emissions: The analysis of regional emissions for the LPA with the design option is similar to the discussion provided above for the LPA without the design option. Maximum daily emissions during construction of the design option would remain below applicable SCAQMD regional screening values, and impacts would be less than significant.

Localized Emissions: The analysis of localized emissions for the LPA with the design option is similar to the discussion provided above for the LPA without the design option because construction of the LPA with the design option would not require additional daily equipment use beyond that which was analyzed for the LPA without the design option. Construction of the LPA with the design option also would not result in sensitive receptors being in closer proximity to active construction areas throughout the project alignment. The LPA with the design option would also implement Project Measure AQ PM-1 (Metro Green Construction Policy) to control emissions from equipment and fugitive sources on construction sites. Maximum daily emissions during construction of the design option would remain below applicable SCAQMD LST screening values, and impacts would be less than significant.

Maintenance and Storage Facility

As discussed above, the MSF will be an integral component of the LPA and emissions associated with its construction are assessed in conjunction with the remainder of the LPA alignment.

Regional Emissions: Construction of the MSF will include demolition, site clearing, grading, structure and track installation, paving, and architectural coating activities. Construction of the MSF will last for approximately two years and Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented. The regional emissions analysis for the MSF presented in Table 4.19.15 demonstrates that maximum daily regional emissions will remain below all applicable SCAQMD mass daily thresholds of significance. Therefore, construction of the MSF will not generate regional emissions that would potentially expose sensitive receptors to substantial pollutant concentrations; impacts will be less than significant; and mitigation will not be required.

Localized Emissions: The localized emissions that will be generated by construction of the MSF are presented within the analysis for the LPA. As shown in Table 4.19.14, maximum daily localized emissions will not exceed the applicable LST values, and construction of the MSF will result in a less than significant impact related to potential exposures of sensitive receptors to substantial localized pollutant concentrations, and mitigation will not be required.

Threshold AQ-CON-4: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, the No Project Alternative would not introduce any sources of air pollutant emissions into the area and no construction-related emissions would occur. No impact related to the creation of emissions that would potentially result in a public nuisance for odors or visible dust plumes would occur, and mitigation would not be required.

Locally Preferred Alternative

LPA construction activities will not generate a substantial source of construction odors or visible dust plumes. The LPA will result in exhaust fumes through gasoline or diesel-powered equipment and asphalt paving. Such emissions will occur intermittently and associated odors will dissipate rapidly within the immediate vicinity of the work area. With implementation of Project Measure AQ PM-1 (Metro Green Construction Policy), construction activities will adhere to the

stringent provisions of the Metro *Green Construction Policy* and employ BMPs to prevent the occurrence of a nuisance odor or dust plume in accordance with SCAQMD Rule 402 (Nuisance). Therefore, the LPA will result in a less than significant impact related to public nuisance for odors or visible dust plumes, and mitigation will not be required.

Design Option: Close 186th Street

The discussion of potential impacts related to odors or dust nuisances during construction of the LPA with the design option is similar to the analysis presented for the LPA without the design option. Construction activities of the LPA with the design option would implement Project Measure AQ PM-1 (Metro Green Construction Policy) and be subject to compliance with CARB ATCM for diesel engine idling, and provisions of the SCAQMD Rules 401, 402, and 403. Impacts would be less than significant.

Maintenance and Storage Facility

The odor analysis for the MSF is similar to the analysis presented for the LPA. Construction of the MSF will not generate a substantial source of construction odors or visible dust plumes and will implement Project Measure AQ PM-1 (Metro Green Construction Policy). Therefore, the MSF will result in a less than significant impact related to public nuisance for odors or visible dust plumes, and mitigation will not be required.

4.19.3.6 Greenhouse Gas Emissions

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, including refinements to the LPA. GHG emissions associated with construction of the LPA were updated and quantified using the CalEEMod Version 2020.4.0. Based on the updated analysis, it is estimated that construction of the LPA will produce approximately 28,198 metric tons of $MTCO_2e$ in total, equating to a 30-year amortized rate of 940 $MTCO_2e$/year. In comparison, the Draft EIS/EIR discussed that Alternative 3 would result in a total of 24,838 $MTCO_2e$, or an amortized rate of 828 $MTCO_2e$ over 30 years. This increase in GHG emissions is primarily due to the extended construction schedule, which includes longer periods for utility and freight track relocations and building parking facilities. This extension leads to more emissions from vendor deliveries and construction worker commutes. However, emissions from haul trucks are lower than initially estimated in the Draft EIS/EIR. This reduction is a result of the delayed start date of construction and the implementation of stricter CARB standards for heavy-duty trucks in 2023 under the Truck and Bus Regulation.

Although the LPA's construction will marginally increase total aggregate GHG emissions compared to the Draft EIS/EIR estimates, these emissions, when amortized and considered alongside the operational benefits of the LPA, result in a net reduction of 8,202 $MTCO_2e$ over the LPA's life cycle. This is consistent with the findings of the Draft EIS/EIR. The LPA will offer high-quality transit services to an area currently lacking such options and will reduce regional GHG emissions through increased transit ridership and induced mode shift. Thus, the GHG impact conclusions presented in the Draft EIS/EIR for Alternative 3 remain unchanged in this Final EIS/EIR for the LPA. Construction of the LPA will not result in adverse effects related to GHG emissions.

Methodology

The analysis of construction effects for GHG emissions uses the same methods as described in Section 4.6.1.2 of the GHG Section in the context of anticipated construction activities and phasing. As described in Section 4.19.2, construction activities for the LPA are anticipated to last approximately eight years beginning in the fourth quarter of 2024 and finishing in the third quarter of 2032, with systems testing occurring thereafter. Construction will occur in several stages, including site clearing and demolition activities, excavation and grading, utilities and subgrade installations, and paving. During each phase of construction, GHG emissions will be generated from heavy-duty construction equipment, worker travel to and from the construction site, and material import and export using haul trucks. GHG emissions associated with construction of the LPA were quantified using the CalEEMod Version 2020.4.0. Model default assumptions were incorporated where project-specific details were unavailable.

Locally Preferred Alternative

Table 4.19.16 presents the source contributions of LPA construction to GHG emissions. Construction of the LPA, including the MSF, will generate approximately 28,198 $MTCO_2e$, or approximately 940 $MTCO_2e$ annually when amortized over a 30-year operational lifetime in accordance with SCAQMD methodology (SCAQMD 2008).

Table 4.19.16. Construction GHG Emissions

Emission Source	Greenhouse Gas Emissions ($MTCO_2e$)		
	LPA	Design Option	MSF
Off-Road Construction Equipment	**13,102**	**13,102**	**1,321**
Haul Truck Trips	**3,456**	**3,456**	**197**
Vendor Delivery Trips	**2,792**	**2,792**	**227**
Construction Worker Trips	**6,393**	**6,393**	**711**
Total Emissions	**25,743**	**25,743**	**2,455**
Amortized Construction (30 Years) [1]	**858**	**858**	**82**

Source: Metro 2024f
Notes:
[1] Amortized Construction= Total Emissions divided by 30 years.
GHG = greenhouse gas; LPA = Locally Preferred Alternative; MSF = maintenance and storage facility; $MTCO_2e$ = million metric tons of CO_2e

All construction activities will be conducted in accordance with Metro's *Green Construction Policy* to prevent excessive emissions per Project Measure AQ PM-1 (Metro Green Construction Policy) (described in Section 4.19.3.5 [Construction-related Air Quality]). Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions through transportation mode shift, as demonstrated by the net decrease in annual emissions presented in Table 4.6.5 in Section 4.6.3.2 of the GHG Section. Metro recognizes transportation mode shift as the primary contributor to GHG emissions displacement, and direct emissions generated through construction activities will be more than offset by the future benefits of transportation mode shift that will occur with implementation of the LPA. Under NEPA, the

LPA will not result in adverse effects related to GHG emissions during construction, and mitigation is not required.

Design Option: Close 186th Street

Construction of the LPA with the design option would involve the same emissions sources as those itemized in Table 4.19.16 for the LPA without the design option. The duration or intensity of equipment and vehicle activities would not be altered relative to construction of the LPA without the design option. The LPA with the design option would require the same amount of import/export activities as the LPA without the design option, as presented in Table 4.19.16. Construction of the LPA with the design option would implement Project Measure AQ PM-1 (Metro Green Construction Policy) similar to the LPA without the design option and would not result in adverse effects related to GHG emissions.

Maintenance and Storage Facility

The data presented here correspond solely to construction of the MSF independent of the remainder of the LPA construction. As shown in Table 4.19.16, construction of the MSF will generate approximately 2,455 $MTCO_2e$ during the approximate 25-month construction period. Total construction emissions have been amortized over a 30-year operational lifetime and included in the operational emissions analysis for the LPA (82 $MTCO_2e$/year). Independently, the generation of emissions is not considered significant as the emissions are related to the construction of a mass transit system, which has been identified by state and regional agencies as an efficient method of reducing statewide emissions. Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions. Therefore, the MSF will not result in an adverse effect related to the generation of GHG emissions during construction.

U.S. Army Corps of Engineers Facilities

The generation of GHG emissions during construction of the LPA over the USACE facilities is substantially similar to construction of the LPA along other locations of the alignment. Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented during construction to control GHG emissions. Therefore, no adverse effects will occur during construction of the LPA at the USACE facilities.

Project Measures and Mitigation Measures

There are no project measures or mitigation measures required related to GHG emissions. Refer to Section 4.19.3.5 (Construction-related Air Quality Section) for Project Measure AQ PM-1 (Metro Green Construction Policy).

California Environmental Quality Act Determination

Threshold GHG-CON-1: Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no significant impact related to GHG emissions would occur, and mitigation would not be required.

Locally Preferred Alternative

Construction activities for the LPA will generate GHG emissions through off-road heavy-duty equipment exhaust and on-road vehicle exhaust associated with construction workers, material deliveries, and hauling of materials. Construction activities will be conducted in accordance with Metro's *Green Construction Policy* to prevent excessive emissions per Project Measure AQ PM-1 (Metro Green Construction Policy). In addition, the Project will comply with the CARB In-Use Off-Road Diesel Vehicle Regulation and CARB Truck and Bus Rule which minimize GHG emissions generated by these sources. All equipment and vehicles will be maintained in accordance with optimal manufacturer specifications, and idling of equipment and vehicles will be restricted to less than five minutes.

Table 4.19.16 presents the source contributions to the LPA construction GHG emissions. Construction of the LPA will generate approximately 25,743 $MTCO_2e$ and construction of the MSF will generate approximately 2,455 $MTCO_2e$, a total of 28,198 $MTCO_2e$ over the approximate eight-year construction period. This mass quantity equates to approximately 940 $MTCO_2e$ annually when amortized over a 30-year operational lifetime, as summarized in Table 4.19.16. Emissions related to construction activities will be temporary; in accordance with SCAQMD guidance (SCAQMD 2008), total construction emissions have been amortized over 30 years and included in the operational analysis for the LPA. Independently, the generation of emissions is not considered significant as the emissions are related to the construction of a mass transit system, which has been identified by state and regional agencies as an efficient method of reducing statewide emissions. Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions. Therefore, impacts related to GHG emissions will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The LPA with the design option would comprise the same 14.5-mile LRT alignment, stations, and parking facilities at the same locations as the LPA without the design option. Construction of the LPA with the design option would not extend or shorten the duration of activities relative to the LPA without the design option and would involve the same amount of equipment and vehicle use to build the LPA components. The analysis of construction-related GHG emissions presented Table 4.19.16 for the LPA without the design option would also apply to the LPA with the design option. Construction of the LPA with the design option would produce the same amount of GHG emissions as construction of the LPA without the design option. Due to the cumulative nature of the effects of climate change resulting from GHG emissions, the emissions estimates were amortized over a 30-year operational lifetime of the LPA with the design option and are evaluated in conjunction with future emissions during operations following the completion of construction. Similar to the LPA without the design option, Project Measure AQ PM-1 (Metro Green Construction Policy) will also be implemented during construction of the LPA with the design option. Therefore, construction of the LPA with the design option would result in a less than significant impact related to GHG emissions, and mitigation would not be required.

Maintenance and Storage Facility

As shown in Table 4.19.16, construction of the MSF will generate approximately 2,455 $MTCO_2e$. Total construction emissions have been amortized over 30 years (approximately 82 $MTCO_2e$ annual average) and included in the operational analysis with the amortized LRT

construction emissions. Independently, the generation of emissions that will occur during construction of the MSF is not considered significant as the emissions are related to the construction of a mass transit system, which has been identified by state and regional agencies as an efficient method of reducing statewide emissions. Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions. Therefore, impacts related to GHG emissions will be less than significant, and mitigation will not be required.

Threshold GHG-CON-2: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no significant impact would occur, and mitigation would not be required.

Locally Preferred Alternative

The LPA construction activities will be conducted in accordance with Metro's *Green Construction Policy* to prevent excessive emissions per Project Measure AQ PM-1 (Metro Green Construction Policy). Best practices include Tier 4 emission standards for off-road diesel-powered construction equipment with greater than 50 horsepower and restricting idling to a maximum of five minutes. In addition, Metro must comply with the CALGreen Code, which requires reduction, disposal, and recycling of at least 50 percent of nonhazardous construction and demolition debris. Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions. Construction of the LPA will not interfere with GHG reduction plans, policies, or regulations. Therefore, impacts related to applicable GHG plans, policies, or regulations will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The analysis of GHG reduction plan consistency for the LPA with the design option is similar to the discussion presented above for the LPA without the design option. Project Measure AQ PM-1 (Metro Green Construction Policy) would be implemented during construction of the LPA with the design option to control GHG emissions during construction. Therefore, construction of the LPA with the design option would not interfere with GHG reduction plans, policies, or regulations, and impacts would be less than significant.

Maintenance and Storage Facility

Construction activities for the MSF will be conducted in accordance with Metro's *Green Construction Policy* to prevent excessive emissions per Project Measure AQ PM-1 (Metro Green Construction Policy). MSF construction activities will also be conducted in accordance with CALGreen Code and other applicable policies and regulations. Temporary GHG emissions will be generated to construct an energy-efficient mass transit system that will reduce long-term regional GHG emissions. Construction of the MSF will not interfere with GHG reduction plans, policies, or regulations. Therefore, impacts related to applicable GHG plans, policies, or regulations will be less than significant, and mitigation will not be required.

4.19.3.7 Noise and Vibration

Since completion of the Draft EIS/EIR, changes have been incorporated into the noise and vibration methodology and analysis to reflect the LPA, inclusive of refinements, and comments received on the Draft EIS/EIR. The refinements to the LPA and the construction staging areas will not substantially increase the severity of the construction noise impacts; therefore, construction noise impacts for the LPA will be similar to those described in the Draft EIS/EIR for Alternative 3. The construction-related vibration analysis was updated to include two additional sensitive receivers in the City of Bellflower: the City of Bellflower High Capacity Well No. 1 and the Dante Valve Company, which were identified as vibration-sensitive by stakeholders after circulation of the Draft EIS/EIR. Project Measure VIB PM-1 (City of Bellflower Vibration Sensitive Facilities) was added to address construction-related vibration at these sites. The construction-related vibration analysis was updated for historic properties/historical resources to consider the individual sensitivity of each property, rather than apply the same damage criteria to all historic properties/historical resources. Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) and Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) were also updated to incorporate the property-specific damage criteria and for clarity. These updates ensure that vibration generated by construction of the LPA will not result in adverse impacts to historic properties/historical resources. The findings and conclusions of the Draft EIS/EIR are unchanged. With mitigation, construction activities related to the LPA will not result in adverse effects related to vibration. The impact conclusions for construction noise and vibration remain the same as the Draft EIS/EIR, including with respect to Alternative 3.

Noise

Methodology

To satisfy NEPA requirements, the analysis uses FTA Transit Noise and Vibration Impact Assessment guidance for the general assessment construction noise criteria. Per the FTA Guidance Manual, a screening distance of 500 feet was used for construction impacts. The criteria are based upon a 1-hour L_{eq}. There may be adverse community reaction if the following 1-hour L_{eq} noise levels are exceeded:

- Residential: 90 dBA during the day and 80 dBA at night
- Commercial: 100 dBA during the day and 100 dBA at night
- Industrial: 100 dBA during the day and 100 dBA at night

As shown in Table 4.19.17, several jurisdictions have not established quantitative thresholds for construction noise but instead rely on allowable hours of construction to limit construction noise. The City of Los Angeles, County of Los Angeles, and the City of Downey have established quantitative standards for construction noise. For the purposes of this analysis, the FTA general assessment construction 1-hour L_{eq} noise criteria have been applied.

Construction noise was modeled using noise levels from the FTA Guidance Manual and the FHWA Roadway Construction Noise Model version 1.1. The FTA Guidance Manual includes noise levels for common pieces of construction equipment. For equipment noise levels not listed in the FTA Guidance Manual, noise levels from FHWA's Roadway Construction Noise Model were used. Construction noise levels were assessed as they will typically occur on the alignment. The two loudest pieces of construction equipment were combined, and this noise level was used to assess construction noise against the FTA construction 1-hour L_{eq} noise criteria.

Table 4.19.17. Construction Standards by Jurisdiction

Jurisdiction	Permissible Construction Time	Quantitative Construction Noise Standard
City of Artesia	7:00 a.m. to 7:00 p.m. Monday through Saturday	No
City of Bell	Not Established	No
City of Bellflower	7:00 a.m. to 6:00 p.m. Monday through Friday 8:00 a.m. to 6:00 p.m. Saturdays	No
City of Cerritos	7:00 a.m. to 7:00 p.m.	No
City of Cudahy	Daytime (not defined)	No
City of Huntington Park	7:00 a.m. to 7:00 p.m. Monday through Saturday	No
City of Paramount	7:00 a.m. to 8:00 p.m. Monday through Saturday	No
City of South Gate	8:00 a.m. to 7:00 p.m. Monday through Saturday	No
City of Vernon	Not Established	No
City of Downey	7:00 a.m. to 9:00 p.m.	85 dBA at the property line
City of Los Angeles	7:00 a.m. to 9:00 p.m. Monday through Friday 8:00 a.m. to 6:00 p.m. Saturdays	75 dBA at 50 feet within 500 feet of a residential zone
County of Los Angeles	7:00 a.m. to 7:00 p.m. Monday through Saturday	75 dBA at single-family residence 80 dBA at multifamily residence

Sources: City of Artesia, *Municipal Code*, March 2017; City of Bellflower, *Municipal Code*, February 2017; City of Cerritos, *Municipal Code*, May 25, 2017; City of Cudahy, *2010 General Plan Noise Element*, September 15, 2010; City of Huntington Park, *Municipal Code*; City of Paramount, *Municipal Code*, 2017; City of South Gate, *Municipal Code*, February 14, 2017
Note: dBA = A-weighted decibels

Locally Preferred Alternative

Construction of the LPA will occur over the course of approximately eight years. As stated in Section 4.19.2.1, various components of the LPA will be under construction concurrently throughout the 14.5-mile alignment. Working hours of construction will vary to meet the type of work being performed and to meet local ordinance restrictions. LPA construction may be minimized during weekday AM and PM peak hours, but will typically occur between 8:00 a.m. and 7:00 p.m. in accordance with the most conservative of the local ordinance restrictions among all involved cities. Nighttime construction may be required at times to minimize impacts to congested freeways and surface streets or due to the nature of certain construction processes. The LPA will be located in a fully built-out urban environment, and construction activities will occur in close proximity to sensitive land uses, including residences, parks, religious uses, and schools, throughout the corridor and may occur during daytime or nighttime hours. Unless variances, such as variances for nighttime or weekend construction, are obtained, the LPA will be required to comply with the construction time

limits of the Cities of Los Angeles, Huntington Park, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the County of Los Angeles.

The LPA will require at-grade construction and elevated guideway construction. Construction activity at station areas will be dependent on the profile of the station (at-grade or aerial). Construction activity at staging areas will be most similar to noise levels generated by at-grade construction and will primarily involve the movement of equipment to and from the LPA site.

Typical construction equipment to be used during major construction activities are listed in Table 4.19.18 along with the 1-hour L_{eq} (dBA).

Table 4.19.18. Construction Noise and Equipment Use by Phase

Equipment	1-hour L_{eq} (dBA)	Construction Activity	
		At-Grade Construction	Elevated Guideway and Stations
Backhoe	80.0	X	—
Compressor (air)	80.0	X	—
Concrete mixer truck	85.0	—	X
Concrete pump truck	82.0	—	X
Concrete saw	89.6	—	X
Crane	83.0	X	X
Dump truck	76.5	X	X
Excavator	80.7	—	—
Flatbed truck	74.3	X	X
Generator	82.0	X	X
Grader	85.0	X	—
Paver	85.0	X	—
Pneumatic tools	85.0	X	X
Rail saw	90.0	X	—
Welder/torch	74.0	X	X
Combined 1-hour L_{eq}[1]		**91.2**	**90.9**

Source: FHWA 2008, FTA 2018
Notes: [1] Logarithmic sum of two loudest pieces of equipment. "—" = not applicable.
dBA = A-weighted decibel; L_{eq} = equivalent sound level.

At-grade construction will be the loudest with a 1-hour Leq of 91.2 dBA at 50 feet. The 1-hour Leq will exceed the 1-hour Leq FTA standards of 90 dBA during the day and 80 dBA at night for residential uses during the at-grade and elevated guideway phases. Therefore, without mitigation, construction activity would result in potentially adverse noise effects. Mitigation Measure NOI-6 (Noise Control Plan) will require the contractor to prepare a Noise Control Plan to be approved by Metro to reduce construction noise levels. Noise-reducing methods that could be used include acoustically attenuating shields around construction equipment, high-performance noise-reducing mufflers, temporary noise barriers, and substitution of diesel power equipment for quieter electric equipment. The Noise Control Plan will require

the contractor to conduct periodic noise monitoring in response to noise complaints to demonstrate compliance with FTA standards. Other less conventional techniques, such as temporarily relocating affected residents, could be employed when the noise-reducing options would not suffice, particularly when loud, necessary construction operations must occur. However, construction noise will still likely exceed the FTA construction noise criteria. Therefore, under NEPA, the LPA will result in adverse effects related to construction noise even with mitigation incorporated.

Design Options: Close 186th Street

Construction required for the LPA with the design option would be similar to the LPA without the design option in the location of 186th and 187th Street. Construction noise would be characterized as at-grade construction with a 1-hour L_{eq} of 91 dBA at 50 feet. The 1-hour L_{eq} would exceed the 1-hour L_{eq} FTA standards of 90 dBA during the day and 80 dBA at night for residential uses during the at-grade phase. Under NEPA, construction activity for the LPA with the design option would result in potentially adverse noise effects without mitigation. The LPA with the design option would result in similar construction noise impacts as the LPA without the design option. Construction noise impacts would not increase beyond those identified for the LPA without the design option. Mitigation Measure NOI-6 (Noise Control Plan) would be implemented, and other less conventional noise-reducing techniques could be employed. However, construction noise would still likely exceed the FTA construction noise criteria. Therefore, under NEPA, the design option would result in adverse effects related to construction noise even with mitigation incorporated.

Maintenance and Storage Facility

Construction of the MSF will use equipment most similar to that used for at-grade construction of the alignment. The 1-hour L_{eq} for MSF construction is anticipated to be 91 dBA at 50 feet. Sensitive receptors near MSF construction activity will include residences to the north, west, east, and south and Albert Baxter Elementary School approximately 400 feet to the north. The 1-hour L_{eq} of 91 dBA will exceed the FTA standards for residential uses. Therefore, without mitigation, MSF construction activity would result in a potentially adverse noise impact. Mitigation Measure NOI-6 (Noise Control Plan) will be implemented, and other less conventional noise-reducing techniques could be employed. However, construction noise will still likely exceed the FTA construction noise criteria. Therefore, under NEPA, the MSF will result in adverse effects related to construction noise even with mitigation incorporated.

U.S. Army Corps of Engineers Facilities

USACE facilities are not sensitive to noise. Therefore, no adverse effects will occur during construction of the LPA at the USACE facilities.

Vibration

Methodology

To satisfy NEPA requirements, the potential for damage to structures associated with construction vibration has been assessed using the FTA vibration damage criteria shown in Table 4.19.19.

Table 4.19.19. Construction Vibration Damage Risk Criteria

Building Category	PPV (inches/second)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Historic buildings that have average sensitivity to vibration damage and non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018
Note: PPV = peak particle velocity

The limit of 0.12 inch per second for fragile historic structures is among the most restrictive limits used for vibration damage risk to buildings. A damage risk criterion of 0.2 inch per second (PPV) is protective of all but the most fragile buildings.

The FTA analytical/empirical construction vibration prediction model was used to estimate vibration level propagation from construction equipment to vibration-sensitive locations. The vibration model is based on a combination of previous works, including measured equipment vibration emission data from several reference sources and projects, including the FTA's Guidance Manual, the Central Artery/Tunnel Project in Boston, and ground transmissibility relationships found in Charles Dowding's reference textbook. The fundamental equation used in the model is based on propagation relationships of vibration through average soil conditions and distance, as follows:

$$PPV_{receiver} = PPV_{ref} * \left(25 / Dist_{receiver} \right)^{n}$$

where:
$PPV_{receiver}$ = predicted PPV at the receiver
PPV_{ref} = reference PPV of equipment at 25 feet
$Dist_{receiver}$ = distance from the receiver to the equipment in feet
n = 1.5 (the vibration attenuation rate through the soil)

The suggested value for "n" in the FTA Guidance Manual is 1.5. The value for "n" can lie between 1.0 and 2.0, and a value of 1.5 is commonly used in general vibration prediction models. Equipment vibration emission levels used for the predictions are shown in Table 4.19.20.

Locally Preferred Alternative

Construction vibration varies greatly depending on the construction process, type of equipment used, and distance to the closest receivers. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction vibration. Overall, construction vibration levels are governed primarily by the equipment being used. Table 4.19.20 lists categories of equipment that are likely to be used during construction and the typical vibration generated by this equipment when it is operating at full load. The table also shows FTA vibration damage criteria limits.

Table 4.19.20. Construction Vibration

Equipment	Vibration Level at 25 feet (in/sec PPV)	FTA Damage Risk Vibration Criteria (in/sec PPV)[1]	Vibration Level at 25 feet (VdB RMS)
Pile driver (impact) – Upper Range	1.518	Category I - 0.5 Category II - 0.3 Category III - 0.2 Category IV - 0.12	112
Pile driver (impact) – Typical	0.644		104
Large bulldozer	0.089		87
Jack hammer	0.035		79
Hoe ram	0.089		87
Mobile crane	0.008		67
Front-end loader	0.087		87
Loaded truck	0.076		86
Vibratory roller	0.210		94

Source: FTA 2018
Notes: [1] FTA Damage Risk per building category:
Category I – Reinforced concrete, steel, or timber (no plaster)
Category II – Engineered concrete and masonry (no plaster)
Category III – Non-engineered timber masonry
Category IV – Buildings extremely susceptible to vibration damage
FTA = Federal Transit Administration; in/sec = inches per second; PPV = peak particle velocity; RMS = root mean square; VdB = decibel notation

Vibration-generating activities could result in noticeable levels of vibration but will largely occur within the ROW and are unlikely to result in building damage. Most buildings within the LPA corridor are constructed of engineered concrete and masonry (no plaster) or non-engineered timber masonry that are held to vibration damage thresholds of 0.3 PPV and 0.2 PPV, respectively. The use of vibration-intensive equipment, such as a compactor/ballast tamper or an impact pile driver, could exceed the 0.2 PPV threshold within 45 feet of a structure. Equipment such as a vibratory roller could result in an exceedance of the 0.2 PPV threshold within 25 feet of a structure. Equipment such as large bulldozers, caisson drills, and hoe rams could result in an exceedance of the 0.2 PPV threshold within 15 feet of a structure. Vibration levels at the City of Bellflower underground High Capacity Well No. 1 will not exceed the 2.0 in/sec PPV damage risk criteria appropriate for underground utilities. Short-term construction vibration at Dante Valve Company in the City of Bellflower could exceed existing baseline vibration levels but will be less than the levels that could damage equipment or facilities.

Vibration could exceed the FTA vibration annoyance criteria outlined in Table 4.7.2 in Section 4.7.1 of the Noise and Vibration Section when vibration-intensive equipment is operated within 25 feet of sensitive uses. Under NEPA, construction activity will result in potentially adverse vibration effects without mitigation. Mitigation Measure VIB-3 (Vibration Control Plan) will require the contractor to prepare a Vibration Control Plan to be approved by Metro to reduce construction vibration levels. Mitigation Measure VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) include good engineering practices that will avoid exceedance of the FTA building damage risk thresholds

and avoid exceeding the FTA construction impact criteria. Under NEPA, with mitigation incorporated, the LPA will not result in adverse effects related to construction vibration.

Construction Vibration Effects on Historic Properties/Historical Resources: There are 17 potentially vibration-sensitive historic structures along the LPA alignment. The predicted construction vibration from the equipment and activities associated with the LPA are presented in Table 7.5 in Section 7.3.2.2 of the *West Santa Ana Branch Transit Corridor Project Final Noise and Vibration Impact Analysis Report* (Metro 2024j) for each of the eligible historic properties/historical resources. The locations of these resources are summarized in Section 4.14 of the Historic, Archaeological, and Paleontological Resources Section. The highest vibration levels will be generated from compaction of the track beds and ballast tamping at at-grade trackwork alignments and caisson drilling for column structures at the aerial trackwork alignments. Without mitigation, vibration levels could exceed the applicable vibration damage risk criteria at three of the historic properties/historical resources: the LADWP Boulder Dam—Los Angeles 287.5kV Transmission Line, the Bellflower Pacific Electric Railway Depot, and the Frampton-Dantema House (81644 Alburtis Avenue, Artesia). Per Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), these historic structures will be held to building-specific vibration damage thresholds. Where possible, operation of equipment, such as, and similar to, vibratory rollers, large bulldozers, caisson drills, and hoe rams, would operate no closer than 25 feet to a historic structure. Although the vibration damage risk criteria are not anticipated to be exceeded at the other 14 vibration-sensitive historic structures along the LPA alignment, as a precautionary measure, Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) will be implemented to monitor construction vibration levels within 200 feet of historic properties/historical resources to ensure the vibration damage thresholds will not be exceeded.

Mitigation Measure VIB-3 (Vibration Control Plan) will require the contractor to prepare a Vibration Control Plan to be approved by Metro to reduce construction vibration levels. Mitigation Measure VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) include good engineering practices that will avoid exceedance of damage risk thresholds at historic properties. With mitigation incorporated, impacts related to construction vibration will not be adverse because vibration levels will be monitored at sensitive structures and construction will be halted and alternative construction methods implemented prior to vibration limits being exceeded.

Design Option: Close 186th Street

Construction required for the LPA with the design option would be similar to the LPA without the design option at 186th and 187th Streets. Vibration effects to historic properties would be the same as for the LPA without the design option.

Maintenance and Storage Facility

A large bulldozer, the most likely equipment to generate the greatest vibration during construction of the MSF, generates a vibration level of approximately 0.089 inch per second PPV at 25 feet. Vibration-generating activities could result in noticeable levels of vibration but will largely occur within the MSF site and are unlikely to result in building damage. Nearby structures will typically be more than 25 feet away from construction occurring at the MSF

site and are unlikely to exceed the vibration damage threshold. However, residences to the northwest and northeast of the MSF site are adjacent to where construction activity will occur, which could result in the exceedance of the vibration damage threshold for certain activities at the site boundary. Mitigation Measure VIB-3 (Vibration Control Plan) will require the contractor to prepare a Vibration Control Plan to be approved by Metro to reduce construction vibration levels. Mitigation Measure VIB-4 (Minimize the Use of Impact Devices) and VIB-5 (Drilling for Building Foundations) include good construction practices that will avoid exceedance of damage risk thresholds. With mitigation incorporated, impacts related to construction vibration will be less than adverse.

There are no historic properties/historical resources near the MSF; therefore, vibration from construction of the MSF will not result in effects to historic properties/historical resources.

U.S. Army Corps of Engineers Facilities

The USACE facilities were constructed with similar activities as to those that will be used to construct the LPA and are not highly sensitive to construction vibration. Work occurring within the river channels will be completed under conditions of a USACE Section 408 permit that will condition equipment and activities to those compatible with the sites to limit potential for damage to the channel from the weight of or vibration caused by the equipment. Therefore, no adverse effects related to vibration will occur during construction of the LPA at the USACE facilities.

Project Measures and Mitigation Measures

The following project measure will be implemented near the City of Bellflower High Capacity Well No. 1 and Dante Valve Company:

VIB PM-1: City of Bellflower Vibration Sensitive Facilities: As part of project construction, Metro will establish a requirement that in no case shall vibration levels, in any direction, for all construction activities, exceed 2.0 in/sec PPV at the location of the City of Bellflower High Capacity Well No. 1 to protect underground and at-grade utility structures or exceed 0.5 in/sec PPV at the location of Dante Valve Company to protect the facility and at-grade test equipment. Vibratory rollers and other vibration-causing construction equipment shall not be used within 15 feet of the wellhead or Dante Valve Company facility.

The following mitigation measures are proposed during construction:

NOI-6 **Noise Control Plan.** Metro's contractor will develop a Noise Control Plan demonstrating how noise criteria will be achieved during construction. The Noise Control Plan will be designed to follow Metro requirements, Construction Noise Control, and will include measurements of existing noise, a list of the major pieces of construction equipment that will be used, and predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan will be approved by Metro prior to initiating construction. Where the construction cannot be performed in accordance with the FTA 1-hour L_{eq} construction noise standards, the contractor will investigate alternative construction measures that will result in lower sound levels. The FTA 1-hour L_{eq} construction noise standards are as follows: Residential daytime standard of 90 dBA L_{eq} and nighttime standard of 80 dBA L_{eq}, and Commercial and Industrial daytime standard of 100 dBA L_{eq} and nighttime standard of 100 dBA L_{eq}. The contractor will conduct noise monitoring to

demonstrate compliance with contract noise limits. In addition, Metro will comply with local noise ordinances when applicable. Noise-reducing methods that may be implemented by Metro include:

- If nighttime construction is planned, a noise variance may be prepared by the contractor, if required by the jurisdiction, that demonstrates the implementation of control measures to maintain noise levels below the applicable FTA standards.
- Where construction occurs near noise-sensitive land uses, specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers may be used.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers or noise-control curtains, where feasible and desirable.
- Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers.
- Limit impact pile driving where feasible and effective.
- Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools where feasible.
- Minimize the use of impact devices such as jackhammers and hoe rams, using concrete crushers and pavement saws instead.

VIB-3 **Vibration Control Plan.** Metro's contractor will prepare a Vibration Control Plan demonstrating how the Federal Transit Administration (FTA) building damage risk criteria and the FTA vibration annoyance criteria will be achieved. The Vibration Control Plan will include a list of the major pieces of construction equipment that will be used and predictions of the vibration levels at the closest sensitive receivers (residences, hotels, schools, churches, temples, historic properties, and similar facilities). The Vibration Control Plan must be approved by Metro prior to initiating construction. Where the construction cannot be performed to meet the FTA vibration damage criteria, the contractor will investigate and implement alternative means and methods of construction measures that will result in lower vibration levels.

As part of the Vibration Control Plan, the contractor will prepare a Vibration Monitoring Plan that specifies construction activities requiring monitoring, monitoring locations, warning levels and limits at each location, equipment, procedures, schedule of measurements, and reporting methods to be used to ensure that the FTA damage criteria and the criteria specified in Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) are not exceeded. Vibration levels will be monitored in real time. If limits are exceeded, the activity causing the exceedance must immediately be halted. Work on that activity will be suspended until such time as alternative construction methods can be used and additional abatement measures can be implemented as specified in the Vibration Control Plan. Vibration monitoring data will be submitted to the Project Engineer weekly.

VIB-4 **Minimize the Use of Impact Devices.** Metro's contractor will avoid or minimize the use of impact devices, such as jackhammers and hoe rams, using concrete crushers and pavement saws instead.

VIB-5 Drilling for Building Foundations. Where building foundation systems are needed, drilling instead of driven piles will be used.

VIB-6 Construction Vibration Limits for Historic Properties/Historical Resources. Historic structures will be held to the vibration damage criteria identified in the following table. Where possible, operation of the compactor/ballast tamper will be restricted to no closer than 40 feet, and other equipment, such as, and similar to, vibratory rollers, large bulldozers, caisson drills, and hoe rams no closer than 25 feet to a historic structure. Such equipment will not be used within 25 feet of the Bellflower Pacific Electric Railway Depot or the Los Angeles Department of Water and Power Boulder Dam-Los Angeles 287.5 kV Transmission Line towers or within 40 feet of the Frampton-Dantema House (81644 Alburtis Avenue, Artesia).

VIB-6 Construction Restrictions near Historic Properties

APE Map No.	Property Location	Damage Risk Criteria - in/sec (PPV)	Predicted Vibration Level – in/sec (PPV) with Mitigation Measure VIB-6
17-005	Los Angeles Department of Water and Power Boulder Dam-Los Angeles 287.5 kV Transmission Line (1936)	0.50	0.21 to 0.43 at 25 feet (below damage risk criteria)
28-008	Bellflower Pacific Electric Railway Depot, 16336 Bellflower Boulevard, Bellflower	0.50	0.21 to 0.43 at 25 feet (below damage risk criteria)
32-021	81644 Alburtis Ave, Artesia	0.20	0.10 to 0.20 at 40 feet (below damage risk criteria)

Note: APE = Area of Potential Effect; in/sec = inches per second; PPV = peak particle velocity

VIB-7 Construction Monitoring for Vibration Near Historic Properties/Historical Resources. The contractor will monitor construction vibration levels within 200 feet of historic buildings and structures to ensure the vibration damage threshold for that building or structure will not be exceeded. A preconstruction and post-construction survey of these buildings will be conducted by a qualified structural engineer. Any damage will be noted. All vibration monitors used for these measurements will be equipped with an "alarm" feature to provide advanced notification that vibration impact criteria have been approached. This measure applies to structures identified as eligible for the National Register of Historic Places and/or California Register of Historical Resources in Section 4.14 of the Historic, Archaeological, and Paleontological Resources Section.

California Environmental Quality Act Determination

Threshold NOI-CON-1: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established by FTA or in the local general plans or noise ordinances?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and no change would occur. Therefore, impacts related to temporary or periodic increases in ambient noise levels would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The LPA will result in temporary and periodic increases in ambient noise levels due to construction activity that will exceed FTA's criteria, and, where applicable, the standards established by the local noise ordinances of the Cities of Artesia, Bell, Bellflower, Cerritos, Cudahy, Huntington Park, Paramount, South Gate, Vernon, Downey, and Los Angeles, and the County of Los Angeles, as listed in Table 4.19.17. Therefore, without mitigation, impacts related to temporary or periodic increases in ambient noise levels will be potentially significant. Mitigation Measure NOI-6 (Noise Control Plan) is anticipated to reduce construction noise levels. However, in some instances the FTA construction impact criteria may still be exceeded.

Regarding health effects of noise, it is unlikely for construction noise to result in noise-induced hearing loss for persons residing or working near construction zones, as this is an occupational hazard related to working over long periods of time (years) in high noise environments. Construction noise could increase stress and the potential for stress-related diseases at affected sensitive uses.

Mitigation Measures: Mitigation Measure NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Significant and unavoidable.

Design Option: Close 186th Street

Similar to the LPA without the design option, the LPA with the design option would result in temporary and periodic increases in ambient noise levels due to construction activity that will exceed FTA's criteria, and, where applicable, the standards established by local noise ordinances in Table 4.19.17. Construction of the LPA with the design option would result in similar construction noise impacts as the LPA without the design option. Construction noise impacts would not increase beyond those identified for the LPA without the design option. Therefore, without mitigation, impacts related to temporary or periodic increases in ambient noise levels will be potentially significant. Mitigation Measure NOI**-6** (Noise Control Plan) is anticipated to reduce construction noise levels. However, in some instances the FTA construction impact criteria may still be exceeded.

Mitigation Measures: Mitigation Measure NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Significant and unavoidable.

Maintenance and Storage Facility

The City of Bellflower has not established a quantitative construction noise standard; therefore, an impact determination has been made based upon FTA construction noise criteria. Construction of the MSF will exceed the FTA standards for residential uses. Therefore, without mitigation, impacts related to temporary or periodic increases in ambient noise levels will be potentially significant. Mitigation Measure NOI-6 (Noise Control Plan) is anticipated to reduce construction noise levels. However, in some instances the FTA construction impact criteria may still be exceeded.

Mitigation Measures: Mitigation Measure NOI-6 (Noise Control Plan)

Impacts Remaining After Mitigation: Significant and unavoidable.

Threshold NOI-CON-2: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

No Project Alternative

Under the No Project Alternative, no changes would occur within the Affected Area. Therefore, impacts would be less than significant, and mitigation would not be required.

Locally Preferred Alternative

The FTA has provided guidance for assessing construction vibration associated with transit projects. The vibration criteria are based on potential damage risk to buildings and potential annoyance to building occupants. The FTA standards are used in this analysis so the potential for construction vibration impacts is assessed similarly throughout the corridor. Typical construction equipment to be used during construction is listed in Table 4.19.20 along with the predicted vibration levels at 25 feet. To limit the damage risk to buildings along the alignment, operation of vibration-generating equipment will be managed at all locations through Mitigation Measures VIB-3 (Vibration Control Plan) and limited near historic buildings by Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources). Where possible, operation of equipment, such as, and similar to, vibratory rollers, large bulldozers, caisson drills, and hoe rams, would operate no closer than 25 feet to a historic structure. Most construction activities beyond 15 feet from a building are unlikely to cause damage. Without mitigation, vibration levels could exceed resource-specific damage risk criteria at three historic resources. Therefore, without mitigation, construction activity would result in a potentially significant vibration impact.

Mitigation Measures: Mitigation Measures VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources).

Impacts Remaining After Mitigation: Less than significant because Mitigation Measure VIB-3 (Vibration Control Plan) will require the contractor to prepare a Vibration Control Plan to be approved by Metro to reduce construction vibration levels. Mitigation Measure VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) include construction best management practices that will avoid exceedance of damage risk criteria, including at historical resources. With mitigation incorporated, impacts related to

construction vibration will not be adverse because vibration levels will be monitored at sensitive structures and construction will be halted and alternative construction methods implemented prior to vibration limits being exceeded.

Design Option: Close 186th Street

The LPA with the design option is substantially similar to the LPA without the design option in regard to vibration levels. Without mitigation, construction activity would result in the same potentially significant vibration impact as the LPA without the design option.

Mitigation Measures: Mitigation Measures VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources).

Impacts Remaining After Mitigation: Less than significant.

Maintenance and Storage Facility

Construction equipment used during construction of the MSF will be most similar to a large bulldozer. Nearby structures will typically be more than 25 feet away from construction occurring at the MSF site and are unlikely to exceed the vibration damage threshold. However, residences to the northwest and northeast of the MSF site are adjacent to where construction activity will occur, which could result in the exceedance of the vibration damage threshold. Therefore, without mitigation, construction activity would result in a potentially significant vibration impact.

Mitigation Measures: Mitigation Measures VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations).

Impacts Remaining After Mitigation: Less than significant.

Threshold NOI-CON-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No public airports, private airstrips, or airport land use plans are located within 2 miles of the LPA area. Therefore, no impacts related to airport noise would occur, and mitigation would not be required.

4.19.3.8 Ecosystems/Biological Resources

This section has been updated since the Draft EIS/EIR based on comments received on the Draft EIS/EIR. Specifically, this Final EIS/EIR section includes additional project measures to prevent the spread of invasive plant species during construction (Project Measures BIO PM-1 [Invasive Plant Species Best Management Practices] and BIO PM-2 [Prohibition of Invasive Plant Species in Landscape Plans]) and clarify that the Project will adhere to the Metro Tree Policy, adopted on October 27, 2022 (Project Measure BIO PM-3 [LA Metro Tree Policy]). Additionally, Mitigation Measure BIO-1 (Bats) was revised to include a CDFW-approved Bat Relocation Plan, including establishment of substitute maternity roost sites if warranted. The date of the raptor breeding season was also revised from January 1 to February 1 based on a comment received from an applicable agency. Additionally, the extent of anticipated temporary dredge and fill impacts to jurisdictional resources have been added

based on updated project plans. The impact conclusions presented in the Draft EIS/EIR regarding biological resources remain unchanged in this Final EIS/EIR, including for Alternative 3.

Locally Preferred Alternative

The analysis presented below concludes that with Project Measures BIO PM-1 (Invasive Plant Species Best Management Practices), BIO PM-2 (Prohibition of Invasive Plant Species in Landscape Plans), and BIO PM-3 (LA Metro Tree Policy), as well as Mitigation Measures BIO-1 (Bats), BIO-2 (Nesting Birds), BIO-3 (Jurisdictional Resources), and BIO-4 (Protected Trees), construction of the LPA will result in no adverse effects related to special-status species, jurisdictional waters, invasive species, and protected trees.

Special-Status Species and Nesting Birds: Although unlikely, roosting bats may be present within the Affected Area for bio during construction. Nesting birds may also be present. If initial ground disturbance and vegetation/tree trimming or removal is required during the nesting bird season (February 1 to May 31), the LPA may adversely affect nesting birds through increased injury or mortality or disruption of normal adult behaviors resulting in the abandonment or harm to eggs and nestlings. Construction-related noise and dust could also result in an adverse indirect effect to nesting birds. Likewise, if initial ground disturbance occurs during bat maternity season, the LPA may adversely affect maternal roosting bats and their young by increasing the potential for injury or mortality through disruption of normal foraging, flying, or roosting behaviors. With implementation of Mitigation Measures BIO-1 (Bats) and BIO-2 (Nesting Birds), no adverse effects related to bats and nesting birds will occur as a result of construction of the LPA.

Jurisdictional Waters: Engineering plans prepared for the Final EIS/EIR indicate that permanent piers and debris walls will be constructed within the jurisdictional limits of the Los Angeles River, Rio Hondo channel, and San Gabriel River. The Project does not propose to alter any embankments or the existing contours of these jurisdictional resources. The jurisdictional delineation conducted for this study mapped the location and extent of jurisdictional water resources potentially affected by the Project. Dredge materials will include excavated materials resulting from the construction of in-channel bridge piers and columns. Fill materials will include temporary construction equipment and materials brought into the channel as well as permanent structures constructed by the LPA, such as in-channel bridge piers and columns. A conservative estimate of the approximate acres of temporary and permanent impacts to jurisdictional waters are shown in Table 4.19.21. These impacts are conservative estimates that reflect the area within which the permanent fill will occur.

Table 4.19.21. Impacts to Jurisdictional Waters

Surface Water Body	Maximum Temporary Impact Area (acres)	Maximum Permanent Impact Area (acres)
Los Angeles River	1.22	0.09
Rio Hondo Channel	0.46	0.01
San Gabriel River	0.36	0.02

Source: Metro 2024q

Construction of these structures will adhere to the requirements outlined in Section 404 of the CWA and Section 408 of the Rivers and Harbors Act, the RWQCB under Section 401 of the CWA, and the CDFW pursuant to Section 1600 et. seq. of the California Fish and Game Code. These jurisdictional water resources will be confirmed by the state and federal authorities at the time that permits are requested. With implementation of Mitigation Measure BIO-3 (Jurisdictional Resources), adverse effects to jurisdictional water resources will be minimized to the extent practicable. Implementation of Mitigation Measure BIO-3 (Jurisdictional Resources) will compensate for effects to jurisdictional water resources. With mitigation, construction of the LPA will result in no adverse effects related to jurisdictional resources.

Invasive Species: Ground disturbance; removal of existing, invasive non-native plant species; and landscaping with invasive plant species could spread invasive species into new areas during construction of the LPA. Project Measure BIO PM-1 (Invasive Plant Species Best Management Practices) will be implemented to prevent the spread of invasive plant species during construction, and Project Measure BIO PM-2 (Prohibition of Invasive Plant Species in Landscape Plans) will preclude the use of invasive plant species in the Project's planting plans. With implementation of these project measures, no adverse effects related to invasive species are expected to occur.

Protected Trees: Effects to trees that meet the requirements of local policies as being protected may require that a permit be obtained prior to encroachment or removal/relocation. Relevant tree protection regulations or ordinances of jurisdictions within the Affected Area for bio are provided in detail in Section 3.4 of the *West Santa Ana Branch Transit Corridor Project Final Biological Resources Impact Analysis Report* (Metro 2024q) for the Cities of Los Angeles, Huntington Park, Bell, South Gate, Downey, and Cerritos. Unincorporated LA County, Vernon, Cudahy, Paramount, Bellflower, and Artesia do not have specific applicable regulations or ordinances related to protected trees. However, Project Measure BIO PM-3 (LA Metro Tree Policy) will be implemented within the Affected Area for street trees that are not protected by local regulations or ordinances.

The exact number and species of protected trees potentially affected within each city is not known at this time but will be subject to verification during final design. A desktop analysis, which included a review of aerial photographs and an estimation of the number of trees potentially affected, was conducted to determine potential impacts on protected trees. An estimated 85 trees could be affected by the LPA. Without mitigation, impacts will be adverse. The LPA will comply with applicable regulations and ordinances as required by each corresponding city to minimize potential impacts. Additionally, Mitigation Measure BIO-4 (Protected Trees) will require that protected trees be protected to the greatest extent to avoid adverse effects. With implementation of Project Measure BIO PM-3 (LA Metro Tree Policy) and Mitigation Measure BIO-4 (Protected Trees), construction of the LPA will not result in adverse effects related to protected trees.

Design Option: Close 186th Street

186th and 187th Streets are roughly 1,000 feet apart and are substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA without the design option are applicable to the LPA with the design option, inclusive of the application of mitigation measures and project measures.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA are applicable to construction of the MSF.

United States Army Corps of Engineers Facilities

The LPA will cross the following USACE facilities: Los Angeles River, Rio Hondo channel, and San Gabriel River. As discussed above under "Jurisdictional Waters" and shown in Table 4.19.21, dredge and fill within the Los Angeles River, Rio Hondo channel, and San Gabriel River will result in a maximum of approximately 1.31 acres, 0.47 acre, and 0.38 acre of permanent and temporary impacts, respectively, which reflects the area within which the permanent fill will occur. Construction of these structures will adhere to the requirements of the USACE under Section 404 of the CWA and Section 408 of the Rivers and Harbors Act. Mitigation Measure BIO-3 (Jurisdictional Resources) will be implemented to avoid and minimize adverse impacts to aquatic resources within USACE facilities to the extent practicable. With implementation of mitigation, impacts to aquatic resources within USACE facilities will not be adverse. As part of the Section 404 permit and Section 408 permission process, USACE may require additional conditions of approval to ensure impacts are not adverse.

Project Measures and Mitigation Measures

With implementation of the following project and mitigation measures, impacts will not be adverse under NEPA and will be less than significant under CEQA.

Project Measures

BIO PM-1: Invasive Plant Species Best Management Practices

The following are options that Metro may consider to control the spread of invasive plant species during construction:

- Prior to construction, a qualified botanist/biologist will provide invasive plant prevention training and an appropriate identification/instruction guide to staff and contractors. A list of target species will be included, along with measures for early detection and eradication.
- A qualified botanist/biologist will monitor the project site immediately prior to and during construction to identify the presence of invasive weeds and recommend measures to avoid their inadvertent spread in association with the Project. Such measures may include inspection and cleaning of construction equipment and use of eradication strategies.
- All disturbed areas that are not converted to hardscape or formally landscaped will be hydro-seeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydro-seeding will occur where no construction activities have occurred prior to winter rains. If invasive species invade these areas prior to hydro-seeding, weed removal will occur in consultation with a qualified botanist/ biologist. Alternatively, in areas not suitable for hydro-seeding, areas that are not hardscaped and are planned for formal landscaping will be mulched to reduce the potential for invasive species to colonize. Mulch will be at least 4 inches thick and will be weed free.

BIO PM-2: Prohibition of Invasive Plant Species in Landscape Plans. The use of species listed in the California Invasive Plant Council Invasive Plant Inventory in project landscape planting plans will be prohibited.

BIO PM-3: LA Metro Tree Policy. The Project will adhere to the LA Metro Tree Policy, adopted on October 27, 2022. The policy requires the preparation of a tree protection plan identifying tree protection zones for trees designated for retention. Where tree removal is required, a plan will be prepared that either replaces removed trees at a ratio of 2:1 or replaces in-kind with trees that are a minimum size of 36-inch standard box (i.e., young trees with a large root ball). The policy also requires engagement with representatives of local jurisdictions and community stakeholders prior to selecting the appropriate species and location for replacement trees.

Mitigation Measures

BIO-1: Bats. A Bat Habitat Suitability Assessment will be conducted by a qualified bat biologist prior to initiation of construction near areas with the potential to provide bat habitat to determine the potential presence and document suitable locations for bat species.

If project construction occurs within the vicinity of suitable habitat for western mastiff bat, pallid bat, silver-haired bat, and big free-tailed bat, a qualified biologist will complete a maternity colony survey during the bat maternity season (June 1 through October 31) to determine the presence or absence of any maternity roosting of bats. If no active roosts are found, then no further action will be required. Mitigation Measures BIO-1a, -1b, and -1c will be implemented, as appropriate, if active roosts are found.

a. If bats are present, project activities disruptive to the roost within 100 feet of an active maternity roost will be delayed, if feasible, until after the maternity season, or until a qualified biologist determines that the roosting site is no longer in use, or as otherwise determined in coordination with the applicable resource agency. This buffer may be reduced at the discretion of a qualified monitoring biologist. A criterion to be used to evaluate the appropriate maternity roosting site buffer includes existing levels of ambient disturbance.

b. If active maternity roosts or hibernacula are found within 100 feet of project construction, the qualified bat biologist will survey (through the use of radio telemetry or other California Department of Fish and Wildlife (CDFW)-approved methods) for nearby alternative maternity colony sites. If the biologist determines in consultation with the CDFW that there are alternative roost sites used by the maternity colony and young are not present, then a Bat Relocation Plan will be prepared by the qualified bat biologist for review and approval by CDFW. Eviction procedures as outlined in a CDFW-approved Bat Relocation Plan will apply. However, if there are no alternative roost sites that can be used by the maternity colony nearby, Mitigation Measure BIO-1c (providing substitute maternity roost nearby) will be required.

c. If a maternity roost would be affected by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony will be provided in close proximity to the affected maternity roost no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements as detailed in the CDFW-approved Bat Relocation Plan. Alternative roost sites will be of comparable size and proximal in location to the affected colony. Alternate roost sites will remain in place following project construction to provide long-term substitute roosting habitat.

BIO-2: Nesting Birds. If Project construction occurs within the peak bird breeding season (February 1 through May 31 for raptors, and March 1 through August 31 for passerines) within suitable nesting habitat (e.g., vegetation, bridges, or other structures), a nesting bird and/or raptor preconstruction survey will be conducted by a qualified biologist within the disturbance footprint plus a 300-foot buffer. The survey will occur no more than three days prior to initiation of ground disturbance and/or vegetation removal. If Project construction occurs in an area over multiple nesting seasons, a subsequent preconstruction nesting bird and raptor survey may be required prior to the initiation of construction each season. Preconstruction nesting bird and raptor surveys will be conducted during the time of day when birds are active and will be of sufficient duration to reliably conclude the presence or absence of nesting birds and/or raptors on-site and within the designated vicinity. The nesting bird and raptor survey results will be submitted to Metro prior to ground and/or vegetation disturbance activities.

If active nests are found, their locations will be flagged. An appropriate avoidance buffer, depending upon the species and the proposed work activity, will be determined by a qualified biologist in consultation with the appropriate regulatory agency. The buffer will be delineated with bright orange construction fencing or other suitable flagging. Active nests will be monitored at a minimum of once per week until it has been determined that the nest is no longer being used by either the young or adults. If project activities must occur within the buffer, they will be conducted at the discretion of the qualified biologist. Inactive nests that have been confirmed by a qualified biologist could be removed based on their recommendations.

BIO-3: Jurisdictional Resources. Impacts associated with permanently disturbed areas within regulated waters will be mitigated in-kind at a minimum ratio of 1:1.

Mitigation can be completed by providing adequate funding to a third-party organization, conservation bank, or in-lieu fee program for in-kind creation or restoration. If mitigation is implemented off-site, mitigation lands should be located in the vicinity of the Affected Area for bio or within the Los Angeles River Watershed. The Affected Area for bio falls within the service area for the Land Veritas Soquel Canyon mitigation bank, which is approved to provide mitigation for permitted impacts under U.S. Army Corps of Engineers 404 permits, Los Angeles Regional Water Quality Control Board 401 Certifications, and California Department of Fish and Wildlife 1600 agreements.

Note: the final mitigation ratios required by regulatory agencies during the permitting process may differ from those identified above.

BIO-4: Protected Trees. Prior to removal of any protected trees (as specified in applicable local ordinances), an Arborist Study will be completed to plot the location of each protected tree that may be encroached upon (i.e., construction activities within the tree protection zone, as measured 5 feet from the canopy dripline), and identify each protected tree proposed to be removed or retained and impacted. The Arborist Study will be prepared by a Certified Consulting Arborist in compliance with local ordinance guidelines and would be prepared in accordance with the reporting requirements of the applicable local jurisdiction. In addition, as required by applicable local jurisdiction ordinances, a tree protection plan will be prepared that would, at a minimum, include site plans, protective tree barriers, the designated tree protection zone (identifying an area sufficiently large enough to protect the tree and its roots from disturbance), activities prohibited or permitted within the tree protection zone, and encroachment boundaries. The Arborist Study and tree protection plan will be submitted to the appropriate departments of local jurisdictions with applicable tree ordinances for approval prior to the start of any tree-disturbing construction activities.

California Environmental Quality Act Determination

Threshold BIO-CON-1: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed; no new infrastructure would be built within the Affected Area for bio as a result of the LPA. The existing freight tracks within the rail ROWs and the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no direct or indirect impacts to special-status species.

Locally Preferred Alternative

As discussed in Section 4.8.2.2 of the Ecosystems/Biological Resources Section, limited low-quality roosting habitat is available for western mastiff bat and pallid bat (CDFW Species of Special Concern), as well as silver-haired bat, a special-status G5/S3S4 species, primarily in existing bridges crossing the Los Angeles River, Rio Hondo channel, and San Gabriel River. Suitable foraging habitat is present for big free-tailed bat, a CDFW Species of Special Concern. Impacts to roosting bats may occur during construction of the LPA if the species is roosting within buildings or bridges. Impacts to bats will be reduced with implementation of Mitigation Measure BIO-1 (Bats) requiring the preparation of a Bat Habitat Suitability Assessment and preconstruction bat survey, and potential delay of construction activities if active maternity roosts are present. In addition, habitat for protected nesting birds is present within and adjacent to the Affected Area. With implementation of Mitigation Measure BIO-2 (Nesting Birds) requiring the avoidance of the bird nesting season or the implementation of a preconstruction nesting bird survey, impacts related to nesting birds will be less than significant.

Mitigation Measures: Mitigation Measures BIO-1 (Bats) and BIO-2 (Nesting Birds)

Impacts Remaining After Mitigation: Less than significant impact.

Design Option: Close 186th Street

186th and 187th Streets are roughly 1,000 feet apart and are substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA without the design option are applicable to the LPA with the design option. With implementation of Mitigation Measure BIO-2 (Nesting Birds), impacts related to nesting birds would be less than significant.

Mitigation Measures: Mitigation Measure BIO-2 (Nesting Birds)

Impacts Remaining After Mitigation: Less than significant impact.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, the impact conclusions presented above for the LPA are applicable to the MSF. With implementation of Mitigation Measure BIO-2 (Nesting Birds), impacts related to nesting birds will be less than significant.

Mitigation Measures: Mitigation Measure BIO-2 (Nesting Birds)

Impacts Remaining After Mitigation: Less than significant impact.

Threshold BIO-CON-2: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed; no new infrastructure would be built within the Affected Area for bio as a result of the LPA. The existing freight tracks within the rail ROWs and the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no direct or indirect impacts to special-status species.

Locally Preferred Alternative

The LPA will be located in a highly developed/urban area, and no quality habitat that would support native riparian plant or wildlife species is present. Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in the California Natural Diversity Database. Similar to special-status plant and wildlife species, vegetation alliances are ranked 1 through 5 based on NatureServe’s (2010) methodology, with those alliances ranked with a scale of global (G) or state/providence (S) as 1 through 3 considered sensitive. The vegetation that is present throughout the Affected Area for bio is ruderal or ornamental in nature. Therefore, impacts to sensitive natural communities will not occur, there will be no impact, and mitigation will not be required.

Design Option: Close 186th Street

186th and 187th Streets are substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, direct and indirect impacts to riparian habitat or sensitive natural communities as a result of the LPA with the design option construction would not occur, and mitigation would not be required.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, impacts to riparian habitat and sensitive natural communities will not occur as a result of the MSF.

Threshold BIO-CON-3: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the environmental setting would remain in current conditions. Therefore, under the No Project Alternative, there would be no impact on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means, and no impacts would occur.

Locally Preferred Alternative

State and federally protected wetlands are not present within the Affected Area for bio. Therefore, impacts to protected wetlands as a result of the LPA will not occur. Urban channels, including the Los Angeles River, Rio Hondo channel, and the San Gabriel River, occur within the Affected Area for bio. According to current design and construction methods, impacts to these jurisdictional water resources will occur. Specifically, the Los Angeles River, Rio Hondo channel, and San Gabriel River crossings will result in 1.31 acres, 0.47 acre, and 0.38 acre of impacts, respectively.

The LPA does not propose to alter any embankments or the existing contours of the jurisdictional resources. Impacts within regulated waters may be subject to the jurisdiction of regulatory agencies. This includes the requirements of the USACE under Section 404 of the CWA and Section 408 of the Rivers and Harbors Act, the RWQCB under Section 401 of the CWA, and CDFW pursuant to Section 1600 et. seq. of the California Fish and Game Code. The jurisdictional delineation conducted for this study mapped the extent of regulated waters and potential impacts. However, the location and extent of jurisdictional features will be confirmed by the state and federal authorities at the time that permits are requested. Implementation of Mitigation Measure BIO-3 (Jurisdictional Resources) requiring avoidance, minimization, and compensatory measures will be implemented to minimize and compensate for potential significant impacts to jurisdictional waters. With mitigation, impacts will be less than significant.

Mitigation Measures: Mitigation Measure BIO-3 (Jurisdictional Resources)

Impacts Remaining After Mitigation: Less than significant impact.

Design Option: Close 186th Street

The design option site does not contain state or federally protected wetlands. Therefore, impacts to state or federally protected wetlands would not occur specific to the design option.

Maintenance and Storage Facility

The MSF site does not contain state or federally protected wetlands. Therefore, impacts to state or federally protected wetlands will not occur as a result of the MSF.

Threshold BIO-CON-4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Project Alternative

The LPA would not be constructed under the No Project Alternative; the environmental setting would remain in current conditions. Under the No Project Alternative, there would be no interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impacts would occur.

Locally Preferred Alternative

The LPA will be located within developed, urban areas; therefore, it is unlikely that wildlife uses the immediate area for regional movement. Furthermore, CDFW does not identify any mapped California Essential Habitat Connectivity areas within the Affected Area for bio, nor does it contain any Missing Linkages, as identified by the South Coast Wildlands Network. Therefore, the LPA will not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

186th and 187th Streets are substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, consistent with the LPA without the design option, construction of the LPA with the design option would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impacts would occur.

Maintenance and Storage Facility

The MSF site is substantially similar to the rest of the Affected Area in regard to existing biological conditions (i.e., urban, disturbed). Therefore, MSF construction will not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impacts will occur as a result of MSF construction.

Threshold BIO-CON-5: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Project Alternative

The LPA would not be constructed under the No Project Alternative; the environmental setting would remain in current conditions. Under the No Project Alternative, there would not be conflicts with any local policies or ordinances protecting biological resources, and no impacts would occur.

Locally Preferred Alternative

Numerous protected street trees in the Cities of Los Angeles, Huntington Park, Bell, South Gate, Downey, and Cerritos are present within the Affected Area for bio. The exact number and species of protected trees potentially affected by the LPA is not known at this time. Based on a desktop study, approximately 85 trees could be affected by construction of the LPA. Impacts to protected trees will result in a potentially significant impact without mitigation. With the implementation of Mitigation Measure BIO-4 (Protected Trees), an Arborist Study prepared by a Certified Consulting Arborist will be completed to plot the location of each protected tree within the Affected Area for bio that may be encroached upon and identify each protected tree proposed to be removed or retained and affected. Additionally, the Arborist Study will detail a mitigation program for the potential impacts to be tailored to comply with the requirements of each relevant local jurisdiction. Thus, impacts related to protected trees will be reduced to a less than significant level with mitigation.

Mitigation Measure: Mitigation Measure BIO-4 (Protected Trees)

Impacts Remaining After Mitigation: Less than significant impact.

Design Option: Close 186th Street

Construction of the LPA with the design option would not conflict with any local policies or ordinances protecting biological resources, and no impacts would occur.

Maintenance and Storage Facility

Construction of the MSF will not conflict with any local policies or ordinances protecting biological resources, and no impacts will occur as a result of MSF construction.

Threshold BIO-CON-6: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the environmental setting would remain in current conditions. Under the No Project Alternative, there would not be conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. No impacts would occur.

Locally Preferred Alternative

The LPA is not located in an area with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Thus, the LPA

will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. No impact will occur, and mitigation will not be required.

Design Option: Close 186th Street

Construction of the LPA with the design option would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Therefore, no impacts would occur, and mitigation would not be required.

Maintenance and Storage Facility

Construction of the MSF will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Habitat Conservation Plan. Therefore, no impacts will occur, and mitigation will not be required.

4.19.3.9 Geotechnical, Subsurface, and Seismic Impacts

This section describes the temporary construction impacts of the LPA, including the design option and MSF, on geotechnical, subsurface, and seismic resources. Construction will require the activities as summarized in Section 4.19.2. As detailed in Section 4.9.2 in the Geotechnical, Subsurface, and Seismic Resources Section, the geotech Affected Area is underlain by alluvial soils with a locally shallow groundwater table, is situated near active faults, and, although not anticipated for the LPA, could encounter local oil or gas-related hazards.

No substantive changes have been made to this section since the Draft EIS/EIR, and the impact conclusions in the Draft EIS/EIR remain unchanged, including with respect to Alternative 3. Potential impacts associated with construction of the LPA, design option, and MSF will be minimized through compliance with the methodology and established design standards discussed in Section 4.9.1 of the Geotechnical, Subsurface, and Seismic Section and implemented through Project Measure GEO PM-2 (Geotechnical Design [Construction]). Coordination with the USACE is also discussed in Section 4.9.1. As a result, adverse impacts to geotechnical, subsurface, and seismic resources will be minimized. Note that construction impacts associated with oil and gas wells, including environmental and health impacts, are discussed in Section 4.19.3.10 in the Construction-related Hazards and Hazardous Materials Section.

Locally Preferred Alternative

Unconsolidated/Saturated Alluvial Soils: Construction of the LPA could result in an adverse effect related to unconsolidated/saturated alluvial soils if construction (deep excavations) directly or indirectly causes settlement resulting in distress to existing adjacent improvements. Unconsolidated or water-saturated alluvial soil deposits can be encountered during deep excavations, such as for viaduct foundation elements included in the LPA. Shoring, casing, or other ground-stabilization methods will be used to minimize impacts during excavations.

Temporary excavations will be required during construction of the LPA. Unsafe excavations could result in risk to life and property as a result of a temporary excavation failure. All temporary excavations will be performed in accordance with the safety requirements of

Cal/OSHA. Shoring will be designed in accordance with the MRDC or equivalent, as discussed in Section 4.9.1 of the Geotechnical, Subsurface, and Seismic Section.

Soil types may necessitate various types/styles of bracing or excavation support. However, regardless of soil type, excavation depth and configuration determine whether a temporary excavation requires support. Temporary excavation needs will be developed as the designs progress for the LPA.

Temporary excavation bracing will be designed to protect adjacent structures, traffic, utilities, and construction personnel. Suitable factors of safety will be used in the design of the temporary supports. Performance of the temporary construction must conform to the requirements stated in the MRDC or equivalent.

Under NEPA, adverse effects will be avoided based on the above discussions and application of the prescribed standards, requirements, and guidance as mandated by Project Measure GEO PM-2 (Geotechnical Design [Construction]). Impacts resulting from the LPA will be minimized, and no construction-related mitigation measures will be required for unconsolidated/saturated alluvial soils during construction.

Natural Subsurface Gas: If oil wells are encountered during construction of the LPA, the wells will be abandoned in accordance with state guidelines. Refer to Section 4.19.3.10 for additional discussion on oil wells in the geotech Affected Area.

The LPA alignment is not in a Methane Hazard Zone, and there are no oil or gas fields in the geotech Affected Area. Although not likely in the geotech Affected Area, if subsurface gases were to be encountered during excavation for foundations for viaducts or other support structures, this could pose a fire/explosion hazard during construction. Additionally, accumulation of methane gas in an excavation could replace oxygen in the breathing zone. Accumulation of hydrogen sulfide (H_2S) is highly toxic when inhaled at high concentrations, thus creating a health hazard during construction. Methane and H_2S are considered hazardous gases because of their explosive properties. H_2S is also highly toxic when inhaled and typically has a strong rotten-egg-like odor at lower, non-toxic levels.

Foundation excavations for viaducts or other support structures may need to be considered "potentially gassy," and precautions such as forced-air circulation and air monitoring may need to be implemented during construction. In accordance with Project Measure GEO PM-2 (Geotechnical Design [Construction]), this potential hazard will be addressed by incorporating the detailed geotechnical design report's recommendations into the project plans and specifications. Comprehensive geologic, geotechnical, and environmental investigations will be conducted as design advances, and design-level documents will be prepared for the LPA. These design-level reports will verify and document the hazardous subsurface conditions in the project area and support the design recommendations in compliance with the applicable regulations and standards for hazardous gases. Under NEPA, adverse effects will be avoided by implementing these mandatory design requirements; impacts related to naturally occurring oil and gas will be minimized and no mitigation will be required.

Design Option: Close 186th Street

The LPA with the design option is substantially similar to the LPA without the design option. Construction activities for the LPA with the design option would also be substantially similar to those for the LPA without the design option. Therefore, the determinations provided for the LPA without the design option are also applicable to the LPA with the design option. With implementation of Project Measure GEO PM-2 (Geotechnical Design [Construction]) under NEPA, impacts resulting from the LPA with the design option would be minimized and no adverse effects would occur.

Maintenance and Storage Facility

Similar to the LPA, structures associated with the MSF will be subject to associated prescribed standards, requirements, and guidance related to temporary excavations, including Cal/OSHA requirements for temporary shoring and worker safety. Therefore, the discussion, analysis, and impact determinations presented for construction of the LPA are applicable to the MSF; impacts resulting from the MSF will be minimized; no adverse effects will occur; and no mitigation will be required.

U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three concrete-lined USACE facilities: Los Angeles River, Rio Hondo channel, and the San Gabriel River. Construction of the LPA crossing at these three facilities will require constructing new rail bridges adjacent to, or along, the same alignment as the existing rail bridges (the Freight/Los Angeles River Bridge [protect in place], the Freight/Rio Hondo Channel Bridge [protect in place], and the UPRR/San Gabriel River Bridge [to be demolished and replaced]). The new bridge crossings will result in footprints in the existing facilities that are similar to the current footprints. Similar to the existing river crossing bridge foundations, the new bridge foundations will connect to the bridge columns through the channel bottom, resulting in a fully concrete-lined channel. At each of the river crossings, the new and existing structures are underlain by alluvial soil deposits, which are common to the entire geotech Affected Area (Unit Qya_2 on Figure 4.9-1). Accordingly, the LPA impact determinations for unconsolidated/saturated alluvial soils and naturally occurring oil and gas during construction are applicable to the three USACE facility crossings.

Similar to the LPA, structures within and over the USACE facilities will be subject to associated prescribed standards, requirements, and guidance related to temporary excavations, including Cal/OSHA requirements for temporary shoring and worker safety. The geology and soils below the concrete-lined channels and adjacent areas will not be adversely affected by construction of the LPA. As such, the discussion, analysis, and impact determinations presented for construction of the LPA are applicable to the USACE facility crossings. With implementation of Project Measure GEO PM-2 (Geotechnical Design [Construction]), under NEPA, impacts on the USACE facility crossings will be minimized; no adverse effects will occur; and no mitigation will be required.

Project Measures and Mitigation Measures

Potential impacts associated with construction of the LPA, design option, and MSF will be minimized through compliance with established design standards, as discussed in Section 4.9.1 of the Geotechnical, Subsurface, and Seismic Section and implemented through Project Measure GEO PM-2 (Geotechnical Design [Construction]).

During construction of the LPA, temporary conditions might arise that could result in potential impacts related to human injury and loss or damage to structures. Worker health and safety plans specific to each of the major tasks involved in development of the LPA (including the design option, and MSF) will be prepared prior to the start of construction in accordance with Metro and Cal/OSHA requirements. Strict compliance with these worker health and safety plans will reduce the risks to workers, and no adverse effects will result.

Project Measures

Metro will implement the following project measure (which was developed in accordance with the design requirements summarized in Section 4.9.1 of the Geotechnical, Subsurface, and Seismic Section) to reduce geologic-, soil-, and seismicity-related impacts during construction. The project measure is required and is considered to be part of the LPA:

GEO PM-2: Geotechnical Design (Construction)

A number of geotechnical design reports are required for the LPA, as detailed in the MRDC, Section 5.6, Geotechnical Investigations, Analysis, and Design. Section 5.6 of the MRDC provides detailed requirements for planning and conducting a geotechnical investigation, geotechnical design methodologies, and reporting. In addition, and as referenced in the MRDC, Caltrans and the County of Los Angeles Building Code have their own design requirements for bridges and aerial structures (Caltrans) and building structures (County of Los Angeles) that are also required.

In accordance with the MRDC, geotechnical report recommendations will be incorporated into the LPA plans and specifications. These recommendations will be a product of the LPA design process and will address the subsurface hazards identified in this report. The design reports will also provide recommendations to be implemented during construction. The construction recommendations will address temporary excavations and ground settlement, and oil and gas hazards, and will include construction monitoring plans specific to the LPA. Implementation of the recommendations and monitoring plans will be required, as applicable, for both on-site and off-site properties and existing improvements that could be affected by an excavation.

Without these construction recommendations, the LPA plans and specifications will not be approved and the LPA will not be allowed to advance into the final design stage nor ultimately into construction. As a part of the LPA, Metro has developed a comprehensive geotechnical field investigation and laboratory testing program and is in the process of implementing the program. Findings from that program will be used to verify the information presented in the Final EIS/EIR.

Mitigation Measures

As mandated by the project measure, hazards related to geology and soils will be investigated during design-level geotechnical studies that will be performed for the LPA, design option, and MSF. These studies will quantify the hazards and allow for appropriate geotechnical design recommendations to be incorporated into the plans for the LPA. Therefore, construction of the LPA will not be significantly affected by the potential geologic hazards, and geology and soils-related hazard mitigation measures are not required.

California Environmental Quality Act Determination

To satisfy CEQA requirements, the following subsections present geology and soils construction impacts analyzed in accordance with Appendix G of the *CEQA Guidelines*. CEQA is only concerned with the effects of a project on the environment, not the effects of the environment on the Project (*California Building Industry Association v. Bay Area Air Quality Management District* [2015] 62 Cal. 4th 369.) As such, the following analysis considers whether construction of the Project might exacerbate geological, seismic, and related hazards (see state *CEQA Guidelines*, 14 CCR §15126.2(a)).

No Project Alternative

Under the No Project Alternative, LPA-related construction activities would not occur; no construction-related impacts would occur; and no mitigation measures would be required. As such, the No Project Alternative is not specifically addressed in the following subsections.

Threshold GEO-CON-1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Locally Preferred Alternative and Maintenance and Storage Facility

Construction of the LPA and MSF will not have a significant impact on the faults in the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region. The improvements included in the LPA are shallow from a geologic perspective and will not exacerbate existing geologic conditions related to active faulting during construction. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Similar to construction of the LPA without the design option, construction of the LPA with the design option would not have a significant impact on faults in the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region. The improvements included in the design option are shallow from a geologic perspective and would not exacerbate existing geologic conditions related to active faulting during construction. Therefore, impacts would be less than significant, and mitigation would not be required.

Threshold GEO-CON-2: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Locally Preferred Alternative and Maintenance and Storage Facility

Construction of the LPA and MSF will not have significant impacts on the seismic potential of the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region. The improvements included in the LPA are shallow from a geologic perspective and will not exacerbate existing geologic conditions related to seismic shaking. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Similar to construction of the LPA without the design option, construction of the LPA with the design option would not have significant impacts on the seismic potential of the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region. The improvements included in the design option are shallow from a geologic perspective and would not exacerbate existing geologic conditions related to seismic shaking. Therefore, impacts would be less than significant, and mitigation would not be required.

Threshold GEO-CON-3: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Locally Preferred Alternative and Maintenance and Storage Facility

Construction of the LPA and MSF will not result in significant impacts on the geologic environment of the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region and will not result in new liquefiable areas or exacerbate existing geologic conditions related to seismic-related ground failure, including liquefaction. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Similar to construction of the LPA without the design option, construction of the LPA with the design option would not result in significant impacts on the geologic environment of the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region and would not result in new liquefiable areas or exacerbate existing geologic conditions related to seismic-related ground failure, including liquefaction. Therefore, impacts would be less than significant, and mitigation would not be required.

Threshold GEO-CON-4: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Locally Preferred Alternative and Maintenance and Storage Facility

The landscape within the Affected Area for geotech is relatively flat, and no landslides have been mapped in the vicinity of the geotech Affected Area.

Construction of the LPA and MSF could result in adverse effects related to unconsolidated/saturated alluvial soils if construction (deep excavations) directly or indirectly causes settlement resulting in distress to existing adjacent improvements. Unconsolidated or water-saturated alluvial soil deposits can be encountered during deep excavations. Shoring, casing, or other ground-stabilization methods will be used to minimize impacts during excavations.

Temporary excavations will be required during construction of the Project. Unsafe excavations could result in risk to life and property as a result of a temporary excavation failure. All temporary excavations will be performed in accordance with the safety requirements of Cal/OSHA. Shoring will be designed in accordance with the MRDC or equivalent, as discussed in Section 4.9.1 of the Geotechnical, Subsurface, and Seismic Section.

Soil types may necessitate various types/styles of bracing or excavation support. However, regardless of soil type, excavation depth and configuration drive the requirement of whether a

temporary excavation requires support. Temporary excavation needs will be developed as the designs progress for the LPA.

Temporary excavation bracing will be designed to protect adjacent structures, traffic, utilities, and construction personnel. Suitable factors of safety will be used in the design of the temporary supports. Performance of the temporary construction must conform to the requirements stated in the MRDC or equivalent.

Based on the above discussions and application of the prescribed standards, requirements, and guidance as mandated by Project Measure GEO PM-2 (Geotechnical Design [Construction]), LPA and MSF impacts will be minimized, and adverse effects associated with unconsolidated/saturated alluvial soils will be avoided. Therefore, impacts will be less than significant, and no mitigation measures will be required. Additional information on the various construction techniques that may be used are included in the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2024g).

Design Option: Close 186th Street

Similar to construction of the LPA without the design option, construction of the LPA with the design option could result in adverse effects related to unconsolidated/saturated alluvial soils if construction (deep excavations) directly or indirectly causes settlement resulting in distress to existing adjacent improvements. Unconsolidated or water-saturated alluvial soil deposits can be encountered during deep excavations. Shoring, casing, or other ground-stabilization methods would be used to minimize impacts during excavations.

Temporary excavations would be required during construction. Unsafe excavations could result in risk to life and property as a result of a temporary excavation failure. All temporary excavations would be performed in accordance with the safety requirements of Cal/OSHA. Shoring would be designed in accordance with the MRDC or equivalent, as discussed in Section 4.9.1 in the Geotechnical, Subsurface, and Seismic Section.

Soil types may necessitate various types/styles of bracing or excavation support. However, regardless of soil type, excavation depth and configuration determine whether a temporary excavation requires support. Temporary excavation needs would be developed as the design progresses.

Temporary excavation bracing would be designed to protect adjacent structures, traffic, utilities, and construction personnel. Suitable factors of safety would be used in the design of the temporary supports. Performance of the temporary construction must conform to the requirements stated in the MRDC or equivalent.

Based on the above discussions and application of the prescribed standards, requirements, and guidance as mandated by Project Measure GEO PM-2 (Geotechnical Design [Construction]), impacts from the LPA with the design option would be minimized, and adverse effects associated with unconsolidated/saturated alluvial soils would be avoided. Therefore, impacts would be less than significant, and no mitigation measures would be required. Additional information on the various construction techniques that may be used are included in the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2024g).

Threshold GEO-CON-5: Would the project result in substantial soil erosion or the loss of topsoil?

Locally Preferred Alternative and Maintenance and Storage Facility

The LPA and MSF are located in an urban setting and the topsoil layer in most of the Affected Area for geotech has been disturbed or concealed by previous human activities. Construction of the LPA will result in ground surface disturbance during site clearance, excavation, and grading that could create the potential for soil erosion. The LPA will be designed and constructed in accordance with state and local guidelines regarding erosion control and management (see Section 4.19.3.11, Construction-related Water Resources). Additionally, as detailed in Section 4.19.3.11, a Stormwater Pollution Prevention Plan and Water Quality Control Plan will be required as implementation elements of the LPA. These plans will limit potential impacts related to erosion. As such, the LPA will minimize significant impacts involving soil erosion or loss of topsoil. Therefore, impacts associated with soil erosion or loss of topsoil will be reduced to less than significant levels, and mitigation will not be required.

Design Option: Close 186th Street

The design option is located in an urban setting, and the topsoil layer in most of the Affected Area for geotech has been disturbed or concealed by previous human activities. Construction of the LPA with the design option would result in ground surface disturbance during site clearance, excavation, and grading that could create the potential for soil erosion. The LPA with the design option would be designed and constructed in accordance with state and local guidelines regarding erosion control and management (see Section 4.19.3.11, Construction-related Water Resources). Additionally, as detailed in Section 4.19.3.11, a Stormwater Pollution Prevention Plan and Water Quality Control Plan would be required as implementation elements of the design option. These plans would limit potential impacts related to erosion. As such, significant impacts involving soil erosion or loss of topsoil would be minimized. Therefore, impacts associated with soil erosion or loss of topsoil would be reduced to less than significant levels, and mitigation would not be required.

Threshold GEO-CON-6: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Locally Preferred Alternative and Maintenance and Storage Facility

Construction of the LPA, including the MSF, will not generate new natural geologic hazard areas (landslide, lateral spreading, subsidence, liquefaction, or collapse) or result in significant impacts on the geologic environment of the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region and will not exacerbate existing geologic conditions related to potential on- or off-site lateral spreading, subsidence, liquefaction, or collapse or seismic-related ground failure, including liquefaction. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with the LPA without the design option, construction of the LPA with the design option would not generate new natural geologic hazard areas (landslide, lateral spreading, subsidence, liquefaction, or collapse), nor result in significant impacts on the geologic environment of the geotech Affected Area. The design features being considered are not

uncommon for the LA region, are relatively shallow, and would not exacerbate existing geologic conditions related to potential on- or off-site lateral spreading, subsidence, liquefaction, or collapse, or seismic-related ground failure, including liquefaction. Therefore, impacts would be less than significant, and no mitigation measures would be required.

Threshold GEO-CON-7: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Locally Preferred Alternative and Maintenance and Storage Facility

Construction of the LPA and MSF will not have a significant impact on the expansive potential of the soils in the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region and will not exacerbate existing geologic conditions related to expansive soils during construction. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with the LPA without the design option, construction of the LPA with the design option would not have a significant impact on the expansive potential of the soils in the Affected Area for geotech. The design features being considered are not uncommon for the Los Angeles region and would not exacerbate existing geologic conditions related to expansive soils during construction. Therefore, impacts would be less than significant, and mitigation would not be required.

Threshold GEO-CON-8: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?

Locally Preferred Alternatives and Maintenance and Storage Facility

Construction activities associated with the LPA and MSF will all occur within highly urbanized areas served by existing municipal sewage systems. The use of septic tanks or alternative wastewater systems during construction is not anticipated under the LPA. No impacts will occur, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with the LPA without the design option, construction activities associated with the LPA with the design option would occur within highly urbanized areas served by existing municipal sewage systems. The use of septic tanks or alternative wastewater systems during construction is not anticipated under the LPA with the design option. No impacts would occur, and mitigation would not be required.

Threshold GEO-CON-9: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Refer to Section 4.19.3.14 (Construction-related Historic, Archaeological, and Paleontological Resources) and the *West Santa Ana Branch Transit Corridor Project Final Paleontological Resource Impacts Analysis Report* (Metro 2024y) for the determination to this threshold.

4.19.3.10 Hazards and Hazardous Materials

The LPA is located in an urban area not subject to wildland fires. No airports are located within 4 miles of the LPA. Therefore, construction of the LPA will not result in adverse effects related to wildland fires or airport hazards, and these topics are not discussed further in this section.

This section has been revised since the Draft EIS/EIR based on the identification of the LPA, inclusive of refinements, and comments received on the Draft EIS/EIR. As described in Section 4.10 (Hazards and Hazardous Materials Section), the boundaries of the Affected Area for hazards and hazmat have been updated since the Draft EIS/EIR to encompass the footprint of the LPA including the design option and MSF, inclusive of refinements. As stated in Section 4.10, a similar number of educational facilities, pipelines, and oil and gas wells have been identified in the updated Affected Area for hazards and hazmat as were identified for Alternative 3 in the Draft EIS/EIR; however, the specific educational facilities and pipelines have changed slightly due to comments from stakeholders and the update in the boundaries of the Affected Area for hazards and hazmat.

In addition, the construction analysis considers the supplemental groundwater well location information provided by USEPA for the three adjacent Superfund sites identified in the Draft EIS/EIR and information related to natural gas and liquid hazardous material pipelines in the Affected Area for hazards and hazmat. While none of the newly identified groundwater wells overlap the project footprint, hazardous material pipelines overlap the project footprint at the MSF and in areas identified in the Draft EIS/EIR.

The project measures and mitigation measures included or referenced in this section have also been updated since the Draft EIS/EIR. The Draft EIS/EIR stated that one former landfill (South Gate Rod and Gun Club) with potential soil vapor concerns is located in the Affected Area for hazards and hazmat (landfills). The Draft EIS/EIR indicated that Mitigation Measure GEO-5 (Gas Monitoring [Construction]) would be implemented during construction near this former landfill to monitor and record hazardous gas levels, if present. With implementation of this measure, there would not be adverse effects related to landfill gas accumulation. However, the Mitigation Measure GEO-5 (Gas Monitoring [Construction]), which was described in Chapter 4, Section 4.19.3.9 of the Draft EIS/EIR, largely applied during construction of underground portions of the Project, which was limited to Alternatives 1 and 2. As such, Mitigation Measure GEO-5 (Gas Monitoring [Construction]) is not included in this Final EIS/EIR. However, the Draft EIS/EIR included Project Measure HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), which requires the contractor to prepare plans, including for soil vapor, and establish provisions per Metro's contractor specifications for the disturbance of contaminated materials (known or undocumented). Per the conditions of this measure, the proper management and disposition of contaminated soil gases would be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance. Project Measure HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) has been updated for the Final EIS/EIR to specifically indicate that a Landfill Gas Accumulation Management Plan will be developed as applicable. Therefore, the implementation of HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) will reduce potential impacts associated with methane, if present, from the former landfill by establishing provisions per Metro's contractor specifications and compliance with federal and/or state guidance.

The Draft EIS/EIR also identified two mitigation measures to reduce impacts associated with the use of hazardous materials on educational facilities, Mitigation Measure HAZ-1 (Hazardous Materials and Nearby Educational Facilities [Operation]) and Mitigation Measure HAZ-2 (Hazardous Materials and Nearby Educational Facilities [Construction]). However, it has since been determined that the use of extremely hazardous materials in quantities equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety Code will not be used during operation or construction of the LPA. Therefore, these mitigation measures have been eliminated from the Final EIS/EIR.

Additionally, one mitigation measure applicable to the LPA has been developed since the Draft EIS/EIR. Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells) was developed based on Metro's experience with other projects that had the potential for unidentified oil and gas wells. This measure will be implemented during construction of the LPA to reduce potential impacts if unidentified oil and gas wells are identified. The likelihood of encountering unidentified oil or gas wells during construction of the LPA has not changed since circulation of the Draft EIS/EIR.

The impact conclusions presented in the Draft EIS/EIR remain applicable, including with respect to Alternative 3. No new significant adverse impact or substantially more severe impact has been identified.

Locally Preferred Alternative

Environmental Concern Sites

The data presented in the following sections has been adjusted since the Draft EIS/EIR based on updates to the Affected Area for hazards and hazmat made as a result of refinements to the LPA. Therefore, the total number of each type of environmental concern site in the Affected Area for hazards and hazmat as presented below may differ slightly from the totals presented in the Draft EIS/EIR.

Known, Potential, and Historical Concern Sites: The Affected Area for hazards and hazmat contains 307 known, potential, or historical environmental concern sites, 21 of which have contaminated groundwater (refer to Appendix B of the *West Santa Ana Branch Transit Corridor Project Final Hazardous Materials Impact Analysis Report* and Table 4.10.1 in Section 4.10.2 of the Hazards and Hazardous Materials Section. In particular, a groundwater well associated with the Jervis B. Webb release site, which is a Cortese/Superfund hazardous materials site, is located immediately east of the location for TPSS Site #10 near Firestone Boulevard. Disturbances of soil, soil vapor, or groundwater during construction at environmental concern sites have the potential to result in adverse effects due to potential health risks to work crews, nearby residents, or the public during construction. Project Measures HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-7 (Disposal of Groundwater), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) will be implemented during construction to remediate any contamination associated with environmental concern sites. With implementation of these project measures, construction of the LPA will not result in adverse effects related to environmental concern sites.

Landfills: The Affected Area for hazards and hazmat specific for the purpose of the analysis related to landfills (Affected Area for hazards and hazmat [landfills]) is 0.25 mile from the LPA. One former landfill (South Gate Rod and Gun Club) poses soil vapor concerns in the

Affected Area for hazards and hazmat (landfills) along the LPA. This site is located within a construction staging area. As a result, methane or other gases may be present and could accumulate during construction, creating a health and explosion hazard. Therefore, Project Measures HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment – Phase I and II ESAs), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) will be implemented to reduce landfill gas impacts during construction. With implementation of these project measures, construction of the LPA will not result in adverse effects associated with potential landfill gases.

Groundwater Contamination: There are 21 sites with known groundwater contamination in the Affected Area for hazards and hazmat. Construction dewatering may be required at station locations and for bridge and structure footings. If contaminated groundwater requires dewatering, an adverse effect could occur. In locations where short or long-term dewatering of contaminated groundwater is necessary, Project Measure HAZ PM-7 (Disposal of Groundwater) will be implemented. With implementation of this project measure, contaminated groundwater will be managed appropriately, and construction of the LPA will not result in adverse effects related to contaminated groundwater.

General Hazardous Materials Conditions

LBP, ADL, Asbestos/ACM, Railroad, Pipelines, Agriculture, PCBs: During construction of the LPA, LBP, ADL, asbestos/ACM, PCBs, and contaminants associated with railroad and pipeline utility corridors and previous agricultural use may be encountered during demolition and ground-disturbing activities. The disturbance of contaminated structures, soil, and/or groundwater may create a health risk to construction crews, nearby residents, or the public.

The following project measures will be implemented to identify and remediate hazardous materials and reduce potential effects related to hazardous materials conditions: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater). With implementation of these project measures, construction of the LPA will not result in adverse effects related to general hazardous materials conditions.

Educational Facilities

The Affected Area for hazards and hazmat specific for the purposes of the analysis related to educational facilities, is 0.25 mile from the LPA (Affected Area for hazards and hazmat [educational facilities]). There are 45 educational facilities located within the Affected Area for hazards and hazmat (educational facilities). The use of extremely hazardous materials in quantities equal to or greater than the state threshold quantity specified in subdivision (j) of Section 25532 of the Health and Safety Code will not be used during construction of the LPA. Additionally, construction of the LPA will not result in emissions of extremely hazardous materials. Therefore, construction of the LPA will not result in adverse effects related to hazardous air emissions or extremely hazardous substances or mixtures in the vicinity of an educational facility within the Affected Area for hazards and hazmat (educational facilities) along the LPA.

Oil and Gas Wells

No oil and gas fields are located in the Affected Area for hazards and hazmat. One known abandoned oil/gas well is located within the Affected Area for hazards and hazmat; however, this well is not with the LPA footprint. Although the well is reportedly abandoned, it may not have been abandoned to current standards. Additionally, unidentified abandoned oil and gas wells may be present in the Affected Area for hazards and hazmat.

During construction of the LPA, potential effects associated with leaking oil and gas wells or abandoned oil and gas wells not plugged and abandoned to current standards include the release of methane and/or hydrogen sulfide gas, oil seepage, and contaminated soils and groundwater. Potential fire and explosion hazards from accumulation of methane vapor and hydrogen sulfide gas within underground construction areas could result in adverse effects. In addition, the accumulation of methane gas could result in high concentrations of hydrogen sulfide and displace oxygen in the breathing zone, which would be highly toxic when inhaled and create a health hazard.

To reduce the potential effects of known and unidentified wells and hazardous subsurface gases during construction of the LPA, the following project measures are required: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-7 (Disposal of Groundwater), and HAZ PM-8 (Oil Well Abandonment).

Additionally, implementation of Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells) will further reduce risk. This measure includes notification of CalGEM and proper abandonment if unknown oil wells are encountered during construction of the LPA.

With implementation of the project measures and mitigation measures during construction, impacts will be reduced because hazardous materials will be managed appropriately; property assessments (Phase I and II ESAs) will be completed prior to construction; contaminated groundwater will be managed appropriately; CalGEM will be notified of wells; oil/gas wells will be abandoned appropriately; the contractor will be prepared to encounter known or undocumented hazardous materials; and appropriate ventilation will be maintained during construction. Therefore, construction of the LPA will not result in adverse effects related to oil and gas wells.

Design Option: Close 186th Street

Construction of the LPA with the design option would be similar to construction of the LPA without the design option. The following are located within the Affected Area for hazards and hazmat at the location of the design option; these sites are also within the Affected Area for hazards and hazmat along the LPA at this location:

- One historical environmental concern site
- One educational facility

However, no known oil and gas wells, landfills, hazardous material pipelines, or groundwater release sites are located within the Affected Area for hazards and hazmat at the design option. While there are no known oil and gas wells, unidentified abandoned oil and gas wells may be present.

Consistent with the LPA, the following project and mitigation measures would be implemented for construction of the design option: HAZ PM-4 (Handling, Storage, and

Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), and Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells). With implementation of these measures, construction of the design option would not result in adverse effects related to environmental concern sites, landfill gases, groundwater contamination, LBP, ADL, asbestos/ACM, railroad, pipelines, agriculture, PCBs, educational facilities, and oil/gas wells.

Maintenance and Storage Facility

The following are located within the Affected Area for hazards and hazmat associated with the MSF; these sites are also within the Affected Area for hazards and hazmat along the LPA:

- Two educational facilities

The following are located within the Affected Area for hazards and hazmat associated with the MSF; however, they are not located within the Affected Area for hazards and hazmat along the LPA:

- Five hazardous material pipelines
- Three historical environmental concern sites

No oil and gas wells, landfills, or groundwater release sites are located within the Affected Area for hazards and hazmat associated with the MSF. While there are no known oil and gas wells, unidentified abandoned oil and gas wells may be present.

The potential for effects resulting from construction of the MSF is generally consistent with those associated with construction of the LPA. Consistent with the LPA, the following project measures and mitigation measures will be implemented for construction of the design option: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), and Mitigation Measures HAZ-1 (Unidentified Oil and Gas Wells). With implementation of these measures, construction of the MSF will not result in adverse effects related to environmental concern sites, landfill gases, groundwater contamination, LBP, ADL, asbestos/ACM, railroad, pipelines, agriculture, PCBs, educational facilities, and oil/gas wells.

U.S. Army Corps of Engineers Facilities

Construction of the LPA will require ground-disturbing activities at three USACE river channels: the Los Angeles River, Rio Hondo channel, and San Gabriel River. Soil and groundwater along both sides of the rivers and within the riverbeds will be affected by construction. While there are no known oil and gas wells within the Affected Area for hazards and hazmat at the USACE facilities, the following, which are also present in the Affected Area for hazards and hazmat, are present:

- Three known release concern sites (one near the Los Angeles River, two near the Rio Hondo channel)
- Two landfill listed facilities (near the Rio Hondo channel)
- Two known groundwater release sites (near the Los Angeles River)

- Three educational facilities (two near the Los Angeles River and one near the San Gabriel River)
- Several hazardous material pipelines

The potential for effects resulting from construction of the LPA within and over USACE facilities are generally consistent with those associated with construction of the LPA outside USACE facilities. Extremely hazardous materials in quantities equal to or greater than the state threshold quantity will not be used during construction within or over USACE facilities. Additionally, construction within and over USACE facilities will not result in emissions of extremely hazardous materials. The following could occur during ground-disturbing activities within the USACE facilities:

- Los Angeles River and Rio Hondo channel: potential to disturb contamination associated with known release sites
- Rio Hondo channel: potential to encounter soil vapors from former landfills
- Los Angeles River: potential to encounter contaminated groundwater from known groundwater release sites
- Los Angeles River and San Gabriel River: potential to release contaminants in the vicinity of educational facilities

Construction activities at all three USACE facilities could encounter ADL or contaminants associated with railroad corridors, past agricultural activities, and existing pipelines. LBP, ACM, and PCBs would likely be encountered during demolition of industrial and commercial structures present in the Affected Area for hazards and hazmat at the Los Angeles River and Rio Hondo channel. Finally, the existing abandoned freight bridge over the San Gabriel River will be demolished. The bridge may contain ACM and LBP, which could be released during bridge demolition.

Consistent with construction the LPA in other locations, the following project measures and mitigation measures will be implemented for construction at the USACE facilities: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater). In addition, in the unlikely event that an unidentified abandoned oil and gas well is identified within the Affected Area for hazards and hazmat at the USACE facility, HAZ PM-8 (Oil Well Abandonment) will be implemented. With implementation of these measures, construction within the USACE facilities will not result in adverse effects related to environmental concern sites, landfill gases, groundwater contamination, LBP, ADL, asbestos/ACM, railroad, pipelines, agriculture, PCBs, and educational facilities.

Project Measures and Mitigation Measures

Project Measures

HAZ PM-4 Handling, Storage, and Transport of Hazardous Materials or Wastes

Prior to the start of construction, the contractor will provide Metro with an industrial waste management plan and/or a waste and hazardous materials management plan, such as a plan defined in Title 19 CCR or a Spill Prevention, Control, and Countermeasure Plan. These plans will be completed to Metro contractor specifications and will identify the responsible parties and outline

procedures for hazardous waste and hazardous materials handling, storage, and transport during construction. The plan will specify how the contractor will handle and manage wastes on-site, including the following:

- Prescribe BMPs to follow to prevent hazardous material releases and cleanup of any hazardous material releases that may occur
- Comply with the SWRCB Construction CWA Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction (SWRCB 2017)
- During construction, the contractor will comply with applicable federal and state regulations that consider hazardous material handling and storage practices, such as the Resource Conservation and Recovery Act, the Comprehensive Environmental Response and Compensation Liability Act, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act.

HAZ PM-5 Property Assessment – Phase I and II ESAs

Consistent with Metro's standard practice, prior to the start of construction, the contractor must provide Phase I ESAs in accordance with standard ASTM methodologies to assess the land use history of each parcel that will be acquired/utilized for the LPA, including the railroad corridor properties. The determination of parcels that require a Phase II ESA (i.e., soil, groundwater, soil vapor subsurface investigations) will be evaluated after the Phase I ESAs have been completed and will be based on the results of the Phase I ESAs. Specifically, if the Phase I ESAs identify suspected contamination in the soil, soil vapor, or groundwater, a Phase II ESA will be conducted to determine whether the suspect contamination resulted in soil, groundwater, or soil vapor contamination exceeding regulatory action levels.

If the Phase II ESA concludes that the site is contaminated, remediation or corrective action (e.g., removal of contamination, *in-situ* treatment, capping, venting, monitoring, alarm, and system activation measures) would be conducted prior to or during construction under the oversight of federal, state, and/or local agencies (e.g., USEPA, DTSC, RWQCB, Los Angeles County) and in full compliance with current and applicable federal and state laws and regulations. Additionally, Voluntary Cleanup Agreements may be used for parcels where remediation or long-term monitoring is necessary.

HAZ PM-6 Demolition Plans

The contractor will prepare demolition plans for the safe dismantling and removal of building components and debris prior to construction. The demolition plans will be completed to Metro's contractor specifications and will include the following:

- LBP testing and abatement procedures
- Proper procedures for handling and disposal of lead and chromium in roadway paint striping

- ACM testing and abatement procedures
- PCB testing and abatement procedures

The demolition plans will be submitted to Metro for verification that appropriate demolition practices will be followed, consistent with federal and state handling and disposal regulations regarding ACM, lead, LBP, and PCBs.

HAZ PM-7 Disposal of Groundwater

If disposal of contaminated groundwater (decontamination water, purge water, dewatering, or underground structures [groundwater leakage into the final structure]) is generated during construction, the LARWQCB will be consulted and the Project will comply with permits as required by the LARWQCB. The LARWQCB may require that an individual NPDES permit and/or waste discharge requirements be obtained for dewatering activities. Additionally, the following agencies will be contacted as needed:

- City of Los Angeles Sanitation will be notified if contaminated groundwater will be discharged to the sewer system.
- City of Vernon Health and Environmental Control Department will be contacted if contaminated groundwater will be discharged to the stormwater system.
- County of Los Angeles Department of Public Health will be contacted if contaminated groundwater is encountered during dewatering within the boundaries of the following cities: Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia, and the unincorporated community of Florence-Firestone.

The groundwater discharge and disposal requirements vary by agency, location, concentration, and contaminant of concern and, therefore, are developed in consultation with the appropriate agency and the project proponent.

HAZ PM-8 Oil Well Abandonment

The Well Safety Devices for Critical Wells (CCR, Title 14, Section 1724.3) regulation governs safety devices required on "critical wells" located within 100 feet of an operating railway. Therefore, prior to demolition, grading, or construction within 400 feet of operating or abandoned oil wells, the contractor must perform the following steps in the Affected Area for hazards and hazmat (within 200 feet of the LPA footprint) to reduce risk:

- Notify CalGEM about planned subsurface work within 200 feet of the LPA footprint and use its Construction Site Review Plan Program to locate wells (CalGEM 2020).
- "Critical" oil wells within 100 feet of the construction footprint will be evaluated by CalGEM to determine if they require additional safety features. The definition of a critical oil well is set forth in California Code of Regulations, Title 14, section 1720(a).
- The Department of Conservation's Geologic Energy Management Division (CalGEM, formerly DOGGR) Construction Site Well Review Program will be utilized per Section 3208.1 of the Public Resources Code

and the local permitting agencies will also be consulted to evaluate whether any specific preconstruction requirements will apply to oil wells located within 100 feet of the construction footprint.

- Oil well abandonment must proceed in accordance with Sections 3228, 3229, 3230, and 3232 of the Public Resources Code. These requirements include written notification to CalGEM, protection of adjacent property, and before commencing any work to abandon any well, obtaining approval by CalGEM.
- Abandonment work, including sealing off oil and gas bearing units, pressure grouting, etc., must be performed by a state-licensed contractor under the regulatory oversight and approval of CalGEM.

Proper abandonment of oil wells must be conducted by the contractor prior to conducting subsurface activities that disturb soil, and documentation of the completed work will be provided to Metro. Documented wells in the Affected Area for hazards and hazmat and undocumented oil and gas wells encountered during construction will also be subject to this project measure.

See Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells) for undocumented well procedures.

HAZ PM-9 Contaminated Soil, Soil Vapor, and Groundwater

Prior to the start of construction, the contractor must retain a qualified environmental consultant to prepare a Soil Management Plan; Soil Reuse Management Plan; Groundwater Management Plan; Landfill Gas Accumulation Management Plan; and/or Soil, Soil Vapor, and Groundwater Management Plan. These plans must be completed to Metro's contractor specifications and submitted to Metro prior to any ground-disturbing activities for the LPA. Alternatively, Soil, Soil Vapor, and/or Groundwater Plans may be prepared separately or together as a Soil, Soil Vapor, and Groundwater Management Plan.

The Soil and Soil Vapor Plans (and/or Landfill Gas Accumulation Management Plan) must establish provisions per Metro's contractor specifications for the disturbance of contaminated materials (known and undocumented). Proper management and disposition of contaminated soils gases will be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

The Soil Reuse Management Plan must establish provisions per Metro's contractor specifications for the reuse of contaminated known or undocumented soils. Proper management and disposition of contaminated soils will be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

The Groundwater Management Plan, which must be prepared prior to construction activities, will establish provisions per Metro's contractor specifications for encountering and managing contaminated groundwater (known and undocumented). Proper disposal of contaminated groundwater will

be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

Where open or closed regulatory release cases are already managed by a regulatory agency (USEPA, DTSC, RWQCB, etc.) and Metro plans to alter the use of the site and/or disturb contaminated soil and/or groundwater on-site, Metro will notify the regulatory agency of the planned land use changes prior to ground-disturbing activities at the location of the open or closed regulatory release site. The regulatory agency will determine the level of investigation and/or remediation (performance standards) necessary on a case-by-case basis. A closure or no further action determination letter from the regulatory agency will be obtained when investigation and/or remediation is complete.

Mitigation Measures

Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells) is recommended for all sections of the Affected Area for hazards and hazmat to reduce potential adverse construction effects to no adverse effects:

HAZ-1 Unidentified Oil and Gas Wells

If an unknown oil and gas well is encountered during construction, the contractor will notify Metro, the California Division of Occupational Safety and Health, and the California Department of Conservation Geologic Energy Management Division (CalGEM) and proceed in accordance with state requirements. The requirements include written notification to CalGEM, protection of adjacent property, and before commencing any work to abandon any well, obtaining approval by CalGEM. Abandonment work, including sealing off oil and gas bearing units, pressure grouting, etc., must be performed by a state-licensed contractor under the regulatory oversight and approval of CalGEM.

Where the Locally Preferred Alternative cannot be adjusted to avoid unidentified abandoned wells, the California Department of Conservation (Department of Oil, Gas, and Geothermal Resources) and a re-abandonment specialty contractor will be contacted to determine the appropriate method of re-abandoning the well. Oil well abandonment must proceed in accordance with California Laws for Conservation of Petroleum and Gas (1997), Division 3. Oil and Gas, Chapter 1. Oil and Gas Conservation, Article 4, Sections 3228, 3229, 3230, and 3232.

California Environmental Quality Act Determination – Construction

The hazards and hazardous materials CEQA determinations presented in the following sections are based on the existing conditions presented in Section 4.10.2 of the Hazards and Hazardous Materials Section and the environmental impacts analysis, project measures, and mitigation measure presented above.

No Project Alternative

Under the No Project Alternative, no changes would occur within the Affected Area for hazards and hazmat and no direct impacts would result. However, remediation of existing contaminated sites that could take place in conjunction with construction of the Project

would also not occur. Therefore, the No Project Alternative would not result in any of the potential long-term benefits of the Project.

Threshold HAZ-CON-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Locally Preferred Alternative

Construction contractors may use hazardous materials such as fuels, paints and coatings, solvents, and welding materials during construction. Upset and accident involving hazardous materials could expose workers and the nearby public to health risks and could contaminate the environment. However, construction contractors will be required to implement the federal and state handling and disposal regulations described in Section 4.10.1.1 of the Hazards and Hazardous Materials Section, which will reduce the risk of exposure of the public and the environment. Additionally, Project Measure HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes) will be implemented during construction, which will minimize the risk of exposure to the public and the environment. With implementation of this project measure, hazardous materials will be transported, used, and disposed of appropriately during construction so that hazards to the public or environment will be less than significant. Refer to Threshold HAZ-CON-2 for a discussion of hazardous and hazmat impacts associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials.[12]

Design Option: Close 186th Street

Potential impacts associated with construction of the design option are consistent with those identified for construction of the LPA without the design option. Similar to the LPA, construction contractors would be required to implement federal and state handling and disposal regulations, which would reduce the risk of exposure of the public and the environment from the routine transport, use, or disposal of hazardous materials. Compliance with existing federal regulations pertaining to hazardous material handling, transport, and disposal (as discussed in Section 4.10.1.1 of the Hazards and Hazardous Materials Section) and implementation of Project Measure HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes) would minimize the risk of exposure of the public and the environment. With implementation of this project measure, hazardous materials would be transported, used, and disposed of appropriately during construction so that hazards to the public or environment would be less than significant.

Maintenance and Storage Facility

Potential impacts associated with construction of the MSF are consistent with those identified for construction of the LPA. Similar to the LPA, construction contractors will be required to implement federal and state handling and disposal regulations, which will reduce the risk of exposure of the public and the environment from the routine transport, use, or disposal of hazardous materials. Compliance with existing federal regulations pertaining to hazardous material handling, transport, and disposal (as discussed in Section 4.10.1.1 of the

[12] The impact discussion for Threshold HAZ-CON-1 in the Draft EIS/EIR included information regarding reasonably foreseeable upset and accident conditions involving the release of hazmat into the environment, which was also included in the impact discussion for Threshold HAZ-CON-2. For this Final EIS/EIR, the impact discussion for Threshold HAZ-CON-1 has been revised to focus on whether the LPA would cause significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, consistent with the threshold of significance. The impacts associated with reasonably foreseeable upsets and accidental releases of hazardous material are discussed under Threshold HAZ-CON-2.

Hazards and Hazardous Materials Section) and implementation of Project Measure HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes) will minimize the risk of exposure of the public and the environment. With implementation of this project measure, hazardous materials will be transported, used, and disposed of appropriately during construction so that hazards to the public or environment will be less than significant.

Threshold HAZ-CON-2: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Locally Preferred Alternative

General Hazardous Materials Conditions: During construction of the LPA, demolition, grading, or other construction activities could require disturbance, excavation, removal, and/or transport of the following hazardous materials, which could result in reasonably foreseeable upset and accident:

- Known, potential, and historical concern sites (contaminated soil and/or groundwater)
- Landfills
- Lead-based paint and yellow paint striping
- Asbestos-containing materials
- Polychlorinated biphenyls
- Common railroad corridor contaminants
- Aerially deposited lead in soil
- Pesticides from agricultural uses
- Hazardous material (liquid) and natural gas pipeline utility corridor contaminants
- Oil and gas wells

A summary of where and how hazardous materials may be encountered during construction of the LPA is provided below. Additional information on each of these hazardous materials and risks for the LPA are discussed in Section 4.10.2.3 of the Hazards and Hazardous Materials Section and in prior sections in Section 4.19.3.10.

Known, Potential, and Historical Concern Sites (contaminated soil and/or groundwater): Soils and groundwater in the Affected Area for hazards and hazmat may be contaminated with hazardous materials such as VOCs, petroleum hydrocarbons, pesticides and herbicides, PAHs, and heavy metals, including lead and arsenic, due to the presence of known, potential, and historical concern sites (refer to Appendix A and Appendix B of the Hazardous Materials Impact Analysis Report and Table 4.10.1 in Section 4.10.2 of the Hazards and Hazardous Materials Section). During construction of the LPA, these materials could be excavated or otherwise disturbed, resulting in a potential health risk to construction workers and nearby residents and/or the public. With implementation of project measures (summarized at the end of this section), construction impacts related to transport and disposal of contaminated soil and/or groundwater from known environmental concern sites will be less than significant and no mitigation is required.

Landfills: One former landfill (South Gate Rod and Gun Club) that poses soil vapor concerns is located in the Affected Area for hazards and hazmat (landfills). Specifically, this landfill is located at 10200 Miller Way in South Gate within a proposed construction staging area (refer to Appendix A, Sheets 25 and 26 of the Hazardous Materials Impact Analysis Report). If methane or other landfill gases are present and accumulate near construction of the LPA, a health and explosion hazard may occur during construction. With implementation of project measures (summarized at the end of this section), construction impacts related to landfill gases will be less than significant and no mitigation is required.

LBP, ADL, Asbestos/ACM, Railroad, Pipelines, Agriculture, and PCBs: LBP and yellow paint striping, ACM, and PCBs will likely be encountered during demolition of roads and structures in the Affected Area for hazards and hazmat. Additionally, soils surrounding structures containing LBP, ACM, and PCBs may be contaminated. Soil and/or groundwater in the Affected Area for hazards and hazmat may also be contaminated due to past railroad and agricultural use. The Affected Area for hazards and hazmat includes hazardous material pipelines containing petroleum hydrocarbons and natural gas (refer to Table 4.1 of the Hazardous Materials Impact Analysis Report).

The disturbance of soils and/or groundwater contaminated with LBP, ADL, asbestos/ACM, PCBs, and contaminants associated with railroad or agricultural use could create a health risk to construction workers and nearby residents and/or the public. With implementation of the project measures (summarized at the end of this section), construction impacts related to transport and disposal of contaminated soil, groundwater, or structures will be less than significant and no mitigation is required.

Additionally, the relocation or disturbance of existing pipelines could create a health risk to construction workers and nearby residents or the public through the disturbance of contaminated soil and/or groundwater. As required by California law, Government Code 4216, Underground Service Alert (a utility marking service) will be notified prior to the commencement of any subsurface excavation. With compliance with this existing regulation, pipeline risks will be less than significant, and no mitigation is required.

Oil and Gas Wells: One abandoned oil well is located within the Affected Area for hazards and hazmat along the LPA; refer to Figure 4-1 of the Hazardous Materials Impact Analysis Report. Additionally, unidentified wells may be present. If these wells require re-abandonment per CalGEM standards, hazardous materials may be encountered during soil disturbance associated with the re-abandonment, resulting in a health risk to construction workers and nearby residents or the public. Impacts related to the potential presence of unknown wells are potentially significant, and Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells) is required to reduce impacts to less than significant.

Summary: During construction, contaminated soils and/or groundwater may be disturbed and may require handling on-site or may be processed and moved off-site for disposal or recycling. These activities could result in accident or upset of hazardous materials, which could create a health risk to construction workers and nearby residents and/or the public, as discussed in Section 4.10.2.3 of the Hazards and Hazardous Materials Section.

Contractors will be required to implement federal and state handling and disposal regulations, which will reduce the risk of exposure of the public and the environment during transport and disposal of hazardous contaminants encountered during construction. The contractor will comply with existing federal regulations pertaining to hazardous material

handling, transport, and disposal, as discussed in Section 4.10.1.1 of the Hazards and Hazardous Materials Section, and as required by the following project measures and mitigation measures: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), and Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells). With implementation of these project measures and mitigation measures, hazardous materials will be managed appropriately and impacts related to the accident or upset of hazardous materials during construction of the LPA will be less than significant after implementation of mitigation.

Mitigation Measures: Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells)

Impacts Remaining After Mitigation: Less than significant impacts.

Design Option: Close 186th Street

Potential impacts during construction of the LPA with the design option would be similar to construction of the LPA without the design option.

The following project measures and mitigation measures are applicable to the design option: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment – Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), and Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells). With implementation of these project measures and mitigation measures, hazardous materials would be managed appropriately; property assessments (Phase I and II ESAs) would be completed prior to construction; contractors would be prepared to encounter hazardous building materials; and contractors would be prepared to encounter known or undocumented hazardous materials. Therefore, impacts of construction of the design option related to accident or upset of hazardous waste would be less than significant after implementation of mitigation.

Mitigation Measures: Mitigation Measures HAZ-1 (Unidentified Oil and Gas Wells)

Impacts Remaining After Mitigation: Less than significant impacts.

Maintenance and Storage Facility

Potential impacts during construction of the MSF will be similar to construction of the LPA, discussed above.

The following project measures and mitigation measures will minimize the risk of exposure of the public and the environment to hazardous materials used during construction of the MSF: HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater), and Mitigation Measure HAZ-1 (Unidentified Oil and Gas Wells). With implementation of these project measures and mitigation measures, hazardous materials will be managed appropriately; property assessments (Phase I and II ESAs) will be completed prior to construction; contractors will be prepared to encounter hazardous building materials; and contractors will be prepared to

encounter known or undocumented hazardous materials. Therefore, impacts of construction of the MSF related to the accident or upset of hazardous materials will be less than significant after implementation of mitigation.

Mitigation Measures: Mitigation Measures HAZ-1 (Unidentified Oil and Gas Wells)

Impacts Remaining After Mitigation: Less than significant impacts.

Threshold HAZ-CON-3: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Locally Preferred Alternative

There are 45 educational facilities within the Affected Area for hazards and hazmat (educational facilities) for the LPA. Construction of the LPA will not emit acutely hazardous materials or require handling of acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school; therefore, impacts will be less than significant.

Design Option: Close 186th Street

One educational facility is located within the Affected Area for hazards and hazmat (educational facilities) in the vicinity of the design option; this educational facility is also in the Affected Area for hazards and hazmat associated with the LPA in this location. Consistent with construction of the LPA without the design option, construction of the LPA with the design option would not emit acutely hazardous emissions or require handling of acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school during construction. Therefore, impacts would be less than significant.

Maintenance and Storage Facility

Two educational facilities are located within the Affected Area for hazards and hazmat (educational facilities) at the MSF site. Construction of the MSF will not emit acutely hazardous materials or require handling of acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school during construction. Therefore, impacts will be less than significant.

Threshold HAZ-CON-4: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Locally Preferred Alternative

The LPA is located near three Government Code Section 65962.5 (Cortese) hazardous material sites (the Jervis site, the Cooper Drum site, and the Southern Avenue Industrial Area site), as described in Section 4.10.2.2 of the Hazards and Hazardous Materials Section. However, there is only one location where any portion of the LPA's footprint will be located on a Cortese site: TPSS Site #10 is present on the Jervis site. Additionally, one groundwater well at the Jervis site is located immediately east of TPSS Site #10 near Firestone Boulevard.

Potential impacts from construction of the LPA with regard to Cortese and environmental concern sites include the potential exposure of construction workers or members of the public to chemical compounds in soils, soil gases, and groundwater, and exposure of workers, the public, and the environment to airborne chemical compounds migrating from

the demolition, grading, or construction areas. Soil disturbance such as trenching, digging, and/or grading in contaminated areas could result in exposure of construction workers and the public or the environment to hazardous materials.

Construction activities could also encounter contaminants or interfere with the ongoing remediation efforts at some facilities. For example, a groundwater monitoring well may need to be relocated prior to construction, which will interfere with ongoing remediation efforts at Cortese and environmental concern site. Unless construction activities are properly coordinated with those site remediation activities, there could be a temporary increased risk of damage to or interference with ongoing site remediation activities such as soil containment areas, or potential negative influences on the control of contaminated groundwater due to construction dewatering activities.

Construction activities could also result in the discovery of unanticipated contamination at known release sites, potential environmental concern sites, or historical environmental concern sites (as identified in Section 4.10.2.1 of the Hazards and Hazardous Materials Section).

Construction contractors will be required to implement federal and state handling and disposal regulations, which would reduce the risk of exposure of the public and the environment to hazardous materials during transport and disposal of hazardous contaminants encountered during construction. Compliance with existing federal regulations pertaining to hazardous material handling, transport, and disposal (as discussed in Section 4.10.1.1 of the Hazards and Hazardous Materials Section) and implementation of Project Measures HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment-Phase I and II ESAs), HAZ PM-7 (Disposal of Groundwater), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) will reduce the risk of exposure of the public and the environment to hazardous materials used during construction. With implementation of these measures, the risk of exposure of the public or the environment to hazardous materials encountered during construction of the LPA will be reduced because hazardous materials will be managed appropriately; property assessments (Phase I and II ESAs) will be completed prior to construction; contaminated groundwater will be managed appropriately; and contractors will be prepared to encounter known or undocumented hazardous materials. Impacts will be less than significant.

Design Option and Maintenance and Storage Facility

No Cortese hazardous materials sites compiled pursuant to Government Code Section 65962.5 are located in proximity to the design option or the MSF. Therefore, no impacts would occur related to significant hazard to the public or the environment from hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, construction activities could result in the discovery of unanticipated contamination at historical environmental concern sites. Therefore, as described above, construction contractors would be required to implement federal and state handling and disposal regulations in addition to the following project measures:

HAZ PM-4 Handling, Storage, and Transport of Hazardous Materials or Wastes
HAZ PM-5 Property Assessment – Phase I and II ESAs
HAZ PM-7 Disposal of Groundwater
HAZ PM-9 Contaminated Soil, Soil Vapor, and Groundwater

With implementation of these measures, the risk of exposure to the public or the environment from hazardous materials encountered during construction of the design option and MSF would be less than significant.

Threshold HAZ-CON-5: For a Project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

No airports are located within 2 miles of the LPA, design option, or MSF site; therefore, no impacts related to safety hazards at airports will occur from construction of the LPA.

Threshold HAZ-CON-6: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The CEQA determinations for this potential impact are discussed in Section 7.4 of the *West Santa Ana Branch Transit Corridor Project Final Safety and Security Impact Analysis Report* (Metro 2024c) and Section 4.19.3.18 of this Final EIS/EIR.

Threshold HAZ-CON-7: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

No wildlands are located in the vicinity of the LPA, design option, and MSF; therefore, no impact would occur from construction of the LPA.

4.19.3.11 Water Resources

This section has been updated since the Draft EIS/EIR to include updates to regulatory requirements, including for the SWRCB CGP (Order WQ 2022-0057-DWQ). Specific project measures and descriptions were added to clarify what measures will be implemented for project compliance and impact minimization strategies. The incorporation of these minimization strategies will address impacts previously identified in the Draft EIS/EIR. Discussion of compliance with LACFCD permits and the Section 408 permit for construction within flood-control facilities is also included. As discussed in Section 4.9 Geotechnical, Subsurface, and Seismic, on-going coordination will be required with USACE to obtain agency approval for construction impacts (both temporary and permanent). Environmental impacts related to the LPA are similar to the impacts (alignment, disturbed area, and impervious surface) associated with Alternative 3 in the Draft EIS/EIR. No new significant adverse impacts or substantially more severe impacts have been identified. The impact conclusions remain the same as in the Draft EIS/EIR, including with respect to Alternative 3.

Locally Preferred Alternative, Design Option, and Maintenance and Storage Facility Construction Impacts

This section describes the temporary construction impacts of the LPA, the design option, and MSF on water resources. Construction will require the activities summarized in Section 4.19.2. Compliance with the design features described under the heading "Project Design Features During Construction" will be required during construction of the Project, the design option (if selected), and/or the MSF. As a result, adverse impacts on hydrology and water bodies, water quality, floodplains, and groundwater will be minimized.

Project Design Features During Construction

Construction General NPDES Permit Compliance

The SWRCB CGP (Order WQ 2022-0057-DWQ) requires that the contractor identify pollutant sources that could affect water quality, and identify, implement, and maintain BMPs to reduce pollutants and nonstormwater discharges in construction site runoff. The contractor must also develop and implement a SWPPP that is approved by the SWRCB prior to construction, and document compliance with the CGP throughout construction.

The SWPPP evaluates the risk level to downstream water bodies and identifies stormwater BMPs that minimize potential short-term increases in discharges of nonstormwater pollutants. Examples of these BMPs include the following:

- "Good housekeeping BMPs" such as waste management, stockpile management, trash enclosures, stabilized construction entrances, and concrete washouts that will minimize exposure of construction materials, sediments, trash and debris, and potential contaminants to stormwater
- Site perimeter controls such as silt fences and fiber rolls that will minimize discharge of contaminants in stormwater by sheet flow
- Erosion control BMPs to reduce erosion of exposed soils, including stockpile covers, soil stabilization (e.g., temporary hydraulic mulch), watering for dust control, and perimeter silt fences
- Sediment control BMPs that will minimize sediment discharge, such as check dams in drainage ditches, silt fences, fiber rolls, inlet barriers, and sediment basins
- Details on construction techniques required to minimize pollutant and other nonstormwater discharges directly to surface waters, such as covered materials storage and cofferdams for in-stream construction
- Maintenance BMPs such as a regular maintenance schedule for equipment and maintenance of construction site BMPs, such as daily checks for vehicle condition, protected areas for fueling and maintenance activities, and drip pans under idle equipment

The SWPPP also documents the risk level to downstream water bodies based on the CGP's defined risk-level determination method. The CGP establishes three risk levels that are based on site erosion and receiving water risk factors, as described in Section 3 of the *West Santa Ana Branch Transit Corridor Project Final Water Resources Impact Analysis Report* (Metro 2024d). Risk Level 1 projects are subject to minimum BMP and visual monitoring requirements; Risk Level 2 projects are subject to Numeric Action Levels and some additional monitoring requirements; and Risk Level 3 projects are subject to Numeric Action Levels and more rigorous monitoring requirements, such as receiving water monitoring and, in some cases, bioassessment.

A preliminary analysis indicates that most of the Project will fall under Risk Level 2, meaning there is a moderate risk to downstream water bodies of increased sediment and construction-related discharge of contaminants. Therefore, additional construction site BMPs and water quality monitoring are required. The Project Risk Level is based on the sediment erosion risk and the potential for impacts on downstream receiving water bodies. It is evaluated using procedures defined by the SWRCB. The Project has a high sediment erosion risk factor due to the existing soils on the project site and the construction duration. However, the Project

has low receiving water body risk because downstream water bodies are not designated by the Regional Water Quality Control Board to have the beneficial uses "COLD," "SPAWN," and "MIGRATORY." Combined, the total Risk Level for this Project is considered moderate, Level 2. This analysis incorporates assumptions about the construction period and is therefore preliminary. The Risk Level must be updated and submitted to SWRCB for approval at the time of construction. Risk level calculations are included in Appendix D of the Water Resources Impact Analysis Report. The contractor will implement these Risk Level 2 measures throughout the Project's disturbance area and where construction activities are conducted within or immediately adjacent to sensitive environmental areas (e.g., wetlands, waters of the State/U.S., and biological habitats).

Implementation of the construction SWPPP in compliance with the CGP will avoid or minimize discharge of nonstormwater contaminants from the project site. Further, construction of the Project will comply with construction-related requirements specified in permits obtained from applicable resource agencies (e.g., CDFW and USACE). Compliance with the CGP and other resource agency permits, as well as implementation of the design features will avoid and minimize construction-related impacts on hydrology and water quality.

Construction Dewatering

Groundwater and accumulated precipitation may be encountered during construction in the river, excavation activities, and construction of bridges, structures, and tunnels. Removal of groundwater or accumulated precipitation may trigger a Construction Dewatering Permit or other WDRs, as referenced in Section 4.11.3.1 of the Water Resources Section. Dewatering impacts include the potential of increasing the exposure of groundwater to construction-related contaminants or dewatering previously contaminated groundwater. Where dewatering is required, construction activities will be conducted in accordance with the appropriate permit(s) and the Project will include preparation of a BMP or Control Strategy Plan to identify site-specific plans and procedures to be implemented to prevent the generation and potential release of pollutants.

Locally Preferred Alternative

Hydrology and Surface Water Bodies/Water Quality

The LPA will require construction activities that could adversely affect hydrology and surface water quality, including the following:

- At-grade facilities, including guideway construction, utility relocations, rail facilities within the railroad rights-of-way, freeway crossings, city street widening and reconstruction, station facilities (stations and parking facilities), MSF, rail service facilities (TPSS facilities), radio antennae, site preparation and demolition, and construction access
- Aerial facilities, including guideway construction, utility relocations, river crossings, freeway crossings, pedestrian bridges, retained fill guideways, aerial station facilities, site preparation and demolition, and construction access

These construction activities could degrade water quality by increasing the risk of discharge of contaminants to surface water. This is especially true where direct discharge may occur, such as at the Los Angeles River, Rio Hondo channel, and San Gabriel River crossings. Construction will involve ground disturbance (e.g., excavation, stockpiling, and grading) that will expose bare soils to stormwater and could lead to erosion and sedimentation.

Construction materials in staging areas could also be exposed to stormwater and contaminants could be discharged in runoff from the project sites. Other construction impacts on hydrology and surface water quality could include the following:

- Temporary changes in grades and drainage patterns
- Potential spills of construction materials or equipment maintenance materials
- Temporary dewatering if groundwater is encountered or if construction occurs during the wet-weather season and dewatering of excavations is required

The Los Angeles River crossing is especially susceptible due to the number and size of piers that will be constructed in the channel. The proximity of flowing water to active construction could provide a direct path for construction-related contaminants to reach surface water. Downstream erosion impacts are minimized because these river channels are lined with concrete.

Impacts on downstream water bodies can be generally quantified by the total disturbance area of the LPA, including both permanent and temporary disturbance areas, because construction activities that disturb soils throughout the construction site could also result in nonstormwater discharges in runoff from the construction site. Temporary disturbance areas include any areas of construction activities, including construction staging areas and excavation extents for column foundations. The total disturbed area is presented in Table 4.11.3 in the Water Resources Section. The total disturbed soil area for the LPA is 208.2 acres, with construction extending through the Los Angeles River and San Gabriel River watersheds.

To address these temporary impacts, implementation of the LPA will include the design features discussed above under the heading "Project Design Features During Construction" and implementation of a SWPPP that complies with the CGP. Under NEPA, the LPA will not result in adverse effects related to hydrology and surface water bodies during construction.

Floodplains

Implementation of the LPA will require construction activities that could adversely affect floodplains, including up to three river crossings that will be constructed within existing floodplain extents. Construction within the river may require temporary coffer dams, which may impact the ability of the flood-control channel to contain flood flows or increase non-stormwater discharges. Construction of aerial structures over the Los Angeles River, the Rio Hondo channel, and the San Gabriel River will require new bridge piers within the channels. Earthwork and demolition will be required for new concrete bridge piers with substantial construction footprint below the ordinary high-water mark. Construction access will also require construction equipment, materials, and storage inside the channels. Therefore, construction could result in impacts within the ordinary high-water mark, banks, or levees under USACE jurisdiction. The placement of the columns that will support the aerial LRT structure is flexible, and this flexibility in locations will allow Metro to avoid potential direct impacts on the riverbed and banks.

Where construction occurs in the Los Angeles River, the Rio Hondo channel, or the San Gabriel River, activities will comply with all applicable federal and local floodplain regulations, including applicable NFIP regulations described in Section 4.11.1 of the Water Resources Section. LACFCD permits will require the LPA to include measures that maintain drainage patterns at all times during construction. All work involving LACFCD's storm drains and

flood-control channels will occur outside the period of October 15 through April 15 (storm season). Construction of the LPA in the Los Angeles River, the Rio Hondo channel, and the San Gabriel River will also require review and approval by the USACE through a Section 408 permit. As discussed in Section 4.9 Geotechnical, Subsurface, and Seismic, on-going coordination will be required with USACE to obtain agency approval for construction impacts (both temporary and permanent). Construction will conform to the USACE full channel construction limitations. For example, from April 15 through May 31 and September 1 through October 15, 33.3 percent of the original channel design capacity will be preserved. From June 1 through August 31, 5 percent of the original channel design capacity is required. Furthermore, implementation of the design features described above under the heading "Project Design Features During Construction" will avoid and minimize construction-related flooding impacts. Under NEPA, the LPA will not result in adverse effects related to floodplains during construction.

Groundwater

Implementation of the LPA will require construction activities that could adversely affect groundwater resources, including the following:

- At-grade facilities, including guideway construction, utility relocations, rail facilities within the railroad rights-of-way, freeway crossings, city street widening and reconstruction, station facilities (stations and parking facilities), MSF, rail service facilities (TPSS facilities), radio antennae, site preparation and demolition, and construction access
- Aerial facilities, including guideway construction, utility relocations, river crossings, freeway crossings, pedestrian bridges, retained fill guideways, aerial station facilities, site preparation and demolition, and construction access

These construction activities could adversely affect groundwater by 1) dewatering that may be needed during construction, especially where columns are constructed within the Los Angeles River, the Rio Hondo channel, and the San Gabriel River, which could result in a drawdown of the local groundwater table, or 2) by exposing groundwater to contamination during construction. Based on well data collected by the LACDPW, historical groundwater depths within the Affected Area for water resources are estimated to be 75 to 100 feet near the river crossings and more than 100 feet in the surrounding areas away from the rivers (LACDPW 2019). Groundwater levels can change seasonally; therefore, preconstruction evaluations will be completed prior to construction to determine existing conditions that could affect construction methods, including evaluation of groundwater levels. Dewatering may be needed in excavation areas required for foundation construction, utility installation, and demolition. Dewatering activities can impact groundwater by temporarily reducing the local groundwater elevation. Groundwater removed from the site as a result of dewatering could come in contact with construction-related contaminated groundwater (e.g., fuels, solvents, oils, grease). Spills from construction materials could also inadvertently contaminate groundwater.

Dewatering of the construction site will be subject to the requirements of the Construction Dewatering Permit (Order No. R4-2018-0125) and other applicable permits (discussed in Section 4.11.3.1 of the Water Resources Section) and, therefore, will not cause construction-related impacts on groundwater quality. Furthermore, implementation of the design features described above under the heading "Project Design Features During Construction,"

including good housekeeping and spill prevention BMPs, will avoid and minimize construction-related impacts on groundwater. Under NEPA, the LPA will not result in adverse effects related to groundwater during construction. Evaluation of groundwater contamination is presented in the Hazardous Materials Impact Analysis Report.

Design Option: Close 186th Street

Hydrology and Surface Water Bodies/Water Quality

The LPA with the design option would require construction of facilities similar to those of the LPA without the design option in scope, magnitude, and duration at the design option location. Therefore, construction impacts for the LPA with the design option would be similar to construction impacts for the LPA without the design option.

To address these temporary impacts, implementation of the LPA with the design option would include the design features discussed above under the heading "Project Design Features During Construction" and a SWPPP that complies with the CGP. Therefore, potential impacts would be minimized and no adverse effects during construction would occur.

Floodplains

The design option is located outside of the 100-year flood zone; therefore, there would be no floodplain impacts.

Groundwater

The LPA with the design option would require construction of similar rail facilities within the groundwater basins as those constructed for the LPA without the design option at the design option location. Therefore, construction impacts on groundwater associated with the LPA with the design option would be similar to construction impacts on groundwater associated with the LPA without the design option.

To address these temporary impacts, implementation of the LPA with the design option would include implementation of the design features discussed above under the heading "Project Design Features During Construction," implementation of a SWPPP in compliance with the CGP, and obtaining approvals for dewatering activities. Therefore, potential impacts would be minimized and no adverse effects during construction would occur.

Maintenance and Storage Facility

Hydrology and Surface Water Bodies/Water Quality

Implementation of the MSF will require construction activities similar to those of the LPA at this location. The total disturbed area for the MSF site is presented in Table 4.11.4 in the Water Resources Section. Construction of the MSF site is expected to result in 22.0 acres of disturbed area. Therefore, construction impacts at the MSF site will be similar to construction impacts at the LPA and limited to the construction footprint.

To address these temporary impacts, construction at the MSF site will include the design features discussed above under the heading "Project Design Features During Construction" and a SWPPP that complies with the CGP. Therefore, potential impacts will be minimized and no adverse effects during construction will occur.

Floodplains

The MSF site is located outside of the 100-year flood zone; therefore, there will be no floodplain impacts.

Groundwater

The MSF site will require similar construction activities as those required for the LPA; however, the MSF site is outside of groundwater recharge areas. Therefore, no adverse effects to these groundwater recharge facilities will occur as a result of the MSF site implementation.

U.S. Army Corps of Engineers Facilities

Hydrology and Surface Water Bodies/Water Quality

Construction activities associated with the LPA could adversely affect hydrology and surface water bodies and quality within the USACE right-of-way. LPA construction activities will generate dredge and fill materials in the channels of the Los Angeles River, the Rio Hondo channel, and San Gabriel River. Dredge materials will include excavated materials resulting from construction of in-channel bridge piers and columns. Fill materials will include temporary construction equipment and materials brought into the channel, as well as permanent structures constructed as part of the LPA, such as in-channel bridge piers and columns. Construction will require temporary diversion structures or cofferdams to keep the construction zone dry, which could result in some changes to the water surface elevation in the channel.

At this phase of the LPA design process, impacts from the discharge of dredged and fill materials are quantified by the footprint of the proposed facilities within the Los Angeles River, Rio Hondo, and San Gabriel River channels. Table 4.11.5 in Section 4.11.3.6 of the Water Resources Section summarizes dredge and fill materials for the LPA measured by the footprint of proposed facilities within the USACE jurisdictional limits.

The potential water quality impacts associated with LPA construction activities could degrade water quality by increasing the risk of discharge of contaminants to surface water. Construction will involve ground disturbance (e.g., excavation, stockpiling, and grading) that will expose bare soils to stormwater and could lead to erosion and sedimentation. Construction materials in staging areas will also be exposed to stormwater, and contaminants may be discharged in runoff from the project sites.

Construction activities will comply with all applicable federal and local floodplain regulations, including the applicable NFIP regulations described in Section 4.11.1.1 of the Water Resources Section. All work involving LACFCD's storm drains and flood-control channels will occur outside the period of October 15 through April 15 (storm season). Construction and operation of the LPA at the Los Angeles River, the Rio Hondo channel, or the San Gabriel River will also require review and approval by the USACE through a Section 408 permit. As discussed in Section 4.9 Geotechnical, Subsurface, and Seismic, on-going coordination will be required with USACE to obtain agency approval for construction impacts (both temporary and permanent). Construction will conform to the USACE full channel construction limitations. For example, from April 15 through May 31 and September 1 through October 15, 33.3% of the original channel design capacity must be preserved. From June 1 through August 31, 5% of the original channel design capacity is required. Because

the LPA involves the discharge of dredged and fill materials into the Los Angeles River, Rio Hondo channel, and San Gabriel River, which are classified as waters of the United States, the Project will comply with the guidelines promulgated by USEPA's Administrator in conjunction with the Secretary of the Army under the authority of CWA Section 404(b)(1) and as amended. Furthermore, implementation of the design features discussed above under the heading "Project Design Features During Construction" and a SWPPP that complies with the CGP will avoid and minimize construction-related impacts on hydrology and surface water bodies and quality within USACE facilities. Therefore, the LPA's potential impacts will be minimized and will not result in adverse effects during construction on USACE facilities.

The MSF and design option are not located within the right-of-way of any USACE facilities; therefore, there will be no impacts on USACE facilities from construction of the MSF and design option.

Floodplains

Construction will require temporary diversion structures or cofferdams to keep the construction zone dry, which could result in some changes to the water surface elevation in the channels of USACE facilities.

Construction activities will comply with all applicable federal and local floodplain regulations, including the applicable NFIP regulations described in Section 4.11.1.1 of the Water Resources Section. Because the LPA involves the discharge of dredge and fill materials into the Los Angeles River, Rio Hondo channel, and San Gabriel River, which are classified as waters of the United States, the LPA will comply with the guidelines promulgated by USEPA's Administrator in conjunction with the Secretary of the Army under the authority of CWA Section 404(b)(1) and as amended. Furthermore, implementation of the design features discussed above under the heading "Project Design Features During Construction" and a SWPPP that complies with the CGP will avoid and minimize construction-related impacts on hydrology and surface water bodies and quality within USACE facilities. Therefore, the LPA's potential impacts will be minimized and will not result in adverse effects during construction on USACE facilities.

Groundwater

Construction activities within USACE facilities could affect groundwater through dewatering that may be needed during construction where columns are constructed within the Los Angeles River, the Rio Hondo channel, and the San Gabriel River. Dewatering activities can impact groundwater by temporarily reducing the local groundwater elevation, or spills from construction materials could inadvertently contaminate groundwater.

Construction activities will comply with all applicable federal and local groundwater regulations, including the applicable NFIP regulations and WDR dewatering requirements described in Section 4.11.1.1 of the Water Resources Section. Because the LPA involves the discharge of dredged and fill materials into the Los Angeles River, Rio Hondo channel, and San Gabriel River, which are classified as waters of the United States, the LPA will comply with the guidelines promulgated by USEPA's Administrator in conjunction with the Secretary of the Army under the authority of CWA Section 404(b)(1) and as amended. Furthermore, implementation of the design features discussed above under the heading "Project Design Features During Construction" and a SWPPP that complies with the CGP will avoid and minimize construction-related impacts on hydrology and surface water bodies

and quality within USACE facilities. Therefore, the LPA's potential impacts will be minimized and will not result in adverse effects during construction on USACE facilities.

Project Measures and Mitigation Measures

With implementation of the design features described under the heading "Project Design Features During Construction," construction of the LPA, design option, and MSF will not result in adverse effects to water resources; therefore, additional project measures and mitigation measures are not required.

California Environmental Quality Act Determination

Threshold WR-CON-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on surface or groundwater quality, and mitigation would not be required.

Locally Preferred Alternative

Construction activities could temporarily impact water quality, which could violate water quality standards or degrade surface or groundwater quality. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. Dewatering of the construction site will also be subject to the requirements of the Construction Dewatering Permit (Order No. R4-2018-0125). Construction within city rights-of-way (e.g., street intersection modifications) will be subject to building/encroachment permits issued by the relevant city. Similarly, construction within LA County rights-of-way will be subject to an encroachment permit issued by the LACDPW. Compliance with these permits will be mandatory and a condition of approval of the final construction permits for construction within public rights-of-way. These permits will require the Project to exhibit compliance with the total maximum daily standards. Further, all phases of construction will be subject to the CGP. Therefore, construction of the LPA will not violate applicable water quality standards or WDRs, or otherwise substantially degrade surface or groundwater quality. Impacts will be less than significant, and no mitigation will be required.

Further, as discussed in Section 4.19.3.10, the Affected Area for water resources contains sites with known groundwater contamination. Groundwater could be contaminated with gasoline and petroleum hydrocarbons, dry-cleaning chemicals or other VOCs, or metals from previous site use or releases. Construction dewatering may be required to temporarily lower the groundwater level below the excavation depth or to an impermeable layer. Dewatering may also be required for bridge and structure footings. Dewatering facilitates installation of shoring systems improves soil stability and allows excavation in dry conditions. To dewater an area, groundwater will be pumped from wells installed around the perimeter of the excavation, limiting impacts on surrounding structures, ground, and utilities adjacent to the excavation. Contaminated groundwater could be disturbed during construction if dewatering activities occur in proximity to the groundwater release, which will result in an adverse effect. Therefore, depending on the final design of the Project, it may be necessary to monitor

groundwater or dewatering during construction. In support of final design and prior to the start of construction, known dewatering or groundwater monitoring sites will be used to analyze the quality of the groundwater to determine if hazardous materials are present. The applicable procedures will be identified based on the results of this review. If necessary, Project Measure HAZ PM-7 (Disposal of Groundwater) will be implemented as required by the local, regional, or state agencies. With implementation of this project measure, contaminated groundwater will be managed appropriately and no adverse effects related to groundwater monitoring or dewatering will occur during construction.

Design Option: Close 186th Street

Temporary impacts on water quality that could violate water quality standards or degrade surface or groundwater quality associated with construction of the LPA with the design option would be similar to temporary water quality impacts associated with construction of the LPA without the design option, as described above. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" would be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. While dewatering at the site of the design option is not expected to be needed, if it is required, dewatering of the construction site would also be subject to the requirements of the Construction Dewatering Permit. This would also occur for the LPA without the design option in this location. Therefore, the LPA with the design option would not violate applicable water quality standards or WDRs, or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant, and no mitigation would be required.

Maintenance and Storage Facility

Temporary impacts on water quality that could violate water quality standards or degrade surface or groundwater quality associated with construction of the MSF will be similar to temporary water quality impacts associated with construction of the LPA. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. While dewatering at the site of the MSF is not expected to be needed, if it is required, dewatering of the construction site will also be subject to the requirements of the Construction Dewatering Permit. Therefore, construction of the MSF will not violate applicable water quality standards or WDRs, or otherwise substantially degrade surface or groundwater quality. Impacts will be less than significant, and no mitigation will be required.

Threshold WR-CON-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on groundwater recharge, and mitigation would not be required.

Locally Preferred Alternative

Dewatering activities may impact groundwater by temporarily reducing the local groundwater elevation. Dewatering of the construction site will be subject to the

requirements of the Construction Dewatering Permit (Order No. R4-2018-0125) and other applicable permits and, therefore, will not cause construction-related impacts on groundwater quality. Furthermore, implementation of the design features described above under the heading "Project Design Features During Construction" includes a SWPPP that complies with the CGP. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Temporary impacts on groundwater supplies or recharge associated with construction of the LPA with the design option would be similar to temporary groundwater impacts associated with construction of the LPA without the design option. While dewatering at the site of the design option is not expected to be needed, if required, dewatering would be subject to the requirements of the Construction Dewatering Permit and other applicable permits and, therefore, would not cause construction-related impacts on groundwater quality. This would also occur for the LPA without the design option in this location. Furthermore, implementation of the design features described above under the heading "Project Design Features During Construction" includes a SWPPP that complies with the CGP. Therefore, impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

Temporary impacts on groundwater supplies or recharge associated with construction of the MSF will be similar to temporary groundwater impacts associated with construction of the LPA. While dewatering at the site of the MSF is not expected to be needed, if it is required, dewatering of the construction site will be subject to the requirements of the Construction Dewatering Permit and other applicable permits and, therefore, will not cause construction-related impacts on groundwater quality. Furthermore, the design features described above under the heading "Project Design Features During Construction" include implementation of a SWPPP that complies with the CGP. Therefore, impacts will be less than significant, and mitigation will not be required.

Threshold WR-CON-3: Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on drainage patterns in a manner that would result in substantial erosion or siltation, and mitigation would not be required.

Locally Preferred Alternative

Construction of the LPA may temporarily increase the impervious area around the project site (e.g., by installing access roads, contractor staging areas, or required localized changes in drainage patterns to control stormwater on and around the project site). Construction will minimize new impervious areas and will discharge runoff to existing storm drain systems. Existing drainage patterns will be preserved. Construction activities could temporarily increase the potential for stormwater to come in contact with exposed soils. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a

SWPPP that complies with the CGP and applicable water quality standards. Therefore, the impact will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Temporary impacts on existing drainage patterns associated with construction of the LPA with the design option would be similar to temporary drainage pattern impacts associated with construction of the LPA without the design option. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. Construction would minimize new impervious areas and would discharge runoff to existing drainage patterns. Therefore, the impact would be less than significant, and mitigation measures would not be required.

Maintenance and Storage Facility

Temporary impacts on existing drainage patterns associated with construction of the MSF will be similar to temporary drainage pattern impacts associated with construction of the LPA. To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. Construction will minimize new impervious areas and will discharge runoff to existing drainage patterns. Therefore, the impact will be less than significant, and mitigation measures will not be required.

Threshold WR-CON-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on drainage patterns in a manner that would result in flooding, and mitigation would not be required.

Locally Preferred Alternative

Construction of the LPA may temporarily increase the impervious area around the project site (e.g., by installing access roads, contractor staging areas, or required localized changes in drainage patterns to control stormwater on and around the project site). To address these temporary impacts, the design features discussed under the heading "Project Design Features During Construction" will be implemented during construction along with a SWPPP that complies with the CGP and applicable water quality standards. Therefore, the LPA will not substantially increase the rate or amount of runoff from the Affected Area that could cause flooding onsite or offsite, so impacts will be less than significant.

Design Option: Close 186th Street

Temporary impacts on existing drainage patterns associated with construction of the LPA with the design option would be similar to temporary impacts on drainage patterns associated with construction of the LPA without the design option. To address these

temporary impacts, the Project would implement the integrated design features described above under the heading "Project Design Features During Construction" and would also be required to implement a SWPPP that complies with the CGP. Therefore, the LPA with the design option would not substantially increase the rate or amount of runoff from the Affected Area that could cause flooding onsite or offsite, so impacts would be less than significant.

Maintenance and Storage Facility

Temporary impacts on existing drainage patterns associated with construction of the MSF will be similar to temporary drainage pattern impacts associated with construction of the LPA. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction" and will also be required to implement a SWPPP that complies with the CGP. Therefore, the MSF will not substantially increase the rate or amount of runoff from the Affected Area that could cause flooding onsite or offsite, so impacts will be less than significant.

Threshold WR-CON-5: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on drainage patterns in a manner that would contribute to exceedance of the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff, and mitigation would not be required.

Locally Preferred Alternative

Construction of the LPA may temporarily increase the impervious area around the project site (e.g., by installing access roads, contractor staging areas, or required localized changes in drainage patterns to control stormwater on and around the project site). Construction activities could temporarily increase the potential for stormwater to come in contact with construction-related contaminants. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction" and will also be required to implement a SWPPP that complies with the CGP. Therefore, the impact will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Temporary impacts on existing drainage patterns associated with construction of the LPA with the design option would be similar to temporary drainage pattern impacts associated with construction of the LPA without the design option. To address these temporary impacts, the Project would implement the integrated design features described above under the heading "Project Design Features During Construction" and would also be required to implement a SWPPP that complies with the CGP. Therefore, the impact would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

Temporary impacts on existing drainage patterns associated with construction of the MSF will be similar to temporary drainage pattern impacts associated with construction of the LPA. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction" and will also be required to implement a SWPPP that complies with the CGP. Therefore, the impact will be less than significant, and mitigation will not be required.

Threshold WR-CON-6: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through addition of impervious surfaces, in a manner which would impede or redirect flood flows?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on drainage patterns in a manner that would impede or redirect flood flows, and mitigation would not be required.

Locally Preferred Alternative

Construction of the LPA may temporarily increase the impervious area around the project site (e.g., by installing access roads, contractor staging areas, or required localized changes in drainage patterns to control stormwater on and around the project site). These impacts will not substantially increase the rate or volume of stormwater flows. Where construction occurs in the Los Angeles River, the Rio Hondo channel, or the San Gabriel River, activities will comply with all applicable federal and local floodplain regulations, including applicable NFIP regulations. Furthermore, implementation of the design features described above under the heading "Project Design Features During Construction" will require the contractor to control stormwater runoff from the project site and avoid and minimize construction-related flooding impacts. In the event of a flood, construction equipment will be moved to minimize impeding or redirecting flood flows. Therefore, the LPA is not expected to impede or redirect flood flows; impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Temporary impacts on existing drainage patterns associated with construction of the LPA with the design option would be similar to temporary drainage pattern impacts associated with construction of the LPA without the design option. To address these temporary impacts, the Project would implement the integrated design features described above under the heading "Project Design Features During Construction," which require the contractor to control stormwater runoff from the Affected Area and to avoid and minimize construction-related flooding impacts. Therefore, the LPA with the design option is not expected to impede or redirect flood flows; impacts would be less than significant; and mitigation would not be required.

Maintenance and Storage Facility

Temporary impacts on existing drainage patterns associated with construction of the MSF will be similar to temporary drainage pattern impacts associated with construction of the LPA. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction," which require the contractor to control stormwater runoff from the Affected Area and to avoid and minimize construction-related flooding impacts. Therefore, the MSF is not expected to impede or redirect flood flows; impacts will be less than significant; and mitigation will not be required.

Threshold WR-CON-7: Be subject to inundation by seiche, tsunami, or mudflow?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on flood, tsunami, or seiche zones that would increase the risk of pollution due to inundation, and mitigation would not be required.

Locally Preferred Alternative

Implementation of the LPA will include construction of new bridges across three major flood-control channels: the Los Angeles River, the Rio Hondo channel, and the San Gabriel River. New bridge deck structures will be built above the existing river channel walls or levees, with new bridge piers or columns built within the channel. Location hydraulic studies have been prepared to evaluate the impacts on each river (Appendices A, B, and C in the Water Resources Impact Analysis Report). The new bridges will raise the water surface elevation within the channel; however, implementation of the LPA will not alter the ability of the channel to convey the 100-year flows, and there will be negligible change to the floodplain extents. In the event of flood, hazardous materials used for construction activities will be moved or stored appropriately to minimize risk of release because of project inundation from flood water. Therefore, the LPA is not at risk of releasing pollutants because of project inundation from flood waters, and impacts will be less than significant.

The LPA will be located more than 20 miles from the ocean and approximately 250 feet above mean sea level, which is outside of the LA County Tsunami Hazard Area (California Geological Survey 2021), and no larger bodies of water subject to seiches are in the Affected Area. Therefore, the LPA will not be located within areas potentially affected by seiches or tsunamis, and no impacts associated with these events will occur.

Design Option: Close 186th Street

The design option would not be located within a seiche, tsunami, or mudflow zone; therefore, the design option would not risk release of pollutants resulting from project inundation by seiche, tsunami, mudflow, or flood waters.

Maintenance and Storage Facility

The MSF is not located within a seiche, tsunami, or mudflow zone; therefore, the design option will not risk release of pollutants resulting from inundation by seiche, tsunami, mudflow, or flood waters.

Threshold WR-CON-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Project Alternative

The Affected Area for water resources would remain unchanged under the No Project Alternative; construction-related impacts would not occur. Therefore, there would be no impacts on implementation of a water quality control plan or sustainable groundwater management plan, and mitigation would not be required.

Locally Preferred Alternative

Construction activities could result in temporary impacts on groundwater resources. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction" and will also be required to implement a SWPPP that complies with the CGP and local water quality control plan. Construction site dewatering activities (if needed) will be permitted. Therefore, the Project will not obstruct implementation of a water quality control plan or sustainable groundwater management plan because no sustainable groundwater management plan is applicable to the Affected Area; impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Temporary impacts on groundwater resources associated with construction of the LPA with the design option would be similar to temporary groundwater impacts associated with construction of the LPA without the design option. To address these temporary impacts, the Project would implement the integrated design features described above under the heading "Project Design Features During Construction" and would also be required to implement a SWPPP that complies with the CGP and local water quality control plan. Therefore, the LPA with the design option would not obstruct implementation of a water quality control plan or sustainable groundwater management plan; impacts would be less than significant; and mitigation would not be required.

Maintenance and Storage Facility

Temporary impacts on groundwater resources associated with construction of the MSF will be similar to temporary groundwater impacts associated with construction of the LPA. To address these temporary impacts, the Project will implement the integrated design features described above under the heading "Project Design Features During Construction" and will also be required to implement a SWPPP that complies with the CGP and local water quality control plan. Therefore, the MSF will not obstruct implementation of a water quality control plan or sustainable groundwater management plan; impacts will be less than significant; and mitigation will not be required.

4.19.3.12 Energy

This section summarizes the construction-related energy consumption under the No Build Alternative and the LPA, including the design option and MSF site, and the potential adverse effects and impacts on energy resources. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Energy Impact Analysis Report* (Metro 2024h).

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, including refinements to the LPA. Construction energy

consumption estimates for the LPA have been updated based on the refined construction schedule for the LPA. The analysis provided in the Draft EIS/EIR estimated that construction of Alternative 3 would require 7,300,299 gallons of diesel fuel and 596,447 gallons of gasoline. Refinements to the construction schedule resulted in a decrease in forecasted diesel fuel consumption—predominately attributed to less off-road equipment activity and shortening of MSF construction from three years to two—and an increase in motor gasoline consumption attributed to construction crew vehicle trips during extended utility and freight relocation activities. The increase in motor gasoline consumption will not place an undue burden on the regional commercial supply and will not represent a substantial change from the analysis provided in the Draft EIS/EIR. Furthermore, energy savings related to future operation of the LPA will offset the entirety of construction-related energy consumption within approximately three years of opening.

Additionally, since preparation of the Draft EIS/EIR analyses, regulatory agencies have published updated iterations of the off-road and on-road mobile source emissions inventory models that were used to complete the energy analysis supporting the Final EIS/EIR for the LPA. The Draft EIS/EIR construction analysis used CalEEMod Version 2016.3.2, whereas the analysis for the Final EIS/EIR was updated using the CalEEMod Version 2020.4.0, which was released in 2021. Updates to the CalEEMod database between the 2016 and 2020 versions of the model included incorporation of off-road equipment emission factors from the OFFROAD–ORION model published by the CARB and updating the on-road mobile source emission factors from EMFAC2014 to EMFAC2017.

Construction activities associated with the LPA are summarized in Section 4.19.2 and detailed in the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2024g). These activities are consistent with the *West Santa Ana Branch Transit Corridor Project Final Air Quality Impact Analysis Report* (Metro 2024i) and the *West Santa Ana Branch Transit Corridor Project Final Greenhouse Gas Impact Analysis Report* (Metro 20204f). Energy impact conclusions presented in the Draft EIS/EIR remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. The LPA will not result in adverse effects related to the consumption of energy resources. No mitigation measures are required.

Methodology

The analysis of construction effects considered the anticipated construction activities and phasing and identifies where construction staging could occur. This assessment compares energy consumption between the No Build Alternative and LPA and describes potential impacts to existing energy facilities. The assessment involves disclosing the one-time expenditure of fuel to construct the transit line, related infrastructure, and the MSF. The estimate of construction-related energy use (i.e., fuel consumption) was calculated by applying the fuel combustion factors related to greenhouse gases (USEPA 2018). Energy consumption associated with construction activities was estimated for the No Build Alternative and the LPA.

Locally Preferred Alternative

Diesel fuel for construction vehicles and equipment will be the primary source of energy use during the construction period. Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented during construction (described in Section 4.19.3.5 [Construction-related Air Quality]) and construction equipment will be maintained in accordance with manufacturers' specifications. As shown in Table 4.19.22, construction of the LPA (including the parking facilities and MSF) will require a one-time expenditure of approximately 2,143,114 gallons of diesel fuel and 803,410 gallons of gasoline, which sums to the equivalent of 381,064 MMBTU to construct the LPA.

Table 4.19.22. Construction Energy Consumption

End Use	Locally Preferred Alternative
Diesel Fuel	
Off-Road Construction Equipment – LRT (gallons)	1,381,889
Off-Road Construction Equipment – MSF (gallons)	137,002
Disposal Haul Trucks – LRT (gallons)	322,648
Disposal Haul Trucks – MSF (gallons)	18,358
Vendor Material Deliveries – LRT (gallons)	261,978
Vendor Material Deliveries – MSF (gallons)	21,230
Total diesel fuel consumption (in gallons)	***2,143,114***
Conversion factor (kBtu/gallons-diesel)	133.5
Total diesel combustion energy consumption (MMBTU)	***286,082***
Gasoline Fuel	
Total worker fuel consumption – LRT (gallons)	723,025
Total worker fuel consumption – MSF (gallons)	80,385
Total gasoline fuel consumption (gallons)	***803,410***
Conversion factor (kBtu/gallons-gasoline)	118.2
Total gasoline combustion energy consumption (MMBTU)	***94,982***
Total construction energy consumption (MMBTU)	**381,064**

Source: Metro 2024h
Notes: kBtu = thousand British thermal units; LRT = light rail transit; MMBTU = metric million British thermal units; MSF = maintenance and storage facility

Given that the transportation fuels summarized above will be used to construct an energy-efficient mass transit system, the extensive network of fueling stations throughout the project vicinity, and the temporary nature of the construction activities, the LPA will not require new or expanded sources of energy or infrastructure to meet demands and will not result in the wasteful or inefficient use of energy. Furthermore, based on the annual energy savings of 126,706 MMBTU as shown in Table 4.12.4 of Section 4.12.3.2, Energy, of this Final EIS/EIR, the energy required to construct the LPA, including the MSF, will be offset within three years of operation of the LPA. Therefore, under NEPA, the LPA will not result in adverse effects related to energy consumption during construction.

Design Option: Close 186th Street

Construction of the LPA with the design option would involve the same amount of off-road equipment and on-road vehicle activities as will be required to construct the LPA without the design option. The volumes of diesel fuel and gasoline that are presented in Table 4.19.22 would be applicable to construction of the design option. Project Measure AQ PM-1 (Metro Green Construction Policy) would be implemented during construction, which requires the implementation of applicable BMPs—including the use of renewable diesel fuel in off-road equipment—and would prevent the unnecessary expenditure of petroleum fuels. Therefore, construction of the LPA with the design option would not result in adverse effects related to energy resources.

Maintenance and Storage Facility

As shown in Table 4.19.22, a one-time expenditure of approximately 176,590 gallons of renewable diesel fuel and 80,385 gallons of gasoline will be needed to construct the MSF. As the MSF is a critical component of the LPA and will not be developed independently of the LRT, energy consumption is accounted for in the overall analysis of the LPA. The MSF will contribute to a net energy savings that will be achieved through the increased transit ridership and corresponding reduction in regional on-road VMT. Construction of the MSF will not constitute a wasteful, inefficient, or unnecessary consumption of energy. Therefore, the MSF will not result in adverse effects related to energy during construction.

U.S. Army Corps of Engineers Facilities

Energy consumption associated with short-term construction of the LPA will not affect USACE facilities.

Project Measures and Mitigation Measures

There are no project measures or mitigation measures related to energy. Refer to Section 4.19.3.5 for Project Measure AQ PM-1 (Metro Green Construction Policy).

California Environmental Quality Act Determination

Threshold ENERGY-CON-1: Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Table 4.19.22 provides an overview of the fuel consumption end uses that will be involved in construction activities for the LPA, design option, and MSF site.

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed, and the existing regional and Metro system energy consumption would remain unchanged. The No Project Alternative would not include construction of any project-related facilities or infrastructure; therefore, no diesel or gasoline fuel for equipment or vehicles would be expended. There would be no energy resource consumption related to construction of the No Project Alternative. The Metro *Green Construction Policy* and other energy-related initiatives would remain in place and would apply to any other ongoing Metro construction projects. Therefore, no significant impact would occur, and mitigation would not be required.

Locally Preferred Alternative

The LPA construction activities will comply with Metro*'s Green Construction Policy* (Metro 2018) per Project Measure AQ PM-1 (Metro Green Construction Policy). Additionally, construction equipment will be maintained in accordance with manufacturers' specifications and off-road equipment will be powered by renewable diesel fuel. As shown in the analysis presented in Table 4.19.22, construction of the LPA will require a one-time expenditure of approximately 2,143,114 gallons of renewable diesel fuel and 803,410 gallons of gasoline, which sums to the equivalent of 381,064 MMBTU. Given that these fuels will be used to construct an energy-efficient mass transit system, the extensive network of fueling stations throughout the project vicinity, and the temporary nature of the construction activities, the LPA will not require new or expanded sources of energy or infrastructure to meet energy demands and will not result in the wasteful or inefficient use of energy. Therefore, impacts will be less than significant, and no mitigation is required.

Design Option: Close 186th Street

Construction of the LPA with the design option would involve the same amount of off-road equipment and on-road vehicle activities as will be required to construct the LPA without the design option. The volumes of diesel fuel and gasoline that are presented in Table 4.19.22 also would be applicable to construction of the LPA with the design option. Project Measure AQ PM-1 (Metro Green Construction Policy) would be implemented to prevent the unnecessary expenditure of petroleum fuels. Therefore, construction of the LPA with the design option would result in a less than significant impact related to energy resource consumption.

Maintenance and Storage Facility

Diesel fuel for construction vehicles and equipment will be the primary source of energy use during construction of the MSF. As shown in the analysis presented in Table 4.19.22, a one-time expenditure of approximately 176,590 gallons of diesel fuel and 80,385 gallons of gasoline will be needed to construct the MSF. As the MSF is a critical component of the LPA that will not be developed independently of the LRT alignment, energy consumption is accounted for in the overall analysis of the LPA. Ultimately, the MSF will contribute to a net energy savings achieved through the increased transit ridership and corresponding transportation mode shift resulting from LPA implementation. Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented during construction of the MSF. Construction of the MSF will not constitute a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, impacts will be less than significant.

Threshold ENERGY-CON-2: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no significant impact would occur and mitigation would not be required.

Locally Preferred Alternative

Construction of the LPA will be consistent with state and local energy plans and policies to reduce energy consumption as activities will comply with CALGreen Code and Title 24. In addition, Project Measure AQ PM-1 (Metro Green Construction Policy) will be implemented during construction of the LPA, which will require use of less-polluting construction equipment and vehicles and implementing best practices to reduce harmful diesel emissions, as well as requiring the exclusive use of renewable diesel fuel in off-road equipment. BMPs include Tier 4 emission standards for off-road diesel-powered construction equipment with greater than 50 horsepower and restricting idling to a maximum of five minutes. The CALGreen Code requires reduction, disposal, and recycling of at least 50 percent of nonhazardous construction materials and requires demolition debris to be recycled and/or salvaged. The LPA will comply with state and local plans for energy efficiency in construction activities. Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

The analysis of energy resource consumption during construction of the LPA with the design option is similar to that which is provided for the LPA without the design option. Construction of the LPA with the design option would involve the same amount of off-road equipment and on-road vehicle activities as will be required to construct the LPA without the design option. The volumes of diesel fuel and gasoline that are presented in Table 4.19.22 would be applicable to construction of the LPA with the design option. Project Measure AQ PM-1 (Metro Green Construction Policy) would be implemented to prevent the unnecessary expenditure of petroleum fuels. Construction of the LPA with the design option would result in a less than significant environmental impact related to regional and local planning efforts to expand renewable energy supply and enhance energy efficiency.

Maintenance and Storage Facility

Construction activities for the MSF will comply with CALGreen Code and Title 24 and will implement Project Measure AQ PM-1 (Metro Green Construction Policy). Therefore, construction activities for the MSF will be consistent with state and local energy plans and policies to reduce energy consumption. Therefore, this impact will be less than significant, and mitigation will not be required.

Threshold ENERGY-CON-3: Would the Project require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no impact would occur, and mitigation would not be required.

Locally Preferred Alternative

The LPA will not require new or relocated distribution infrastructure such as transmission lines from power facilities and transformers. New connections between TPSS units and existing electrical utility lines will be constructed within the existing ROW, will not be related to supply or capacity deficiencies, and will be similar to routine utility improvements (e.g., construction of new underground conduits). Therefore, impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Similar to the LPA without the design option, the LPA with the design option would not require new or relocated distribution infrastructure, but new connections between TPSS units and existing electrical utility lines would be constructed within the existing ROW. This new connection would not be related to supply or capacity deficiencies and would be similar to routine utility improvements. Therefore, impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility

The MSF will require new electrical power and natural gas connections but will not require new telecommunication facilities. The MSF is on a developed urban site with existing or adjacent electricity and natural gas supplies. Utility connections will be within the existing ROW, will not be related to supply or capacity deficiencies, and will be similar to routine utility improvements. Therefore, impacts will be less than significant, and mitigation will not be required.

4.19.3.13 Electromagnetic Fields

EMF levels generated by power tools, such as cordless drills and table saws, will be similar to those found inside many buildings that are generated by devices such as refrigerators, televisions, and florescent lights. However, power tools used for the Project are expected to be farther away from buildings than EMF-generating devices typically found within a building. Therefore, EMF generated by construction activities will not affect existing buildings beyond the levels that are generally experienced in a building. Hence, construction activities will not cause adverse levels of EMF. System integration tests will generate EMF levels similar to those generated during LRT operations. Impacts of EMF during system testing are not treated as a construction impact because the testing replicates operation of the system. Mitigation is not required as project construction will not generate adverse EMF impacts.

4.19.3.14 Historic, Archaeological, and Paleontological Resources

This section summarizes the Section 106 analysis for built environment and archaeological historic properties, the NEPA analysis for paleontological resources, and the CEQA analysis for built environment, archaeological, and paleontological resources that was performed for construction of the LPA.

This section has been revised since the Draft EIS/EIR based on the identification of the LPA, inclusive of refinements, and comments received on the Draft EIS/EIR. Refer to Section 4.14, Historic, Archaeological, and Paleontological Section, for a summary of changes since the Draft EIS/EIR. The following changes are applicable to the analysis summarized in this section:

- Expansion of the APE, primarily to account for consideration of temporary construction easements and minor design changes resulting from stakeholder coordination and public comments on the Draft EIS/EIR. This expansion resulted in the identification of three additional historic properties/historical resources (L & F Machine Company/2110 Belgrave Avenue [MRN 9-034], Huntington Park High School/6020 Miles Avenue [MRN 10-021], and Cudahy Substation/Salt Lake Avenue [MRN15-032]); the effects/impacts of construction of the LPA on these resources/properties are included in this section.

- Expansion of the vertical extent of the APE from approximately 115 to approximately 150 feet below the existing ground surface to account for the depth associated with geotechnical borings necessary to support project design and construction.
- Analysis of the potential impacts/effects of construction of the LPA on portions of three river channels (the Los Angeles River channel [MRN 17-007], the Rio Hondo channel [18-017], and the San Gabriel River channel [29-025]) is included in response to comments received on the Draft EIS/EIR from the USACE.
- Additional information obtained following circulation of the Draft EIS/EIR indicated that Resource Primary Number [P] 19-002849, which was identified in the study summarized in the Survey Report—Rev 1, was previously destroyed and no longer remains extant within the APE for the LPA; therefore, there are no known archaeological historical properties/historical resources in the APE for the LPA.
- Minimization/Mitigation Measure CR-2 (Treatment of Known Significant Archaeological Resources) was removed, as there are no longer known archaeological resources within the APE for the LPA. Remaining mitigation measures were renumbered accordingly.
- The applicability of Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) was updated based on the updated analysis, which also considered the additional historic properties/historical resources included in the APE since circulation of the Final EIS/EIR, as presented in Section 4.19.3.7 (Construction-related Noise and Vibration) of this Final EIS/EIR. Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) will be applied to the following historic properties/historical resources: the LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line (MRN 17-005), the Bellflower Pacific Electric Railway Depot (28-008), and the Frampton-Dantema House (MRN 32-021).

Construction-related effects/impacts to Tribal Cultural Resources are addressed separately in Section 4.19.3.15 of this Final EIS/EIR.

For the purposes of Section 106, FTA has made the following determination: Construction of the LPA will result in no adverse effect to historic properties. SHPO concurrence on this effects determination was received on March 12, 2024.

Built Environment Historic Properties

Descriptions of the historic properties within the APE for the LPA are presented in the Survey Report–Rev 2 with a summary of findings related to potential effects to built environment historic properties presented in Table 4.14.1 in Section 4.14.2.1 of this Final EIS/EIR. As summarized below, construction of the LPA, the MSF, and design option will have no adverse effect to built environment historic properties and no minimization measures are required.

Locally Preferred Alternative

This section presents the effects associated with construction of the LPA, including temporary noise, vibration, and visual effects, and temporary property acquisitions and easements.

Potential noise and vibration effects related to construction of the LPA were evaluated and presented in the Noise and Vibration Impact Analysis Report and summarized in Section 4.19.3.7, Construction-related Noise and Vibration of this Final EIS/EIR. In relation to built

environment historic properties, noise and/or vibration would have an adverse effect if it were to alter the characteristics of a historic property that qualify it for inclusion in the NRHP. The APE traverses an urbanized environment that somewhat regularly experiences construction-related noise and vibration similar to that which will result from construction of the LPA. Noise and vibration associated with construction of the LPA will be temporary. With implementation of Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (described in Section 4.19.3.7 of this Final EIS/EIR), construction-related vibration will not result in physical damage to historic properties in the APE. In particular, Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (described in Section 4.19.3.7) will apply to the following historic properties and will reduce vibration such that it will not exceed the specified damage risk criteria: the LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line (MRN 17-005) and the Bellflower Pacific Electric Railway Depot (28-008). Additionally, although not required to reduce effects, Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) (also described in Section 4.19.3.7), will be implemented during construction, which will require monitoring construction vibration levels within 200 feet of historic properties/historical resources to ensure the vibration damage thresholds will not be exceeded. Due to the existing environment within the APE, construction of the LPA will not change the character of use or diminish the integrity of any of the significant features of historic properties in the APE, nor will it alter the characteristics of any of the historic properties in the APE that qualify them for inclusion in the NRHP.

Construction of the LPA will introduce visual elements, such as construction equipment and fencing, within or in the vicinity of all historic properties in the APE. However, these elements, which are necessary to facilitate construction, will be removed following construction and, therefore, will not permanently diminish the integrity of any of the historic properties in the APE. Additionally, construction equipment is consistent with the urban setting of the APE and will not significantly alter the existing urban environment. The introduction of temporary construction-related visual elements to historic properties or their vicinity will not alter any of the characteristics of historic properties in the APE that qualify them for inclusion in the NRHP or the physical features within the setting of any historic properties that contribute to their historic significance. No adverse effect will occur as a result of the introduction of temporary construction-related visual elements associated with the LPA.

The effect of permanent acquisitions and easements are discussed in Section 4.14.3.1 (Historic, Archaeological, and Paleontological) of this Final EIS/EIR. While additional temporary acquisitions and easements will be necessary to facilitate construction of the LPA, construction acquisitions and easements will be temporary and will not remain following construction of the LPA. None of the temporary acquisitions or easements will physically alter any of the characteristics of the historic properties in the APE for the LPA that qualify them for inclusion in the NRHP. Therefore, the temporary acquisitions and easements will result in no adverse effect.

Construction of the LPA will temporarily alter the condition of the following historic properties: a small portion of the 105 historic district (MRN 21-027) in Paramount, the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) in South Gate, the Los Angeles River channel (MRN 17-007) in South Gate, the Rio Hondo channel (MRN 18-017) in South Gate, and the San Gabriel River channel (MRN 29-025) in Cerritos. Proposed temporary changes to the 105 historic district and Union Pacific Los Angeles River Rail Bridge are discussed below,

and alterations to the above-noted river channels are discussed under the heading "U.S. Army Corps of Engineer Facilities."

A small portion of the 105 historic district will be temporarily modified during construction of the LPA to construct permanent elements of the LPA within the district. These modifications consist primarily of the presence of construction elements such as falsework and construction equipment within the district. Additionally, a maximum of 15 trees, the presence of which is considered character-defining, will be temporarily removed from the district to enable construction. While the setting within and immediately surrounding the 105 historic district will be modified with the introduction of visual elements and the removal of trees necessary for construction, the district's setting is such that the addition of the construction-related visual elements within it and in its vicinity will not diminish its integrity. Additionally, there will be no permanent change to the district's setting because construction-related elements will be removed following construction and trees will be replaced at a 1:1 ratio. Therefore, the temporary modifications will result in no adverse effect to the district because they will not permanently modify any of the district's character-defining features such that its integrity will be diminished.

The Union Pacific Los Angeles River Rail Bridge will be temporarily physically modified (existing nonoriginal concrete debris walls partially demolished) by construction of the LPA. Because existing debris walls will be extended to support the new LRT bridge, falsework will be physically attached to the bridge's existing substructure and construction equipment will operate in the bridge's immediate vicinity to facilitate construction of the LPA. However, the permanent design associated with extension of the concrete debris walls will be developed in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards) per Project Measure CR PM-1 (SOI Standards Design Review), described in Section 4.14.4 of the Historic, Archaeological, and Paleontological Section. While the immediate setting of the Union Pacific Los Angeles River Rail Bridge will be modified as a result of the presence and operation of construction equipment and crews necessary to facilitate construction of the LPA, the bridge's existing setting is such that the addition of the construction-related visual elements in its vicinity will not diminish its integrity. Additionally, these elements will be removed following construction, and there will be no permanent changes to the bridge's setting as a result of construction of the LPA.

U.S. Army Corps of Engineer Facilities

The LPA will cross the following three river channels under the jurisdiction of the USACE that are considered historic properties: the Los Angeles River channel (MR 17-007), the Rio Hondo channel (MR 18-017), and the San Gabriel River channel (MR 29-025). Construction of the LPA will require temporary modifications within all three channels. At the Los Angeles River channel, four concrete debris walls currently existing in the river channel, beneath the Union Pacific Los Angeles River Bridge, will be partially demolished to construct new pier and debris walls for the LRT bridge. Additionally, two concrete abutments, one on each side of the channel, will be constructed to support the new LRT bridge. Construction of the LPA within the Rio Hondo channel will require demolition of two existing concrete debris walls that are within the river channel, beneath the Rio Hondo Bridge, to construct new pier and debris walls for the new LRT bridge. Additionally, two concrete abutments, one on each side of the river channel, will be constructed to support the new LRT bridge. Construction of the LPA within the San Gabriel River channel may require removal of concrete; however, removed materials will be replaced in-kind.

In addition to the physical modifications noted above, construction of the LPA will result in the presence and operation of construction equipment and crews within and adjacent to the channels. However, due to the existing setting within and surrounding these historic properties, the visual elements introduced during construction in and surrounding these historic properties will not alter their setting nor any of their character-defining features. The Los Angeles River channel, Rio Hondo channel, and San Gabriel River channel will therefore not be adversely affected by construction of the LPA and no minimization measures are required.

Design Option: Close 186th Street

No built environment historic properties listed or eligible for listing in the NRHP have been identified in the APE in the vicinity of the design option. Therefore, construction of the design option would result in no effect to built environment historic properties and no minimization measures are required.

Maintenance and Storage Facility

No built environment historic properties have been identified in the APE for the LPA in the vicinity of the MSF site. Therefore, construction of the MSF site will result in no effects to built environment historic properties and no minimization measures are required.

Archaeological Historic Properties

As discussed in further detail in the following sections, construction of the LPA, MSF site, and design option will result in no effect to known archaeological historic properties and minimization measures are not required.

Locally Preferred Alternative and Maintenance and Storage Facility

The study summarized in the Survey Report–Rev 2 did not identify any known archaeological historic properties in the APE for the LPA. Specifically, following circulation of the Draft EIS/EIR, additional documentation related to Resource P-19-002849, which was identified by the study summarized in the Survey Report–Rev 1, was obtained that indicates the resource was previously destroyed and no longer extant within the APE for the LPA. Therefore, there are no known archaeological resources qualifying as historic properties within the APE for the LPA, including at the MSF site or near the design option. Therefore, construction of the LPA will result in no effect to known archaeological historic properties in accordance with Section 106 and no minimization measures are required.

While the APE for the LPA is considered to have low to moderate sensitivity for buried archaeological deposits, portions of the LPA will be in proximity to major waterways (Los Angeles River, Rio Hondo, and San Gabriel River), where the sensitivity for buried resources is considered more moderate, as areas in proximity to natural waterways are generally more sensitive for archaeological resources because water is necessary for sustaining life. Construction of the LPA will involve ground disturbance with the potential to encounter buried archaeological deposits associated with unknown archaeological historic properties, if present.

U.S. Army Corps of Engineers Facilities

The study summarized in the Survey Report–Rev 2 did not identify any known archaeological historic properties in the APE at the USACE facilities. Therefore, construction of the LPA will

result in no effect to known archaeological historic properties within USACE facilities and no minimization measures are required in accordance with Section 106.

The potential for construction-related effects to unknown archaeological historic properties to occur as a result of construction of the of the LPA within USACE facilities is consistent with that of the larger LPA. As noted, the sensitivity for buried resources is considered moderate in areas within proximity to natural waterways.

Design Option: Close 186th Street

The study summarized in the Survey Report–Rev 2 did not identify known archaeological historic properties in the APE in the vicinity of the design option. Therefore, construction of the design option would result in no effect to known archaeological historic properties and no minimization measures are required. The potential for construction-related effects to unknown archaeological historic properties to occur as a result of construction of the of the LPA with the design option is similar to construction of the LPA without the design option.

Paleontological Resources

As discussed in greater detail in the following sections, construction of the LPA, the design option, and the MSF site may result in an adverse effect to paleontological resources.

Locally Preferred Alternative and Maintenance and Storage Facility

The Affected Area for paleontological resources is considered to have high paleontological sensitivity at depths at or below 5 feet. Therefore, the potential to discover paleontological resources during ground-disturbing activities associated with construction of the LPA and MSF is high. In general, the potential for construction to result in adverse effects to paleontological resources is directly proportional to the amount and location of ground disturbance associated with the activity. The types of effects to paleontological resources may include disturbance, damage, or destruction of a significant fossil; destruction of a unique geologic feature associated with a paleontological site; or disturbance or destruction of a paleontological site, which results in the loss of scientific context of fossil remains.

No paleontological resources have been identified in the Affected Area for paleontological resources associated with the LPA. However, construction of the LPA will require ground disturbance such as grading, excavation, and trenching. If construction of the LPA results in the disturbance or destruction of paleontological resources, an adverse effect for the purposes of NEPA will occur.

U.S. Army Corps of Engineers Facilities

No paleontological resources have been identified in the Affected Area for paleontological resources at the USACE facilities. However, ground disturbance such as excavation will occur during construction of the LPA. If construction of the LPA within the USACE facilities results in the disturbance or destruction of paleontological resources, an adverse effect for the purposes of NEPA will occur.

Design Option: Close 186th Street

No paleontological resources have been identified in the Affected Area for paleontological resources at the design option. However, consistent with construction of the LPA without the design option, if ground disturbances during construction of the LPA with the design option

results in the disturbance or destruction of paleontological resources, an adverse effect for the purposes of NEPA will occur.

Minimization/Mitigation Measures

Built Environment Historic Properties

As presented in the analysis in the Effects Report and summarized in prior sections, construction of the LPA, design option and MSF site, will result in no adverse effect to built environment historic properties. Implementation of Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (described in Section 4.19.3.7 [Construction-related Noise and Vibration Section]) during construction in proximity to the LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line (MRN 17-005), the Bellflower Pacific Electric Railway Depot (28-008), and the Frampton-Dantema House (MRN 32-021) will reduce vibration associated with compaction such that it will not exceed damage risk criteria. No physical damage will occur to these historic properties/historical resources. Additionally, although not required to reduce effects/impacts, Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) (also described in Section 4.19.3.7), will be implemented during construction, which will require monitoring construction vibration levels within 200 feet of historic properties/historical resources to ensure the vibration damage thresholds will not be exceeded. No additional minimization/mitigation measures for built environment historic properties/historical resources are required during construction.

Archaeological Historic Properties

As presented in the Effects Report and summarized in prior sections, construction of the LPA, the design option, and the MSF will result in no effect to known archaeological historic properties. Therefore, minimization measures for archaeological historic properties are not required during construction under Section 106 or NEPA.

Under CEQA, construction of the LPA, design option, and MSF site will involve ground disturbance with the potential to physically alter, remove, or destroy buried archaeological deposits associated with unknown archaeological historic properties, if present. In the event of unanticipated discovery during construction of the LPA, design option, and/or MSF, the procedures outlined in the standard measures listed below, which are required to reduce significant impacts to archaeological resources pursuant to CEQA, will be implemented.

CR-1 Development of Cultural Resources Monitoring and Discovery Program

Prior to the start of any ground-disturbing activity, an archaeologist that meets the Secretary of Interior's Professional Qualification Standards in Archaeology will prepare and implement a Cultural Resources Monitoring and Discovery Program (CRMDP) for the Project. The CRMDP will include the requirements of Mitigation Measures CR-2 through CR-4 and the following:

- A summary of the results of the West Santa Ana Branch Transit Corridor Project Final Cultural Resources Survey Report—Rev 2 and the West Santa Ana Branch Transit Corridor Project Revised Final Cultural Resources Effects Report.
- Procedures for avoidance of unanticipated discoveries where possible.

- Procedures for preservation in place of unanticipated discoveries where possible.
- Provisions of cultural resources awareness training to construction workers that will be implemented as part of Mitigation Measure CR-2 (Archaeological Work Environmental Awareness Program).
- Provisions for archaeological and Native American monitoring of ground disturbance related to construction of the Project.
- Summary of the treatment procedures for unanticipated discoveries, as specified in Mitigation Measure CR-4 (Treatment of Unanticipated Discoveries). This will include general research questions to be addressed by any studies, field, and laboratory methods for the gathering of data to evaluate sites for the California Register of Historical Resources and/or National Register of Historic Places, and requirements for addressing any sites identified as significant.
- Procedures for Native American coordination and input.
- Procedures for the treatment of human remains, if applicable, as outlined in existing regulations. These procedures will include, but not be limited to, communication protocol for contacting the coroner and preparation of a human remains treatment plan in consultation with the Most Likely Descendant(s).
- Guidelines for the reporting of monitoring and treatment results.

CR-2 Archaeological Worker Environmental Awareness Program

A Secretary of the Interior qualified archaeologist will be retained to prepare a Worker's Environmental Awareness Program training for archaeological sensitivity. This training will be provided to all construction personnel prior to the commencement of any ground-disturbing activities. Archaeological sensitivity training will include a description of the types of cultural material that may be encountered, cultural sensitivity issues, regulatory issues, and the proper protocol for treatment of the materials in the event of a find.

CR-3 Archaeological Monitoring

Monitoring pursuant to the Cultural Resources Monitoring and Discovery Program will be supervised by the qualified archaeologist who meets the Secretary of Interior Standards. The duration and timing of the monitoring will be determined by the qualified archaeologist. The archaeological monitor under the direction of a Secretary of the Interior qualified archaeologist will be present during ground-disturbing activities that have the potential to uncover previously known and unknown archaeological resources (i.e., ground-disturbing activities that will extend beyond the limits of prior disturbances). These activities will include, but will not be limited to, pavement removal, grading, and trenching. Activities such as drilling that do not allow for soil visibility during excavation will be spot-checked but will not require a full-time monitor. Monitoring and spot-checking will be required up to a depth of 20 feet. If the qualified archaeologist determines that full-time monitoring is no longer warranted, he or she may recommend reducing monitoring to periodic spot-checking or cease entirely. Monitoring will be reinstated if any new or unforeseen deeper ground disturbances are required and reduction or suspension of the monitoring will

need to be reconsidered by the qualified archaeologist. In the event that an archaeological resource is discovered, the monitor will have the authority to temporarily divert construction equipment around the find with a 50-foot buffer, or other buffer as determined by the archaeologist, to protect the resource until it is assessed for significance and treatment (e.g., avoidance, testing, data recovery), if necessary, is determined by the Federal Transit Administration in consultation with the State Historic Preservation Officer and consulting parties and executed.

At the conclusion of archaeological monitoring, a final report will be prepared by the Secretary of the Interior qualified archaeologist, or his or her designee, describing the results of the archaeological monitoring efforts associated with the Project. If previously unidentified cultural resources are discovered during construction monitoring, a report will be prepared following the State Historic Preservation Office's Archaeological Resource Management Report Guidelines that document the findings of the field and laboratory analysis and interpret the data within appropriate research context.

CR-4 Treatment of Unanticipated Discoveries

The contractor or archaeological monitor will notify Metro immediately if potentially significant archaeological resources are exposed during ground-disturbing activities. Archaeological monitors will have the authority to divert or temporarily halt ground-disturbing operations at the discovery. The area will be fenced or flagged as soon as possible following the discovery. Until the boundaries of the resource can be established with testing procedures, a 50-foot buffer zone around the identified deposit will be fenced or flagged off. Subsequent to the identification of site boundaries, the fenced or flagged buffer surrounding the resource could be reduced to a 10- to 15-foot buffer zone at the discretion of the qualified archaeologist. All fencing or flagging of archaeological deposits will be monitored by a qualified archaeologist. Temporary fencing or flagging will remain in place until the resource has been released by the qualified archaeological monitor, in consultation with Metro and FTA. Construction activities may continue in areas beyond the buffer zones. The discovery will be evaluated by the qualified archaeologist in accordance with the methods identified in the Cultural Resources Monitoring and Discovery Program (Mitigation Measure CR-1) to determine if the archaeological resource is eligible for listing on the National Register of Historic Places (NRHP) and/or California Register of Historic Resources (CRHR). If the archaeological resource is determined eligible for the NRHP and/or CRHR, a treatment plan, will be prepared in accordance with 36 Code of Federal Regulations § 800.13(a)(2) in consultation with the State Historic Preservation Officer.

Paleontological Resources

Based on the effect analysis summarized in the preceding sections, construction of the LPA, design option, and/or the MSF site have a high potential to result in adverse effects to paleontological resources during grading, excavation, and trenching that extend below 5 feet bgs. These adverse effects will be reduced with implementation of Mitigation Measure PR-1 (a) through (d): PR-1a: Paleontological Resources Mitigation and Monitoring Program, Mitigation Measure PR-1b: Paleontological Worker Environmental Awareness Program,

Mitigation Measure PR-1c: Construction Monitoring, and Mitigation Measure PR-1d: Preparation and Curation of Recovered Fossils.

Mitigation Measure PR-1 (a through d), as presented below, will effectively reduce adverse effects related to construction of the LPA to these resources through the recovery, identification, and curation of previously unrecovered fossils. No project measures have been identified for paleontological resources.

PR-1(a) Paleontological Resources Mitigation and Monitoring Program

Prior to the commencement of ground-disturbing activities for the LPA, Metro will retain a qualified professional paleontologist to prepare and implement a Paleontological Resources Mitigation and Monitoring Program (PRMMP) for the LPA. The qualified paleontologist (principal paleontologist) must have at least a Master's degree or equivalent work experience in paleontology, will have experience with local paleontology, and will be familiar with paleontological procedures and techniques. The PRMMP will describe mitigation requirements to be consistent with the Society of Vertebrate Paleontology (SVP) standards for paleontological resources mitigation (SVP 2010). The PRMMP will include at a minimum the following:

1) Geologic setting, including paleontological sensitivity of the LPA site
2) Description of the LPA, outlining the type and extent of ground disturbance
3) Specifications for what ground-disturbing activity requires paleontological monitoring
4) Paleontological monitoring procedures:
    a. Qualifications of paleontological monitors
    b. Timing and duration of monitoring
    c. Required data collection procedures
    d. Daily monitoring log content
5) Communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development of the LPA
6) Construction diversion and resource recovery protocols:
    a. Authority for ceasing construction
    b. Aerial extent of avoidance (construction exclusion) for any discovery
    c. Timing to evaluate and recover the fossil
7) Fossil collection and preparation standards (field and museum)
8) Curation standards, including appropriate institutions, curation agreements, and deadlines for materials to be accessioned
9) Post-recovery reporting requirements

PR-1(b) Paleontological Worker Environmental Awareness Program

Prior to the start of construction, the qualified paleontologist or his or her designee will conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The Paleontological Worker Environmental Awareness Program will be fulfilled at the time of a

preconstruction meeting. In the event of a fossil discovery by construction personnel, all ground-disturbing activities within 50 feet of the find will be halted, a 50-foot exclusion zone around the find will be established, and the qualified paleontologist and/or designee will be contacted to evaluate the find before re-starting work in the exclusion zone. If the qualified paleontologist determines that the fossil(s) is (are) scientifically significant, the qualified paleontologist will complete the conditions outlined in Mitigation Measure PR-1(c) and PR-1(d) to mitigate impacts to significant fossil resources.

PR-1(c) Construction Monitoring

Ground-disturbing construction activities (including grading, excavation, and trenching) that have the potential to impact previously undisturbed (i.e., native) sediments or geologic units of high paleontological sensitivity below 5 feet bgs will be monitored on a full-time basis by a qualified paleontological monitor during initial ground disturbance. Monitoring pursuant to the Paleontological Mitigation and Monitoring Program will be supervised by the qualified paleontologist and will be conducted by a monitor who meets or exceeds the SVP (2010) requirements for a qualified paleontological monitor, including at least a Bachelor's degree in geology, paleontology, or related field, and experience with collection and salvage of paleontological resources. If geological evidence indicates that sediments are younger alluvium or previously disturbed sediments and have a low potential to yield paleontological resources, or if older sediments are determined not to be fossiliferous based on results of monitoring at this location, the qualified paleontologist may determine that full-time monitoring is no longer warranted and may recommend reducing monitoring to periodic spot-checking or cease entirely. Monitoring will be reinstated if any new or unforeseen deeper ground disturbances are required and reduction or suspension of the monitoring will need to be reconsidered by the qualified paleontologist. Ground-disturbing activity that reaches a depth of less than 5 feet bgs will not require paleontological monitoring.

In the event that a paleontological resource is discovered, the monitor will have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected. Typically, fossils can be safely recorded and, if significant, potentially collected quickly by a single paleontologist without disrupting construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) may require more extensive excavation and longer recovery periods. In such a case, the monitor, under the supervision of the principal paleontologist, will have the authority to temporarily direct, divert, or halt construction activity so that the fossil(s) can be removed in a safe and timely manner.

PR-1(d) Preparation and Curation of Recovered Fossils

Once recovered, significant fossils will be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated at a scientific institution with a permanent paleontological collection (such as the Natural History Museum of Los Angeles County) along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the qualified

paleontologist. The cost of curation is assessed by the repository and will be the responsibility of Metro.

At the conclusion of all required monitoring, laboratory work, and museum curation, the qualified paleontologist will prepare a final report describing the results of the paleontological mitigation monitoring efforts associated with the LPA. The report will include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to the designated museum repository and to Metro.

California Environmental Quality Act Determination

Historical Resources

Threshold HIS-CON-1: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed; properties would not be acquired for the LPA; and no built resources or structures along the project alignment would be altered as a result of the LPA. The existing freight tracks within the rail ROWs would remain undisturbed, and no aerial structures would be constructed along the public or rail ROWs. No project-related noise or vibration would occur. The environmental setting would remain in current conditions and no impact to built environment historical resources would occur. Mitigation would not be required.

Locally Preferred Alternative

Potential impacts to built environment historical resources as a result of construction of the LPA include those directly related to its construction, including temporary noise and vibration impacts, temporary property acquisitions and easements, and temporary visual impacts. Potential noise and vibration impacts related to construction of the LPA were evaluated and presented in the Noise and Vibration Impact Analysis Report and summarized in Section 4.19.3.7, Construction-related Noise and Vibration, of this Final EIS/EIR. For the purposes of the current analysis, noise and vibration were analyzed based on their potential to significantly impact historical resources in accordance with CEQA. As discussed below, none of these activities will result in a significant impact to built environment historical resources.

Potential impacts (including noise, vibration, and visual impacts, as well as impacts resulting from temporary easements) from construction of the LPA on historical resources are consistent with the effects presented in Section 4.19.3.14 under the heading "Locally Preferred Alternative." Noise, vibration, and visual impacts, as well as impacts resulting from temporary easements associated with construction of the LPA, will not alter the characteristics of any of the historical resources in the APE for the LPA such that they will be materially impaired in accordance with CEQA.

According to the analysis presented in the Noise and Vibration Impact Analysis Report and summarized in Section 4.19.3.7, Construction-related Noise and Vibration of this Final EIS/EIR, three built environment historical resources are located in the APE for the LPA—the LADWP

Boulder Dam-Los Angeles 287.5 kV Transmission Line (MRN 17-005), the Bellflower Pacific Electric Railway Depot (28-008) and the Frampton-Dantema House (MRN 32-021)—that have the potential to be affected by vibration associated with construction of the LPA. However, implementation of Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (described in Section 4.19.3.7) will reduce vibration associated with compaction such that it will not exceed damage risk criteria, and there will be no physical damage to these resources. Therefore, there will be less than significant impacts to historical resources. Additionally, Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) (also described in Section 4.19.3.7), will be implemented, which will require monitoring construction vibration levels within 200 feet of historic properties/historical resources to ensure the vibration damage thresholds will not be exceeded. This measure will be implemented as a precautionary measure.

Additionally, construction of the LPA will temporarily alter the condition of the following historical resources within the APE for the LPA: the 105 historic district (MRN 21-027) in Paramount, the Union Pacific Los Angeles River Rail Bridge (MRN 17-006) in South Gate, the Los Angeles River channel (MRN 17-007) in South Gate, the Rio Hondo channel (MRN 18-017) in South Gate, and the San Gabriel River channel (MRN 29-025) in Cerritos. A description of the construction-related modifications to each of these historical resources and corresponding effects is provided previously under the heading "Locally Preferred Alternative." Under CEQA, potential impacts from construction of the LPA on these historical resources are consistent with those described previously.

A small portion of the 105 historic district will be temporarily modified during construction of the LPA to construct permanent elements of the LPA within the district. While the setting within and immediately surrounding the 105 historic district will be modified during construction, these temporary changes will not diminish its integrity. Additionally, these elements will be removed following construction, and trees removed will be replaced at a 1:1 ratio. Construction of the LPA will therefore not result in significant impacts to the district because construction will not permanently modify any of the district's character-defining features such that its integrity will be diminished.

Similarly, the Union Pacific Los Angeles River Rail Bridge will also be temporarily physically modified (nonoriginal debris walls will be partially demolished) by construction of the LPA. However, permanent designs associated with extension of the bridge's nonoriginal concrete debris walls will be developed in accordance with the SOI Standards per Project Measure CR PM-1 (SOI Standards Design Review) (described in Section 4.14.4, Historic, Archaeological, and Paleontological Section), and the bridge's setting is such that the addition of the construction-related visual elements in its vicinity will not diminish its integrity. Construction of the LPA over and within the Los Angeles River channel, Rio Hondo channel, and the San Gabriel River channel will temporarily alter the condition of the river channels. However, due to the existing setting within and surrounding these historical resources, the visual elements introduced into and in areas surrounding these historic properties during construction of the LPA will not alter their setting nor any of their character-defining features.

As indicated by the analysis presented above, with implementation of Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (described in Section 4.19.3.7) and for precaution Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) (also described in Section 4.19.3.7),

construction of the LPA will result in less than significant impacts to built environment historical resources.

Mitigation Measures: Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) and for precaution Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources).

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

No built environment historical resources are located in the construction footprint associated with the design option. However, one historical resource, the Frampton-Dantema House, is located in its vicinity at 18644 Alburtis Avenue in Artesia. Construction activities associated with the LPA with the design option would be generally consistent with those described above for the LPA without the design option. While construction may occur closer to the Frampton-Dantema House under the LPA with the design option, potential impacts are consistent between the LPA with and without the design option. Accordingly, Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) (Section 4.19.3.7, Construction-related Noise and Vibration Section) would be implemented during construction to ensure that construction activities near the Frampton-Dantema House would be held to a protective vibration damage threshold and would thereby result in less than significant impacts. Additionally, VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) (also described in Section 4.19.3.7), would be implemented, which would require monitoring construction vibration levels within 200 feet of historic properties/historical resources to ensure the vibration damage thresholds would not be exceeded. This measure would be implemented as a precautionary measure. As a result, construction of the design option would result in less than significant impacts to historical resources.

Mitigation Measures: Mitigation Measure VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources) and for precaution Mitigation Measure VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) will further minimize effects.

Impacts Remaining After Mitigation: Less than significant.

Maintenance and Storage Facility

No built environment historical resources are located in the construction footprint of the MSF site or within the vicinity of the MSF site. Construction of the MSF will not directly physically alter any built environment historical resources, nor will it alter the setting of any built environment historical resources. Construction of the MSF site will therefore result in no impact to historical resources; mitigation is not required.

Archaeological Resources

Threshold ARCH CON-1: Would the Project cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?

No Project Alternative

Under the No Project Alternative, the environmental setting would remain in current conditions. No substantial physical impacts to archaeological resources would occur. Therefore,

no significant impacts related to archaeological resources would occur under the No Project Alternative, and mitigation would not be required.

Locally Preferred Alternative and Maintenance and Storage Facility

No known archaeological resources have been identified within the direct APE for the LPA, including in the vicinity of the MSF site. As such, ground-disturbing activities associated with construction of the LPA and MSF will not result in significant impacts to known archaeological resources. Ground-disturbing activities associated with construction of the LPA and MSF have the potential to alter, remove, or destroy unanticipated archaeological resources, if present. If unanticipated archaeological historical resources are directly altered, removed, or destroyed by construction of the MSF, a significant impact will occur.

Mitigation Measures: Unanticipated Discoveries: CR-1 (Development of Cultural Resources Monitoring and Discovery Program), CR-2 (Archaeological Worker Environmental Awareness Program), CR-3 (Archaeological Monitoring), and CR-4 (Treatment of Unanticipated Discoveries).

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

No known archaeological resources have been identified within the direct APE for the LPA, including in the vicinity of the design option. Therefore, construction of the design option would not result in impacts to known archaeological historical resources. Ground-disturbing activities associated with construction of the LPA with the design option would have the potential to alter, remove, or destroy unanticipated archaeological historical resources, if present. If unanticipated archaeological historical resources are directly altered, removed, or destroyed by construction of the design option, a significant impact would occur.

Mitigation Measures: Unanticipated Discoveries: CR-1 (Development of Cultural Resources Monitoring and Discovery Program) CR-2 (Archaeological Worker Environmental Awareness Program), CR-3 (Archaeological Monitoring), and CR-4 (Treatment of Unanticipated Discoveries).

Impacts Remaining After Mitigation: Less than significant.

Threshold ARCH CON-2: Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

No Project Alternative

Under the No Project Alternative, the environmental setting would remain in current conditions. Therefore, no impact to human remains would occur under the No Project Alternative, and mitigation would not be required.

Locally Preferred Alternative and Maintenance and Storage Facility

No known human remains or cemeteries have been documented in the direct APE for the LPA, including near the MSF. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the Los Angeles County Coroner must be notified immediately. If the human remains are determined to be

prehistoric, the coroner is required to notify the Native American Heritage Commission, which would determine and notify a Most Likely Descendant who must complete the inspection of the site within 48 hours of notification and provide recommendations for treatment to the landowner within 48 hours of being granted access. Archaeological and Native American monitors would be present during all project ground-disturbing activities with the potential to encounter human remains. Incidental discoveries will be treated in accordance with existing regulation. Construction of the LPA and MSF will result in a less than significant impact to human remains with adherence to existing state regulations concerning the discovery of human remains, and no mitigation measures are required.

Design Option: Close 186th Street

No known human remains or cemeteries have been documented in the direct APE for the LPA, including in the vicinity of the design option. Construction of the LPA with the design option is substantially similar to construction of the LPA without the design option. Unanticipated human remains may be unearthed during ground-disturbing activities associated with construction of the LPA with the design option. However, consistent with the LPA without the design option, construction of the LPA with the design option would result in less than significant impacts to human remains with adherence to existing state regulations (State of California Health and Safety Code Section 7050.5 and PRC Section 5097.98) concerning the discovery of human remains, and no mitigation measures are required.

Paleontological Resources

Threshold PALEO-CON-1: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Project Alternative

Under the No Project Alternative, no new ground disturbance would occur because the LPA would not be constructed and the environmental setting would remain in current conditions. As such, there would be no impacts to paleontological resources. Mitigation would not be required.

Locally Preferred Alternative and Maintenance and Storage Facility

The entire Affected Area for paleontological resources is considered to have the same paleontological sensitivity (high at depths at or below 5 feet). Impacts to paleontological resources associated with construction of the LPA and MSF will be greatest for activities such as grading, excavation, and trenching that require a high degree of sediment displacement. These activities will directly impact and disturb the geologic strata at depth and have a high potential to impact buried paleontological resources where disturbance will extend below 5 feet bgs. Staging areas or access roads are examples of construction activities that will result in limited surface-disturbing activities; therefore, the potential to significantly impact paleontological resources as a result of these ancillary activities is low or is not anticipated. Removal of existing structures is not anticipated to result in significant impacts because ground disturbance will occur within previously disturbed sediments. Indirect impacts during construction of the LPA and MSF are not anticipated because non-construction personnel will not be allowed to gain access to any newly unearthed, previously buried paleontological resources and unlawful collection of fossils will not occur. Construction of the LPA and MSF could result in significant impacts if paleontological resources are present.

Mitigation Measures: PR-1 (PR-1a: Paleontological Resources Mitigation and Monitoring Program, PR-1b: Paleontological Worker Environmental Awareness Program, PR-1c: Construction Monitoring, and PR-1d: Preparation and Curation of Recovered Fossils)

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

Construction of the LPA with the design option is substantially similar to construction of the LPA without the design option. Therefore, potential impacts to paleontological resources associated with construction of the LPA with the design option will be similar to those described above for the LPA without the design option. Construction could result in a significant impact if paleontological resources are present.

Mitigation Measures: PR-1 (PR-1a: Paleontological Resources Mitigation and Monitoring Program, PR-1b: Paleontological Worker Environmental Awareness Program, PR-1c: Construction Monitoring, and PR-1d: Preparation and Curation of Recovered Fossils)

Impacts Remaining After Mitigation: Less than significant.

4.19.3.15 Traditional Cultural Properties

This section has been revised since the Draft EIS/EIR based on the identification of the LPA. As noted in Section 4.19.3.14, Draft EIS/EIR Mitigation Measure CR-2 (Treatment of Known Significant Archaeological Resources) was removed from the Final EIS/EIR because it does not apply to the LPA. In the Draft EIS/EIR, Mitigation Measure TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources) referenced elements of Mitigation Measure CR-2 if an unanticipated discovery of a TCP/TCR occurred during construction (i.e., preparation of a treatment plan). For the Final EIS/EIR, Mitigation Measure TCR-2 was updated to include those elements. The impact conclusions in the Draft EIS/EIR remain unchanged for the Final EIS/EIR, including with respect to Alternative 3.

Locally Preferred Alternative

No TCPs have been identified in the direct APE associated with the LPA. Therefore, construction of the LPA will not result in effects to known TCPs. Construction of the LPA will involve substantial ground disturbance with the potential to alter, remove, or destroy previously undocumented TCPs within the APE. Expected ground-disturbing activities include grading, excavation, and trenching. If previously undocumented TCPs are directly altered, removed, or destroyed by construction, an adverse effect will occur.

Design Option: Close 186th Street

In the vicinity of 186th Street, construction activities associated with the LPA with the design option would be substantially similar to those for the LPA without the design option. No TCPs have been identified in the APE in the vicinity of the design option. Construction of the LPA with the design option would not result in effects to known TCPs. Similar to construction of the LPA without the design option, ground-disturbing activities associated with construction of the LPA with the design option have the potential to alter, remove, or destroy previously undocumented TCPs, if present. If unanticipated TCPs are directly altered, removed, or destroyed by construction of the design option, an adverse effect would occur.

Maintenance and Storage Facility

No TCPs have been identified in the APE in the vicinity of the MSF site. Construction of the MSF will not result in effects to known TCPs. Ground-disturbing activities associated with construction of the MSF have the potential to alter, remove, or destroy previously undocumented TCPs, if present. If unanticipated TCPs are directly altered, removed, or destroyed by construction of the MSF, an adverse effect will occur.

United States Army Corps of Engineers Facilities

No TCPs have been identified in the APE in the vicinity of the USACE facilities. Activities associated with construction of the LPA will not result in effects to known TCPs within USACE facilities. It is possible that previously undocumented TCPs could be encountered during construction activities within USACE facilities. The alteration, removal, or destruction of unknown TCPs as a result of construction within USACE facilities will represent an adverse effect for the purposes of Section 106, if such resources are present.

Project Measures and Mitigation Measures

Ground-disturbing activities associated with construction of the LPA could result in adverse impacts to potentially unknown TCPs, if present. These adverse impacts will be reduced with implementation of Mitigation Measure TCR-1 (Native American Monitoring) and TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources) detailed below. Mitigation Measures CR-1 (Development of Cultural Resources Monitoring and Discovery Program) and CR-2 (Treatment of Known Significant Archaeological Resources) detailed in Section 4.19.3.14 would also be implemented. As noted in CR-1 (Development of Cultural Resources Monitoring and Discovery Program), human remains will be handled in accordance with existing regulations, including the State of California Health and Safety Code Section 7050.5.

TCR-1: Native American Monitoring. Because of the potential to encounter previously undocumented Traditional Cultural Properties and/or Tribal Cultural Resources, a Native American monitor will be retained by the Los Angeles County Metropolitan Transportation Authority (Metro) to monitor project-related, ground-disturbing construction activities (e.g., grading, excavation, drilling, trenching) that occur within areas that are identified as having a moderate-to-high potential for containing prehistoric Native American remains, as specified in the Cultural Resources Monitoring and Discovery Plan (CRMDP) and as described in Mitigation Measure CR-1 (Development of Cultural Resources Monitoring and Discovery Program). The appropriate Native American monitors will be selected based on the tribal consultation under Assembly Bill 52 and Section 106. Monitoring staff will be identified in the CRMDP. Monitoring procedures and the role and responsibilities of the Native American monitor will be outlined in the CRMDP. In the event that the Native American monitor identifies a cultural resource of Native American origin during construction, the monitor will be given the authority to temporarily halt ground-disturbing activities (if safe) within 50 feet (15 meters) of the discovery to investigate the find and contact the Project Archaeologist and Metro. The Native American monitor and consulting tribe(s) will be provided an opportunity to participate in the documentation and evaluation of the find and development of treatment, as necessary.

TCR-2: Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources. In the event that cultural resources of Native American origin are identified during construction, all earth-disturbing work within a 50-foot radius of the find will be temporarily

suspended or redirected until an archaeologist has evaluated the nature and significance of the find and an appropriate Native American representative, based on the nature of the find, is consulted. The specific procedures to be followed in the event of an unanticipated discovery of cultural resources of Native American origin will be identified in the CRMDP, as described in Mitigation Measure CR-1 (Development of Cultural Resources Monitoring and Discovery Program). If Metro determines that the resource is a Traditional Cultural Property and/or Tribal Cultural Resource and is found significant under CEQA/Section 106, a treatment plan will be prepared and implemented in accordance with state guidelines and in consultation with Native American groups, as described below.

The treatment plan will be developed by a Secretary of the Interior qualified archaeologist in consultation with the State Historic Preservation Officer (SHPO) and with Native American contacts, as applicable. Metro will be responsible for ensuring that the treatment plan is developed and that consultation with stakeholders (e.g., tribes, SHPO) is completed. The treatment plan will be developed to ensure treatment of archaeological historic properties/historical resources meets the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation, the California Office of Historic Preservation's Archaeological Resources Management Report, Recommended Contents and Formats (1989), the Guidelines for Archaeological Research Design (1991), the Advisory Council on Historic Preservation's publication Treatment of Archaeological Properties: A Handbook, and the Department of the Interior's Guidelines for Federal Agency Responsibility under Section 106 of the National Historic Preservation Act.

The treatment plan will include the following: procedures required should archaeological historic properties/historical resources be determined to no longer be extant, methods for avoidance should avoidance be determined feasible upon discovery, and Phase III data recovery methods in the event that avoidance is infeasible. Phase III data recovery methods within the treatment plan would include, but not be limited to, research questions to be addressed by the study of each site, a description of methods including excavation methods, data analysis, reporting requirements, and final disposition of recovered materials. The Phase III data recovery methods will also identify the thresholds at which point data redundancy is achieved. Phase III data recovery will ensure each site is adequately documented in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The treatment plan will be implemented when a determination is made that a property/resource cannot be avoided and will be adversely affected/significantly impacted by the Project.

California Environmental Quality Act Determination

Threshold TCR-CON-1: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- ***a) Listed or eligible for listing in the California Register of Historical Resources, or a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***
- ***b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subsection (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

No Project Alternative

Under the No Project Alternative, the environmental setting within the Affected Area for tribal cultural resources would remain in its current condition and no ground disturbance would occur. No physical alteration of known or unanticipated TCRs would take place under the No Project Alternative. The No Project Alterative would result in no impacts to known or unanticipated TCRs.

Locally Preferred Alternative

No TCRs have been identified in the APE associated with the LPA. Therefore, construction of the LPA will not result in impacts to known TCRs. Ground-disturbing activities associated with construction would have the potential to alter, remove, or destroy unanticipated TCRs, if present. If unanticipated TCRs are directly altered, removed, or destroyed by construction of the LPA, a significant impact will occur.

Mitigation Measures: TCR-1 (Native American Monitoring), TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources), and CR-1 (Development of Cultural Resources Monitoring and Discovery Program).

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

In the vicinity of 186th Street, construction activities associated with the design option would be substantially similar to those for the LPA without the design option. No TCRs have been identified in the APE in the vicinity of the design option. Therefore, similar to construction of the LPA without the design option, construction of the LPA with the design option would not result in impacts to known TCRs. Ground-disturbing activities associated with construction would have the potential to alter, remove, or destroy unanticipated TCRs, if present. If unanticipated TCRs are directly altered, removed, or destroyed by construction of the design option, a significant impact would occur.

Mitigation Measures: TCR-1 (Native American Monitoring), TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources), and CR-1 (Development of Cultural Resources Monitoring and Discovery Program).

Impacts Remaining After Mitigation: Less than significant.

Maintenance and Storage Facility

No TCRs have been identified in the APE in the vicinity of the MSF. Therefore, construction of the MSF will not result in impacts to known TCRs. Ground-disturbing activities associated with construction will have the potential to alter, remove, or destroy unanticipated TCRs, if present. If unanticipated TCRs are directly altered, removed, or destroyed by construction of the MSF, a significant impact will occur.

Mitigation Measures: TCR-1 (Native American Monitoring), TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources), and CR-1 (Development of Cultural Resources Monitoring and Discovery Program).

Impacts Remaining After Mitigation: Less than significant.

4.19.3.16 Parklands and Community Facilities

Analysis of impacts to recreational and community facilities during construction considers construction-related acquisitions, air quality, noise and vibration, and access and parking. Further discussion regarding potential construction effects as they relate to parklands, recreational facilities, bike facilities, and community facilities are provided in the following reports and the corresponding sections of this Final EIS/EIR: the *West Santa Ana Branch Transit Corridor Project Final Transportation Impact Analysis Report* (Metro 2024s), the *West Santa Ana Branch Transit Corridor Project Final Displacements and Acquisitions Impact Analysis Report* (Metro 2024m), the *West Santa Ana Branch Transit Corridor Project Final Section 4(f) and 6(f) Impact Analysis Report* (Metro 2024l), the *West Santa Ana Branch Transit Corridor Project Final Air Quality Impact Analysis Report* (Metro 2024i), the *West Santa Ana Branch Transit Corridor Project Final Noise and Vibration Impact Analysis Report* (Metro 2024j), and the *West Santa Ana Branch Transit Corridor Project Final Communities and Neighborhoods Impact Analysis Report* (Metro 2024n).

This section has been revised based on comments received on the Draft EIS/EIR and to reflect identification of the LPA, inclusive of refinements. Revisions in this section reflect the Final EIS/EIR impact analysis updates for construction-related acquisitions and noise and vibration. The number of TCEs required for construction of the LPA and the number of community facilities that may be temporarily affected by construction noise and vibration has been reduced since the Draft EIS/EIR. Additionally, as noted in Section 4.19.3.5, the emissions analysis for the LPA is based on an updated conceptual construction schedule. The impact conclusions presented in the Draft EIS/EIR related to parklands and community facilities remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. The design option would not result in construction-related adverse effects or significant impacts related to parklands, bike facilities, and community facilities during construction.

Locally Preferred Alternative

Acquisitions: Property acquisitions for construction or TCEs will be located primarily on Metro-acquired properties consisting of commercial, industrial, or vacant properties. As discussed in Section 4.16.3.2, Parklands and Community Facilities, a 40-foot-wide section in the northern portion of Paramount Park is owned by Metro and leased to the City of Paramount for parking and landscaping. Construction of the alignment will require the termination of the lease agreement between Metro and the City of Paramount, which will remove approximately 20 of approximately 300 on-site parking spaces used by park patrons. The reversion of the leased parking area does not require property acquisition within the

Paramount Park boundary. Park recreational facilities and buildings will not be disturbed, and the general function of Paramount Park will remain unchanged. Construction sites will not be located on and will not permanently disrupt function or access to parklands, recreational facilities, bike facilities, and community facility properties. Therefore, adverse effects related to property acquisitions for construction or TCEs in the context of parklands and community facilities will not occur.

Air Quality: As discussed in Section 4.19.3.5 (Construction-related Air Quality), construction activities will temporarily expose sensitive receptors to air pollutants. However, construction-related emissions will be lower than the SCAQMD regional mass daily thresholds and will not result in adverse effects to air quality. Construction activities will comply with applicable rules and regulations and adhere to BMPs to control emissions and exposure to air pollution. As listed in Table 4.16.1 in Section 4.16.2 (Parklands and Community Facilities), approximately 7 recreational facilities of the 17 total are within 80 feet of construction site boundaries (measured as the distance from the LPA). Nonetheless, based on the conservative assumptions that sensitive receptors will be located within 80 feet of construction site boundaries and modeled construction assumptions for regional and localized emissions, construction-related activities will not expose sensitive receptors, such as parklands, recreational facilities, bike facilities, and community facility users, to air pollutants, and adverse effects will not occur. Therefore, adverse effects in regard to construction-related air quality in the context of parklands and community facilities will not occur.

Noise and Vibration: As discussed in Section 4.19.3.7 (Construction-related Noise and Vibration), based on the noise and vibration analysis prepared for the LPA, construction noise and vibration may temporarily affect 26 community facilities within 500 feet of construction activities; however, it was determined that no parklands or recreational facilities will be affected by construction noise. Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) will be implemented during construction to reduce construction noise and vibration impacts to the extent feasible and where applicable. With mitigation, vibration impacts during construction will not occur, but construction noise will still likely exceed the FTA construction noise criteria. Impacts related to noise will be temporary and are not anticipated to reach noise levels that will inhibit use of parklands, recreational facilities, and community facilities.

Access and Parking: For the safety of pedestrians, bicyclists, and construction workers, construction-related traffic, sidewalk and bike facility detours (e.g., Paramount and Bellflower Bike Trails), and lane closures could temporarily affect access and parking for parklands, recreational facilities, and community facilities. However, access to parklands, recreational facilities, and community facilities will be maintained to the extent practicable. Construction will not affect parking for parklands, recreational facilities, bike facilities, and community facilities, except for the Metro-owned section in the northern portion of Paramount Park. As discussed above, the termination of the lease agreement between Metro and the City of Paramount for the 40-foot-wide section of the Metro-owned ROW used for parking and landscaping in Paramount Park will result in the return of the section to Metro and the removal of approximately 20 of approximately 300 on-site parking spaces currently used by park patrons. The remaining on-site parking (approximately 280 parking spaces) will be maintained to the extent practicable, and off-site parking along Paramount Boulevard will not

be affected; no replacement parking is proposed. With the potential loss of on-site parking and circulation issues during construction at Paramount Park, impacts related to parking, circulation, and access could occur at the park.

Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access, coordinate construction activities to minimize construction impacts, and provide detour and informational signage to the public to minimize effects to parklands, recreational facilities, bike trails, and community facilities to the extent practicable. As construction activities will be temporary, barriers around construction activities and staging areas will be removed upon completion of construction, and temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions once construction is completed. Under NEPA, with the implementation of mitigation, the LPA will not result in adverse effects related to parklands and community facilities during construction.

Design Option: Close 186th Street

In the vicinity of 186th Street, construction activities associated with the design option would be substantially similar to those for the LPA without the design option. Construction activities for the design option would not be located on or permanently disrupt parklands, recreation facilities, bike facilities, and community facility properties. Similar to the LPA without the design option, Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), and COM-1 (Construction Outreach Plan) would be implemented during construction of the LPA with the design option to the extent feasible and where applicable. The mitigation measures will minimize adverse effects related to noise and vibration, and to maintain access and parking at parklands, recreational facilities, and bike facilities. As construction activities would be temporary, barriers around construction activities and staging areas would be removed upon completion of construction; and temporary street, lane, and bike path detours and closures would be returned to preconstruction conditions once construction is completed. Therefore, with the implementation of mitigation, construction of the LPA with the design option would not result in adverse effects related to parklands, bike facilities, and community facilities.

Maintenance and Storage Facility

Construction activities for the MSF site will require two full property acquisitions. The MSF site is city-owned, designated as Open Space by the City of Bellflower, and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX). The current use is not a public parkland or recreational facility. Temporary construction activities will be located primarily on-site. Construction activities will not be located on public parklands, recreational facilities, or community facility properties, and will not disrupt the essential functions of any such facilities. In addition, construction activities will not disrupt the function or access of parklands, recreational facilities, or community facilities located north of Somerset Boulevard and east of the MSF. Similar to the LPA, Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), and COM-1 (Construction Outreach Plan) to the extent feasible and practicable and where applicable. The mitigation measures will be implemented to minimize adverse effects related to noise and vibration, and to maintain access and parking at parklands, recreational facilities, and

bike facilities. As construction activities will be temporary, barriers around construction activities and staging areas will be removed upon completion of construction, and temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions once construction is completed. Under NEPA, with the implementation of mitigation, the MSF will not result in adverse effects related to parklands and community facilities during construction.

U.S. Army Corps of Engineers Facilities

LPA construction activities at or near the USACE facilities will not be located on or permanently disrupt parklands, recreation facilities, bike facilities, and community facility properties. Construction of the new bridge crossings will be located in a footprint on the existing facilities similar to the current footprints.

Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), and COM-1 (Construction Outreach Plan) will be implemented at the USACE facilities, similar to the rest of the LPA alignment, to the extent feasible and practicable and where applicable. The mitigation measures will minimize adverse effects related to noise and vibration, and to maintain access and parking at nearby parklands, recreational facilities, and bike facilities. Construction activities will be temporary; barriers around construction activities and staging areas will be removed upon completion of construction; and temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions once construction is completed. Therefore, with the implementation of mitigation, construction activities at or near the USACE facilities will not result in adverse effects related to parklands and community facilities during construction.

Project Measures and Mitigation Measures

No project measures are required. Refer to Section 4.19.3.2 (Construction-related Communities and Neighborhoods) for Mitigation Measure COM-1 (Construction Outreach Plan). Refer to Section 4.19.3.7 (Construction-related Noise and Vibration) for Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices, VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources).

California Environmental Quality Act Determination

Threshold PARK-CON-1: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable standards for any park or recreational facility?

No Project Alternative

Under the No Project Alternative, the LPA would not be constructed and existing land uses would remain unchanged unless identified for change in published long-range planning documents; no properties would be acquired for the LPA; no structures along the project alignment would be demolished; and no new structures would be constructed. Bike paths proposed within or along the rail ROW could be built and implemented within the rail ROW

or along the public ROW that parallel the rail ROW. Therefore, temporary construction activities would not occur, and no impact would occur.

Locally Preferred Alternative

Construction of the LPA will result in temporary activities and require construction staging, materials stockpiling, hauling of dirt and materials, temporary street and lane closures, and TCEs. Temporary construction activities will be located within the public ROW and/or rail ROW or on sites acquired for construction activities. Construction activities will not be located on, and will not permanently disrupt, parklands, recreational facilities, bike facilities, and community facility properties.

Pedestrian and bicycle access routes in the construction area will be temporarily disrupted during construction. In addition, off-street parking that may be used by parkland, recreational facility, bike facility, and community facility visitors may be temporarily removed for the duration of construction. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access to parklands, recreational facilities, and community facilities during construction; and construction detour signage, barriers, and fencing will be provided. As construction activities will be temporary, the LPA will not result in permanent impacts to parklands, recreation facilities, community facilities, and bike facilities that will require the need for new facilities. Therefore, impacts will be less than significant with mitigation.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan).

Impacts Remaining After Mitigation: Less than significant impact.

Design Option: Close 186th Street

Construction activities for the design option would not be located on or permanently disrupt parklands, recreational facilities, bike facilities, and community facility properties. Similar to the LPA without the design option, COM-1 (Construction Outreach Plan) would maintain access and parking at parklands, recreational facilities, and bike facilities during construction of the LPA with the design option. As construction activities would be temporary, barriers around construction activities and staging areas would be removed upon completion of construction; and temporary street, lane, and bike path detours and closures would be returned to preconstruction conditions once construction is completed. Therefore, with the implementation of mitigation, construction of the LPA with the design option would not result in adverse effects related to parklands and community facilities that would require the need for new facilities. Therefore, impacts would be less than significant with mitigation.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan).

Impacts Remaining After Mitigation: Less than significant impact.

Maintenance and Storage Facility

Construction activities for the MSF site will require two full property acquisitions. The MSF site is city-owned, designated as Open Space by the City of Bellflower, and currently leased by the city for use as a recreational commercial business (Hollywood Sports Park and Bellflower BMX) and is not a public parkland or recreational facility. Similar to the LPA, Mitigation Measure COM-1 (Construction Outreach Plan) will maintain access to parklands, recreational facilities, and community facilities during construction; and construction detour

signage, barriers, and fencing will be provided. Therefore, impacts will be less than significant with mitigation.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan).

Impacts Remaining After Mitigation: Less than significant impact.

Threshold PARK-CON-2: Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Project Alternative

No project-related construction activities would occur under the No Project Alternative. Therefore, no construction impacts would occur, and mitigation would not be required.

Locally Preferred Alternative, Design Option, and Maintenance and Storage Facility

Construction of the LPA with or without the design option, and MSF site will be temporary and will not generate permanent residences that will increase the use of existing neighborhood and regional parks or other recreational facilities resulting in accelerated physical deterioration of the facilities. Construction workers may use nearby parks or recreational facilities during lunchtime breaks, but such use will be temporary and nominal. Therefore, impacts will be less than significant, and mitigation will not be required.

Threshold PARK-CON-3: Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Project Alternative

No project-related construction activities would occur under the No Project Alternative. The No Project Alternative would not include the development of recreational facilities or the construction or expansion of recreational facilities. Therefore, no construction-related impacts would occur, and mitigation would not be required.

Locally Preferred Alternative, Design Option, and Maintenance and Storage Facility

Construction of the LPA with or without the design option, and MSF site will be temporary and will not include the construction of recreational facilities or require the expansion of existing recreational facilities. Therefore, no impacts will occur, and mitigation will not be required.

4.19.3.17 Economic and Fiscal Impacts

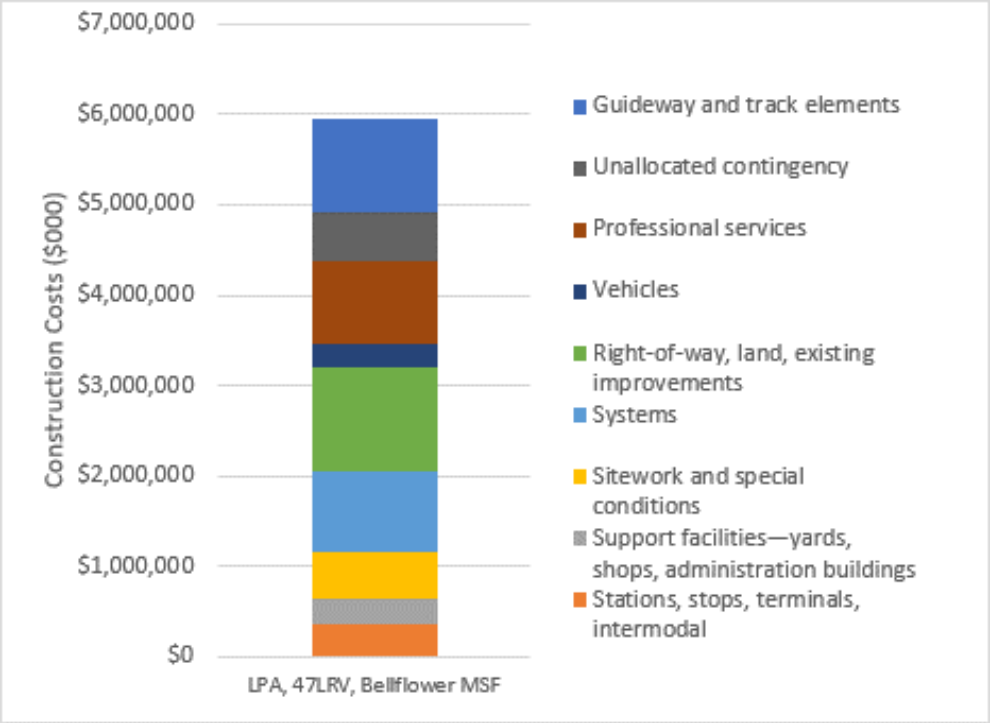
Since publication of the Draft EIS/EIR, construction spending impacts were updated to reflect updated cost estimates for the LPA. Analysis was also updated to reflect changes to construction staging areas. Based on comments received on the Draft EIS/EIR, a discussion related to compliance with existing policies that support job creation and workforce development was added to the "Regional Economic Construction Impacts" section. The impact conclusions presented in the Draft EIS/EIR regarding economic and fiscal impacts during project construction remain unchanged in this Final EIS/EIR, including with respect to Alternative 3. Estimated job creation has been updated in accordance with an update in the *West Santa Ana Branch Transit Corridor Project Locally Preferred Alternative Capital Cost Report* (Metro 2024x).

Locally Preferred Alternative

Regional Economic Construction Impacts

Construction of the LPA will represent a substantial capital investment in the regional economy that will increase employment, earnings, and economic output during the construction period. Figure 4.19-1 presents the construction costs for the LPA. The LPA is estimated to cost $5.9 billion (2023 dollars).

Figure 4.19-1. Construction Cost Estimate for the LPA



Source: Metro 2024x

The degree to which construction of the LPA will provide an economic stimulus to the region depends on the source(s) of project funding. Only those economic effects that are attributable to funds that are made available for the LPA (new or federal money) will be considered as project-related. Funds from local sources, such as sales tax revenue from Measures M and R, are economic transfers that would have been spent in the regional economy with or without construction of the LPA. The amount of new or federal funding sources are not known at this time, thus the economic impacts associated with construction spending are estimated using the total project cost. Additional information on financing options is provided in Appendix F, Funding and Financing for the West Santa Ana Branch Project.

To estimate the regional impacts associated with the LPA, Regional Input-Output Modeling System II final-demand multipliers from the Bureau of Economic Analysis for the construction and professional services industry were applied to the amount of new funding that will be used for capital expenditures. Light rail vehicle costs are not included because vehicles will likely be purchased from outside the region. ROW costs are also not included because the costs for real estate acquisition and relocation, as well as "loss of business" compensation, result in minimal economic output or employment impacts. Multipliers for

the greater Los Angeles area were used (Bureau of Economic Analysis 2017). The results of this analysis are summarized in Table 4.19.23.

Table 4.19.23. Summary of Economic Impacts during Construction of the LPA

Impact Category	LPA
Total Capital (2025$), billion[1,2,3]	$4.8
Output ($billion)	$9.6
Earnings ($billion)	$2.9
Employment (jobs)[4]	54,700

Sources: BEA 2017; Metro 2024x
Notes: [1] Inflated to mid-point of construction (2029) using historical California Construction Cost Index.
[2] Assumed 90 percent of total construction costs occur within LA County. The greater LA economy is expected to support the most labor and materials needed for the LPA.
[3] Excludes right-of-way and vehicle costs.
[4] Compared to the No Build Alternative; a job is defined as one job for one person for one year.
LA = Los Angeles; LPA = Locally Preferred Alternative

The construction spending effects associated with the LPA will result in an estimated $9.6 billion in overall economic activity (year of expenditure dollars) for the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area over the approximate 8-year construction period. The economic activity includes direct, indirect, and induced activity. Direct impacts include employment and income resulting from construction of the LPA. Indirect effects will include indirect employment resulting from the purchase of goods and services by firms involved with construction, and induced employment resulting from construction workers spending their income within the region. It is estimated that construction-related spending will provide regional economic benefits by generating approximately $2.9 billion in additional wages and salaries for households and by creating 54,700 person-year jobs for all industries in the region during the construction phase of the LPA. A person-year job is defined as one job for one person for one year. If a job employs a single person for 3 years, it will equal three person-year jobs. Based on the predicted regional economic benefits, from both direct and indirect sources, along with the creation of person-year jobs, the potential impacts will be beneficial, and no adverse effects will occur.

Metro might pursue a public-private partnership to fund and operate the LPA. Under the public-private partnership scenario, impacts are expected to be similar; however, the construction and operation schedule would likely be accelerated.

Metro will continue to comply with existing policies that support job creation and workforce development, including the Labor Agreement and Construction Careers Policy and the Local Hire Program. Metro will also encourage construction employment and training opportunities during construction of the LPA to those who reside in economically disadvantaged areas.

Localized Project Impacts

Construction of the LPA may result in lost revenues for businesses and result in short-term property value reductions. Those effects would be caused by construction-related activities, such as the following:

- Temporary elimination of parking

- Traffic congestion, changes in access and reduced visibility from the street (e.g., establishing a detour that requires customers to take longer or less familiar routes to a business, removing a left-hand turn lane into a shopping center, or eliminating the "street appeal" from a business that depends on drive-by or walk-up sales)
- Increased noise and dust, and perceived changes in visual quality (e.g., glare from nighttime construction lighting)

Retail and personal services businesses that depend on convenient access and an aesthetically pleasing experience for customers are most likely to experience short-term adverse impacts during construction.

Since the release of the Draft EIS/EIR, project refinements have been made that affect construction activities and locations. Two construction staging areas have been relocated from private property away from businesses and residences onto rail ROW in response to public comments, and one construction laydown area was added in an industrial area. Businesses near the two construction staging areas that were relocated may experience a reduction in disruption to business activities compared to the Draft EIS/EIR, as both laydown areas are now located within rail ROW and off private property. Businesses in the industrial area near the new laydown area may experience an increase in disruption to business activities compared to the Draft EIS/EIR.

Properties near the alignment will experience a temporary increase in noise, vibration, and visual effects related to construction activities. These effects may have an economic effect on some local businesses because potential customers may be discouraged from patronizing businesses in congested areas as a result of both real and perceived inconvenience factors. Industrial businesses may experience increased transportation costs because of construction-related delays or detours. While some individual businesses may have negative construction-related effects, some businesses may benefit from spending by construction workers at local retail establishments.

Implementation of Mitigation Measures COM-1 (Construction Outreach Plan) and TRA-21 (Loss of Parking [Construction]) will reduce these potential impacts, and no adverse effects will result. Metro could also use the Business Interruption Fund to assist small businesses along the LPA that are affected by the construction activities associated with the LPA. The Business Interruption Fund is approved by the Metro Board of Advisors on a per-project basis after certification of the Final EIS/EIR.

Construction of the LPA will include aerial and at-grade features that will impact residences and businesses near stations, construction staging areas, and the LPA alignment. Table 4.19.24 presents the stations along the LPA and the construction-related impacts anticipated at each station. While some individual businesses will likely experience adverse effects associated with construction activities, implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize impacts to the overall economy. Therefore, no adverse construction-related effects will occur.

Table 4.19.24. LPA: Construction-Related Economic Impacts at Station Locations

Station	Type of Proposed Station	Impacts
Slauson/A Line	Aerial	Construction will occur parallel to the existing Metro A (Blue) Line. Construction-related traffic and temporary road closures could cause traffic delays on Slauson Ave, Long Beach Ave, Randolph St, and adjacent streets. Noise, dust, and vibration nuisances will also be present and may cause potential nuisance to customers. Some businesses could experience an increase in sales as construction workers spend at local stores. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize the potential impacts.
Pacific/ Randolph	At-grade	Construction will occur between the eastern and western lanes of Randolph St. Construction could increase delays and congestion along Randolph St and adjacent streets. Many retail businesses in this area rely on drive-by traffic for sales. Potential customers may avoid the construction area, which could affect sales at some businesses. Conversely, some businesses could experience an increase in sales as construction workers spend at local stores. Construction-related nuisances such as noise, dust, and vibration could also deter customers from visiting the area. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize the potential impacts.
Florence/Salt Lake	At-grade	Noise, dust, and vibration could impact some nearby businesses and residences. Some businesses could experience an increase in sales as construction workers spend at local stores. Impacts to retail sales are expected to be negligible with implementation of Mitigation Measure COM-1 (Construction Outreach Plan).
Firestone	Aerial	Construction will result in business displacements for a proposed parking area and station platform. Construction could temporarily increase delays and congestion along Atlantic Ave, Firestone Blvd, and adjacent streets because roads may be temporarily closed or access altered. Noise, dust, and vibration nuisances could also affect businesses near the construction area. Most businesses near the construction area are commercial and industrial uses that do not rely as much on drive-by traffic to generate sales revenue.
Gardendale	At-grade	Construction could increase delays and congestion along Gardendale St and adjacent streets because roads may be temporarily closed or access altered. Converting Dakota Ave to one-way and installing signalized intersections may also cause delays. Noise, dust, and vibration nuisances could also impact businesses near the construction area. Some businesses could experience an increase in sales as construction workers spend at local stores. Overall impacts to retail sales are expected to be negligible because businesses are commercial/industrial uses that do not rely heavily on drive-by traffic.

Station	Type of Proposed Station	Impacts
I-105/C Line	At-grade	Construction will result in business displacements for parking and rail alignment. Construction will require temporary freeway and frontage road closures during off-peak hours for the demolition of the existing freight bridge and construction of new bridges. Noise, dust, and vibration nuisances could also have short-term impacts on property values of nearby residences.
Paramount/ Rosecrans	Aerial	Construction will increase truck traffic and may cause delays and congestion along Rosecrans Ave, Paramount Blvd, and adjacent streets. Construction-related nuisances (noise, dust, and vibration) could also impact businesses near the construction area. Some businesses could experience an increase in sales as construction workers spend at local stores. Business displacements for a parking facility are anticipated. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize potential impacts.
Bellflower	At-grade	Construction will result in a business displacement for parking. Construction will increase delays and congestion along Bellflower Blvd, Pacific Ave, and adjacent streets because roads may be temporarily closed, or access may be temporarily altered. Noise, dust, and vibration nuisances could also impact residents and businesses near the construction area. Some businesses could experience an increase in sales as construction workers spend at local stores. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize potential construction-related impacts.
Pioneer	At-grade	Construction will result in residential and business displacements for parking. Construction could increase delays and congestion along Pioneer Blvd, 187th St, and adjacent streets because roads may be temporarily closed or access may be temporarily altered. Noise, dust, and vibration nuisances could also impact businesses and residences near the construction area. Some businesses could experience an increase in sales as construction workers spend at local stores. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will minimize potential construction-related impacts.

Source: Prepared for Metro by Jacobs in 2020
Note: I = Interstate

Design Option: *Close 186th Street*

The localized economic impacts for the LPA with the design option would be substantially similar to the economic impacts under the LPA without the design option, as described in Section 4.19.3.17. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) would minimize construction-related impacts.

Maintenance and Storage Facility Site

The MSF site in the City of Bellflower is on a city-owned property currently leased to the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX. Construction of the MSF will permanently displace this business. Land uses surrounding the property include single-family and multifamily residential uses, mobile home communities, and industrial and commercial uses. Construction of the MSF will create noise, dust, and construction-related truck trips. Impacts to the surrounding land uses are expected to be minimal.

The affected business will be eligible for compensation as provided by federal and state law under the Uniform Act and California Relocation Act.

Project Measures and Mitigation Measures

No project measures are required during construction. To address the potential impacts to businesses and residences as a result of construction of the LPA, Mitigation Measures COM-1 (Construction Outreach Plan) (described in Section 4.19.3.2 [Construction-related Communities and Neighborhoods]) and TRA-21 (Loss of Parking [Construction]) (described in Section 3.7.3.6 in Chapter 3, Transportation) will be implemented, and impacts will be reduced to a less than significant level.

U.S. Army Corps of Engineers

The economic and fiscal analysis is not relevant to USACE facilities.

California Environmental Quality Act Determination

While the Appendix G Checklist in the CEQA Guidelines does not specify economic thresholds to be analyzed, the following questions are presented as relevant economic issues to be considered under CEQA Guidelines and to determine whether significant impacts would result from implementation of the No Project Alternative and the LPA.

Threshold ECON-CON-1: Result in substantial impacts to regional mobility and connectivity?

No Project Alternative

Under the No Project Alternative, no construction activities would occur and, therefore, there would be no impacts to mobility and connectivity. Therefore, mitigation would not be required.

Locally Preferred Alternative

Construction activities for the LPA will likely result in access modifications and potential delays on the transportation network that will result in temporary significant impacts to the surrounding communities. Mitigation Measures COM-1 (Construction Outreach Plan) and TRA-21 (Loss of Parking [Construction]) will be implemented to address impacts to mobility and connectivity. Implementation of these two measures during construction activities will address the potential construction impacts to businesses and residences located near construction areas and will minimize temporary effects.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan) and Mitigation Measure TRA-21 (Loss of Parking [Construction])

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

The construction activities for the LPA with the design option would be substantially similar to the LPA without the design option. Mitigation Measures COM-1 (Construction Outreach Plan) and TRA-21 (Loss of Parking [Construction]) would be implemented to address impacts to mobility and connectivity. Implementation of these two measures during construction activities would address the potential construction impacts to businesses and residences located near construction areas associated with the LPA with the design option and would minimize temporary effects.

Mitigation Measures: Mitigation Measure COM-1 (Construction Outreach Plan) and Mitigation Measure TRA-21 (Loss of Parking [Construction])

Impacts Remaining After Mitigation: Less than significant.

Maintenance and Storage Facility

The construction activities for the MSF will create noise, dust, and construction-related truck trips. Impacts to the surrounding land uses are expected to be minimal, and mitigation will not be required.

Threshold ECON-CON-2: Result in substantial construction-related impacts to businesses and residences that would result in physical deterioration of the existing environment?

No Project Alternative

Under the No Project Alternative, no construction activities would occur, and there would be no impacts to businesses and residences. Therefore, mitigation measures are not required.

Locally Preferred Alternative

Construction of the LPA will have beneficial economic and fiscal impacts related to direct and indirect effects from construction spending. While the construction spending effects will be a positive for the overall regional economy, construction of the LPA will have potential impacts on businesses and residences near active construction areas. The LPA will require additional ROW for the alignment, construction staging areas, and parking areas, resulting in displacements of businesses and residences. Affected property owners and tenants will be eligible for compensation or relocation assistance in accordance with state and federal law. Property owners will be compensated based on the highest and best use of the property.

Construction activities will also cause temporary road closures, modified access, and construction-related nuisances (noise, dust, and vibration) that may deter potential customers from visiting the area while the LPA is under construction. The temporary construction-related impacts will not lead to physical deterioration of the existing environment or "urban decay." Implementation of COM-1 (Construction Outreach Plan) and TRA-21 (Loss of Parking [Construction]), identified to address impacts under NEPA, will further reduce impacts and minimize economic impacts.

Design Option: Close 186th Street

The LPA with the design option would have similar impacts as the LPA without the design option. The temporary construction-related impacts would not lead to physical deterioration of the existing environment or "urban decay." Implementation of COM-1 (Construction

Outreach Plan) and TRA-21 (Loss of Parking [Construction]), identified to address impacts under NEPA, would further reduce impacts and minimize economic impacts.

Maintenance and Storage Facility

The MSF in the City of Bellflower is on a city-owned property currently leased to the Hollywood Sports Paintball & Airsoft Park and Bellflower BMX. Construction of the MSF will displace this business. Land uses surrounding the property include single-family and multifamily residential, mobile home communities, and industrial and commercial properties. Construction of the MSF will create noise, dust, and construction-related truck trips. Potential short-term impacts to the property values of surrounding land uses are expected to be minimal. The temporary construction-related impacts will not lead to physical deterioration of the existing environment or "urban decay."

4.19.3.18 Safety and Security

This section describes the temporary construction safety and security impacts related to pedestrian, bicycle, and motorist safety, as well as security and prevention of crime and terrorism. Construction of the LPA will require the activities summarized in Section 4.19.2. Safety and security impacts will be minimized through compliance with the requirements of the Occupational Safety and Health Administration, the California Occupational Safety and Health Administration, the Manual on Uniform Traffic Control Devices, and Metro safety and security programs, which are designed to reduce potential impacts during construction.

No substantial edits were made to this section since the Draft EIS/EIR. The impact conclusions presented in the Draft EIS/EIR regarding safety and security during project construction remain unchanged in this Final EIS/EIR, including with respect to Alternative 3.

Locally Preferred Alternative

Pedestrian, Bicyclist, and Motorist Safety

Temporary construction-related activities and conditions that may affect pedestrian, bicyclist, and motorist safety include the following:

- Construction activities along the LPA related to excavation and construction of aerial structures, columns, stations, track, street improvements, and TPSS facilities
- Shallow excavation and construction activities along the centerline of streets throughout the alignment to install columns, utility relocations, and track and power facilities
- Activities at the construction equipment and materials staging and storage areas
- Movement of construction equipment and materials between staging and storage areas and construction areas
- Transportation of excavation debris along haul routes within communities
- Construction sites and staging areas where bystanders could suffer falls or other accidents

Construction of the LPA will also require lane closures; traffic detours; designated truck ingress, egress, and haul routes; and potential sidewalk and bicycle lane closures, which

could affect pedestrian, bicyclist, and motorist safety, as well as Safe Routes to School.[13] However, the LRT alignment will be constructed primarily along an existing rail ROW; therefore, impacts on pedestrian and bicyclist safety are expected to be minimal. Other impacts on pedestrian and bicyclist safety during construction of the LPA may potentially occur along the Los Angeles River Bike Path, Rio Hondo Bike Path, San Gabriel River Bike Path, Artesia Historic District Recreational Trails, or Bellflower-Paramount Bike Trail.

The existing pedestrian overcrossing at Paramount High School over the PEROW will be temporarily removed during construction of the LPA, and a new, replacement pedestrian bridge will be constructed as part of the LPA to maintain safe pedestrian connectivity at this location. A temporary detour route will be designated to provide safe access between the Paramount High School campuses during construction of the LPA.

The LPA will have temporary effects on pedestrians and bicyclists when construction requires temporary closure of sidewalks and bicycle facilities (refer to Table 3-34 in Chapter 3, Transportation, for the locations of these closures). There will also be temporary detours and temporary reductions in sidewalk width/length during construction. Alternate and safe detour routes will be provided during construction, will be coordinated with the local jurisdiction, and will meet Americans with Disabilities Act (ADA) requirements. Advance notices, signage, barriers, and fencing will be used to direct pedestrian, bicyclist, and motorist travel, thereby reducing the potential for temporary safety impacts.

Per Metro standard construction contract specifications, Metro and the construction contractor will develop a Construction Management Plan during final design and will implement the plan during construction. The Construction Management Plan will guide Metro and its contractor in communicating with the community, which will include communicating traffic control measures, construction activity schedules, and durations of operations and will further minimize potential safety impacts.

Pedestrian, bicyclist, and motorist safety is substantially similar for aerial and at-grade construction. Lane closures and detour routes will be provided for the public to safely navigate around construction activities, including access points and entrances to construction activity areas. Fencing and barriers will also be provided for all construction areas, including construction entrances, to prevent entry into an active construction site (staging, storage, mobilization, and active areas).

Implementing the aforementioned safety measures during construction of the LPA will minimize potential hazards to pedestrian, bicycle, and motorist safety. However, these same construction activities and the corresponding detour routes may interfere with or potentially block Safe Routes to Schools. Under NEPA, the LPA will result in adverse effects related to safety and security before Mitigation Measures SAF-2 (School District Coordination) and SAF-3 (Construction Site Measures) are implemented. After these mitigation measures are implemented, the LPA will not result in adverse effects related to safety and security.

[13] Safe Routes to School (https://www.metro.net/projects/srts/) is a program aimed at increasing the number of students who choose active (e.g., walking, bicycling, scooter, skateboarding) or shared (e.g., public transit, carpooling) modes of transportation to school by making it safer and more accessible to walk, bicycle, and/or take transit.

Emergency Response Services

The potential impacts from temporary construction activities on the ability of emergency response services (medical, police, and fire) to provide timely responses will be influenced by activities such as street or lane closures, roadway detours, increased traffic near emergency facilities or along emergency response routes, and construction staging plans.

In response to these potential conditions, fire and emergency medical services personnel have the ability to use onboard live mapping software that alerts drivers of construction activities that may impede travel times to and from the scene of an emergency. Emergency responders are also able to see which roadways are experiencing delays due to construction, accidents, or other events, and will be able to take alternate routes accordingly. Metro and the construction contractor will coordinate with police, medical, and fire services to develop construction staging plans and detours to provide appropriate public safety and security for the Metro system, employees, and surrounding communities. Emergency response service is substantially similar for aerial and at-grade construction. Lane closures and detour routes will be identified for emergency response to safely navigate around at-grade construction (including columns for aerial construction). Under NEPA, the LPA will not result in adverse effects on safety and security related to construction, and mitigation will not be required.

Security and Prevention of Crime and Terrorism

The potential for crime and terrorism during construction is related primarily to construction equipment and staging areas being targeted by potential thieves if not adequately secured. To reduce potential impacts, construction sites will include security features such as CCTV, onsite guards, security teams, and perimeter fencing to prohibit unauthorized individuals from accessing the construction area. However, crime from intentional acts against people and facilities cannot be completely eliminated. Under NEPA, the LPA will result in adverse effects related to safety and security before Mitigation Measure SAF-3 (Construction Site Measures) is implemented. After this mitigation measure is implemented, the LPA will not result in adverse effects related to safety and security.

Design Option: Close 186th Street

Pedestrian, Bicyclist, and Motorist Safety: The LPA with the design option is substantially similar to the LPA without the design option with regard to pedestrian, bicycle, and motorist safety, potential construction-related impacts, and effect determinations. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the LPA with the design option would result in adverse effects related to safety and security before Mitigation Measures SAF-2 (School District Coordination) and SAF-3 (Construction Site Measures) are implemented. After these mitigation measures are implemented, the LPA with the design option would not result in adverse effects related to safety and security.

Emergency Response Services: The LPA with the design option is substantially similar to the LPA without the design option with regard to emergency response services, potential impacts, and effect determinations. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the LPA with the design option would not result in adverse effects on safety and security related to construction, and mitigation would not be required.

Security and Prevention of Crime and Terrorism: The LPA with the design option is substantially similar to the LPA without the design option with regard to security and prevention of crime and terrorism, potential impacts, and effect determinations. The conclusions and effect determinations provided for the LPA without the design option also would apply to the LPA with the design option. Under NEPA, the LPA with the design option would result in adverse effects related to safety and security before Mitigation Measure SAF-3 (Construction Site Measures) is implemented. After this mitigation measure is implemented, the LPA with the design option would not result in adverse effects related to safety and security.

Maintenance and Storage Facility

Pedestrian, Bicyclist, and Motorist Safety: The MSF site will be closed to the public, and construction-related work will primarily occur at the site. The signalized intersection improvements for the MSF entrance at Somerset Boulevard and Bayou Avenue will be minor and will not result in adverse effects on safety and security. MSF site access will be strictly controlled by an onsite guard and security team, as well as barriers around the perimeter of the maintenance yard to prohibit unauthorized access into the yard. Under NEPA, the MSF will not result in adverse effects on safety and security related to construction, and mitigation will not be required.

Emergency Response Services: The MSF will not interfere with emergency response services because construction activities will not interfere or block public ROW for emergency response vehicles. Under NEPA, the MSF will not result in adverse effects on safety and security related to construction, and mitigation will not be required.

Security and Prevention of Crime and Terrorism: The MSF site will be closed to the public, and only construction-related work will occur at the site. MSF site access will be strictly controlled by an onsite guard and security team, as well as barriers around the perimeter of the maintenance yard to prohibit unauthorized access into the yard. Under NEPA, the MSF will not result in adverse effects on safety and security related to construction, and mitigation will not be required.

U.S. Army Corps of Engineers Facilities

Pedestrian, Bicyclist, and Motorist Safety: Construction of the LPA at the USACE facilities is substantially similar to construction of other portions of the alignment with regard to pedestrian and bicycle safety, potential construction-related impacts, and effect determinations. Pedestrian and bicyclist facilities adjacent to USACE facilities include the Los Angeles River Bike Path, Rio Hondo Bike Path, and the San Gabriel River Bike Path. The conclusions and effect determinations provided for the overall alignment also will apply to construction activities within USACE ROW. Under NEPA, the LPA will result in adverse effects related to safety and security before Mitigation Measures SAF-2 (School District Coordination) and SAF-3 (Construction Site Measures) are implemented. After these mitigation measures are implemented, construction of the LPA at USACE facilities will not result in adverse effects related to safety and security. Motorist safety is not applicable to USACE facilities.

Emergency Response Services: Construction of the LPA at the USACE facilities will not interfere with emergency response services because construction activities will not interfere or block public ROW for emergency response vehicles. Under NEPA, the LPA will not result

in adverse effects on safety and security related to construction, and mitigation will not be required.

Security and Prevention of Crime and Terrorism: Construction of the LPA at the USACE facilities is substantially similar to the LPA with regard to security and prevention of crime and terrorism, potential impacts, and effect determinations. The LPA will implement new structures over the Los Angeles River, the Rio Hondo channel, and the San Gabriel River in an aerial configuration via new LRT bridges. The bridges will be designed to incorporate CPTED principles. The design will restrict public access, preventing individuals from occupying Metro's facilities within USACE facilities. Under NEPA, the LPA will not result in adverse effects to security and prevention of crime and terrorism within USACE facilities and mitigation will not be required.

The conclusions and effect determinations provided for the overall alignment also will apply to construction activities at the USACE facilities. Under NEPA, the LPA will result in adverse effects related to safety and security before Mitigation Measure SAF-3 (Construction Site Measures) is implemented. After this mitigation measure is implemented, construction of the LPA at USACE facilities will not result in adverse effects related to safety and security.

Project Measures and Mitigation Measures

Project Measures

The following project measures will be required during project construction and, therefore, are included as part of the LPA to avoid, minimize, or reduce the potential for impacts on safety and security:

SAF PM-9 Service Providers

Metro will coordinate with police and fire service providers prior to and during construction.

SAF PM-10 MRDC Compliance

MRDC Compliance. The LPA will be designed and constructed in compliance with the MRDC or equivalent related to safety and security.

SAF PM-11 Fire/Life Safety Committee (Construction)

A Fire/Life Safety Committee for the LPA will be established per the MRDC or equivalent and FTA requirements. The committee will be tasked with addressing fire protection requirements for the construction of the LPA.

Mitigation Measures

The following mitigation measures will be implemented during project construction to avoid, minimize, or reduce the potential for impacts on safety and security.

SAF-2 (School District Coordination) Metro will coordinate with and notify the school districts and individual school administrators to maintain or modify safe and convenient pedestrian, bicycle, and bus routes to schools as necessary during and after construction. This also includes the publication and distribution of alternative pedestrian and bicycle route maps.

SAF-3 (Construction Site Measures) Metro's contractor will provide safety and security measures at the construction sites and staging areas. Security measures will include barriers for excavations, installation of temporary barriers around perimeters, security patrols, and appropriate signage and lighting. The contractor will provide a safety and security plan to Metro for review prior to the start of construction.

California Environmental Quality Act Determination

Threshold SAF-CON-1: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts for the No Project Alternative would occur, and mitigation would not be required.

Locally Preferred Alternative

Construction-related impacts of the LPA on emergency response plans or emergency evacuation plans could be caused by the following temporary construction activities:

- Street or lane closures
- Roadway detours
- Increased traffic near emergency facilities or along emergency response routes
- Construction staging plans

In response to these potential conditions, fire and emergency medical services personnel have the ability to use onboard live mapping software that alerts drivers of construction activities that may impede travel times to and from the scene of an emergency. Emergency responders are also able to see which roadways are experiencing delays due to construction, accidents, or other events, and will be able to take alternate routes accordingly. Metro and the contractor would coordinate with involved police, medical, and fire service providers during construction. Therefore, construction-related impacts will be less than significant, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with construction of the LPA without the design option, construction activities for the LPA with the design option would not interfere with emergency response plans or emergency evacuation plans. Therefore, no construction-related impacts for the design option would occur, and mitigation would not be required.

Maintenance and Storage Facility

Construction activities for the MSF will primarily occur outside of public ROW, with the exception of the new signalization at Somerset Boulevard and Bayou Avenue. The MSF and signalized intersection at Somerset Boulevard and Bayou Avenue will not interfere with emergency response plans or emergency evacuation plans. Therefore, no construction-related impacts for the MSF will occur, and mitigation will not be required.

Threshold SAF-CON-2: Result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain response times or other performance objectives for fire and police protection services?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts for the No Project Alternative would occur, and mitigation would not be required.

Locally Preferred Alternative

Under the LPA, there will be no construction-related activities associated with new or physically altered government facilities to maintain response times or other performance objectives for fire and police protection services. Therefore, no construction-related impacts for the LPA will occur, and mitigation will not be required.

Design Option: Close 186th Street

Consistent with construction of the LPA without the design option, construction activities for the LPA with the design option would not result in new or physically altered government facilities to maintain response times or other performance objectives for fire and police protection services. Therefore, no construction-related impacts for the design option would occur, and mitigation would not be required.

Maintenance and Storage Facility

The construction activities for the MSF will occur at the site, and signalized intersection improvements for the MSF entrance at Somerset Boulevard and Bayou Avenue will be minor. The construction activities and improvements will not result in new or physically altered government facilities to maintain response times or other performance objectives for fire and police protection services. Therefore, no construction-related impacts for the MSF will occur, and mitigation will not be required.

Threshold SAF-CON-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts for the No Project Alternative would occur, and no mitigation measures would be required.

Locally Preferred Alternative

Temporary construction-related activities and conditions that could impact pedestrian, bicyclist, and motorist safety include the following:

- Construction activities along the LPA related to excavation and construction of aerial structures, columns, stations, track, street improvements, and TPSS facilities
- Shallow excavation and construction activity along the centerline of streets along the LPA alignment to install columns, utility relocations, and track and power facilities

- Activities at the locations of staging and storage areas for construction equipment and materials
- Movement of construction equipment and materials between staging and storage areas and the areas of construction
- Transport of excavation debris along haul routes within communities
- Construction sites and staging areas where bystanders could suffer falls or other accidents

The construction effects of the LPA will also include lane closures; traffic detours; designated truck ingress, egress, and haul routes; and potential sidewalk and bicycle lane closures, which could affect pedestrian, bicycle, and motorist safety, as well as Safe Routes to School. However, the LRT corridor will be constructed primarily along an existing rail ROW and, therefore, impacts on pedestrian and bicyclist safety will be minimal.

Lane closures and detour routes will be provided for the public to safely navigate around at-grade construction (including column construction for aerial construction). Fencing and barriers will be provided for all at-grade construction to prevent entry into active construction sites for the safety of pedestrians, bicyclists, and motorists. A detailed discussion on construction, including methodologies, staging areas, and traffic detours, is provided in Section 3.7 of Chapter 3, Transportation.

Other impacts on pedestrian and bicyclist safety during construction of the LPA may potentially occur along the Los Angeles River Bike Path, Rio Hondo Bike Path, San Gabriel River Bike Path, Artesia Historic District Recreational Trails, or Bellflower-Paramount Bike Trail. The existing pedestrian overcrossing at Paramount High School over the PEROW will be temporarily removed during construction of the LPA, and a new, replacement pedestrian bridge will be constructed as part of the LPA to maintain safe pedestrian connectivity at this location. A temporary detour route will be designated to provide safe access between the Paramount High School campuses during construction of the LPA.

The implementation of the aforementioned safety measures during construction of the LPA will minimize the potential hazards to pedestrians, bicyclists, and motorists. However, these same construction activities and the corresponding detour routes may interfere with or potentially block Safe Routes to School. Therefore, construction-related impacts on pedestrian and bicyclist safety along Safe Routes to School will be potentially significant during construction. However, with implementation of Mitigation Measure SAF-2 (School District Coordination), as well as elements of COM-1 (Construction Outreach Plan), construction-related impacts will be reduced to a less than significant level. Specific elements of COM-1 (Construction Outreach Plan) related to safety and security for construction-related impacts include the following:

- Provide signage to direct pedestrians and motorists around construction areas; around sidewalk, street, and lane closures; to entrances of businesses and community assets; and to maintain the flow of traffic around the construction area
- Provide appropriate signage, barriers and fencing for pedestrian and bicycle detour routes to prevent pedestrians and bicyclists from entering the construction zones
- Provide the public with construction updates, alerts, and schedules through informational meetings, the project website, and other forms of communication such as, but not limited to, mailings and flyers to businesses and residences with 0.25-mile of the construction zone.

The potential for crime and protection of the public during construction is primarily related to construction equipment and staging areas that are not adequately secured. To reduce potential impacts, construction sites will include security features such as CCTV, onsite guards and security teams, and perimeter fencing to prohibit unauthorized individuals from accessing the area. However, crime from intentional acts against people and facilities cannot be completely eliminated. Therefore, Mitigation Measure SAF-3 (Construction Site Measures) will be implemented to reduce construction-related impacts to less than significant levels.

Mitigation Measures: Mitigation Measures COM-1 (Construction Outreach Plan), SAF-2 (School District Coordination), and SAF-3 (Construction Site Measures)

Impacts Remaining After Mitigation: Less than significant.

Design Option: Close 186th Street

Construction activities for the LPA with the design option would be substantially similar to the LPA without the design option. Therefore, no construction-related impacts for the design option would occur, and mitigation would not be required.

Mitigation Measures: Mitigation Measures COM-1 (Construction Outreach Plan), SAF-2 (School District Coordination), and SAF-3 (Construction Site Measures)

Impacts Remaining After Mitigation: Less than significant.

Maintenance and Storage Facility

The MSF will be specific to the site, and construction activities will be minimal with regard to construction-related impacts associated with hazards due to geometric design or incompatible uses. The MSF will be closed to the public, and only construction-related work will occur at the site. MSF site access will be strictly controlled by an onsite guard and security team, as well as barriers around the perimeter of the maintenance yard to prohibit unauthorized access into the yard. The signalized intersection improvements for the MSF entrance at Somerset Boulevard and Bayou Avenue will be minor and will not increase hazards due to geometric design or incompatible uses. Therefore, no additional impact will occur, and no additional mitigation measures are required.

Mitigation Measures: Mitigation Measures COM-1 (Construction Outreach Plan), SAF-2 (School District Coordination), and SAF-3 (Construction Site Measures)

Impacts Remaining After Mitigation: Less than significant.

4.20 Growth

This section summarizes information and analysis presented in the *West Santa Ana Branch Transit Corridor Project Final Growth-Inducing Impact Analysis Report* (Metro 2024t).

This section has been revised based on comments received on the Draft EIS/EIR and to reflect the identification of the LPA, inclusive of refinements to the LPA. Demographic data has been updated as necessary to represent the Affected Area for growth-inducing impacts associated with the LPA. Growth-inducing impacts are unchanged from the Draft EIS/EIR and would be less than significant. The LPA will not result in unplanned growth beyond that already anticipated in the regional plans and projections for the SCAG region, or in existing or future local land use and community plans. The LPA will direct planned growth to transit areas. Under NEPA, the LPA will provide benefits to jurisdictions in the project corridor and in the SCAG region and will not result in adverse effects related to unplanned growth. The design option would not result in adverse effects related to unplanned growth as it is a change to the traffic circulation on local roads and does not affect forecasted growth for population, housing, and employment.

4.20.1 Regulatory Setting and Methodology

4.20.1.1 Regulatory Setting

The SCAG 2016-2040 RTP/SCS (SCAG 2016a) is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS plans for new growth focused on transit and are supported by policies for the development of high-quality transit areas, livable corridors, and neighborhood mobility areas, including the following:

- Identifying regional strategic areas for infill and investment
- Structuring the plan on centers development
- Developing "Complete Communities"
- Developing nodes on a corridor
- Planning for additional housing and jobs near transit
- Planning for changing demand in types of housing
- Continuing to protect stable, existing single-family areas
- Providing adequate access to open space and preservation of habitat
- Incorporating local input and feedback on future growth

4.20.1.2 Methodology

In parallel with Section 4.2, Communities and Neighborhoods, the Affected Area for growth-inducing impacts is defined as those areas within 0.25 mile on each side of the proposed alignment, parking facilities, and MSF site, as well as 0.5-mile around the proposed station areas.

Historical population, housing, and employment data were obtained from the U.S. Department of Finance, the SCAG 2016-2040 RTP/SCS Demographics & Growth Forecast, and the U.S. Census Bureau. The base year 2017 and horizon year 2042 residential population in the Affected Area for growth-inducing impacts are derived from Transportation

Analysis Zone-level estimates from the SCAG 2016-2040 RTP/SCS.[14, 15] Information about average household size was obtained from the U.S. Census Bureau's block group-level 2015 American Community Survey 5-Year Estimates released in 2016.

An analysis of growth-inducing impacts includes an evaluation of the reasonably anticipated growth from the LPA in comparison to the population, households, and employment projections developed by a federally designated metropolitan planning organization. SCAG is the federally designated metropolitan planning organization for LA County. The SCAG regional growth forecast represents the most likely growth scenario for the Southern California region in the future and considers recent and past trends, key technical assumptions, regional growth policies, and local plans and policies. The SCAG regional growth forecast is used to identify trends in population, housing, and employment and to determine if the LPA will result in direct or indirect unplanned growth beyond that already anticipated for the SCAG region.

NEPA requires that the federal government use all practicable means to provide all Americans with safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S.C. 4331(b)(2)). NEPA does not include specific guidance or direction with respect to evaluating alternatives and relative effects of inducing growth, so a significant impact under CEQA is treated as an adverse effect under NEPA.

Per the *CEQA Guidelines* Section 15126.2€, a growth-inducing analysis evaluates whether a project could promote economic or population growth in the vicinity of the project or remove obstacles to population growth. The CEQA requirements are identified in Section 4.20.5.

4.20.2 Affected Environment/Existing Conditions

4.20.2.1 Historic Growth

Population and Housing

Table 4.20.1 shows the average growth trend from 2000 to 2017 for LA County and the cities within the Affected Area for growth-inducing impacts. Accordingly, historical housing growth has remained consistent with the population growth for each city. Population and housing growth in the City of Los Angeles was greater than at the county level, while the Cities of Huntington Park, Bell, and Cerritos experienced a reduction in population and housing, which can indicate a redistribution of growth located elsewhere. The population and housing growth for the City of Vernon during this period is skewed and does not reflect similar growth at the county level or in the surrounding cities. The city primarily consists of industrial uses with a few scattered commercial businesses and a small residential neighborhood located near the Vernon Avenue/Santa Fe Avenue intersection.

[14] The Base Year 2017 is determined by the year the Notice of Intent was publicly published in the *Federal Register* and the Notice of Preparation was published informing the public of the intent to prepare a combined Draft EIS/EIR for the Project and notifying interested agencies and parties of public scoping meetings. The Notice of Intent and Notice or Preparation were published in 2017. The 2042 horizon year is based on FTA standard practice of a 25-year planning horizon.

[15] The forecasted growth does not include a No Build Alternative scenario, but a portion of projected growth would still occur under the No Build Alternative.

Table 4.20.1. Historic Population and Housing Growth (2000-2017)

Jurisdiction	2000 – 2017 Change	
	Population	Housing
Los Angeles County	7.0%	7.8%
Los Angeles	7.9%	9.9%
Vernon	230.8%	192.3%
Huntington Park	-2.8%	-1.0%
Bell	-0.9%	0.0%
Cudahy	0.0%	4.2%
South Gate	0.6%	0.9%
Downey	5.5%	2.6%
Paramount	0.8%	0.3%
Bellflower	7.3%	2.8%
Artesia	2.6%	2.4%
Cerritos	-2.0%	5.0%

Source: Metro 2024t

Employment

Table 4.20.2 shows the average employment trend from 2002 to 2015 for LA County and the cities within the Affected Area for growth-inducing impacts. Employment growth occurred in the Cities of Los Angeles, Bell, Cudahy, South Gate, Paramount, and Bellflower, while the Cities of Vernon, Huntington Park, Downey, Artesia, and Cerritos experienced a loss of job opportunities that may be attributable to the 2007-2009 economic recession. The loss of job opportunities may also reflect employment growth and the shift of jobs to surrounding or adjacent cities. The Southern California region continued to historically grow and attract job opportunities, although growth may be slower in some cities.

Growth-inducing projects are typically located in more isolated or underdeveloped areas as these areas are more likely to require the additional infrastructure (e.g., housing, roads, utilities, schools) to support any growth that will accompany a project. Generally, these impacts are considered significant if a project will directly or indirectly lead to substantial population or employment growth in the project area that will exceed growth projections and planned capacities, or otherwise lead to a degradation of environmental quality such as increased noise or air quality impacts. Cities within the Affected Area for growth-inducing impacts are established communities that have generally experienced relative stability with population and housing growth and a mix of gains and losses in employment.

Table 4.20.2. Employment Growth (2002-2015)

Jurisdiction	2002 – 2015 Change[1]
Los Angeles County	15.0%
Los Angeles	19.2%
Vernon	-14.6%
Huntington Park	-5.1%
Bell	123.7%
Cudahy	31.4%
South Gate	23.2%
Downey	-5.6%
Paramount	9.1%
Bellflower	41.6%
Artesia	-10.3%
Cerritos	-8.1%

Source: Metro 2024t
Notes: [1] 2002 and 2015 employment data from U.S. Census Bureau Longitudinal Employer-Household Dynamics "OnTheMap," which is the most available data to characterize historical employment growth.

4.20.2.2 Forecasted Growth

Table 4.20.3 summarizes the SCAG-forecasted population, housing, and employment growth from 2012 to 2040 for LA County and the cities within the Affected Area for growth-inducing impacts. Accordingly, population, housing, and job opportunities are expected to grow in the cities in the Affected Area for growth-inducing impacts. Similar to the historical growth of the cities, the forecasted growth shows correlated growth between population and housing in addition to employment growth within the region. The City of Vernon will continue to be an exclusively industrial community with a few scattered commercial businesses and minimal residential uses. The high population and housing growth is indicative of future growth in the small existing residential neighborhood. Forecasted growth will generally exceed the average historical growth, except for the City of Cudahy, which does not anticipate population, housing, or employment growth in the 2012 to 2040 forecasted growth compared to historical growth. The City of Bell expects reduced levels of employment growth. This may suggest little or no growth in the city for the forecasted growth.

Table 4.20.3. Historical Growth and SCAG-Forecasted Growth in Cities within the Affected Area (2012-2040)

Jurisdiction	2000-2017 Growth *			2012 – 2040 Forecasted Growth		
	Population	Housing	Employment	Population	Housing	Employment
Los Angeles County	7.0%	7.8%	15.0%	16.0%	16.9%	23.1%
Los Angeles	7.9%	9.9%	19.2%	19.9%	27.5%	27.9%
Vernon	230.8%	192.3%	-14.6%	200.0%	100.0%	6.7%
Huntington Park	-2.8%	-1.0%	-5.1%	15.2%	19.2%	19.2%
Bell	-0.9%	0.0%	123.7%	3.4%	3.4%	10.5%
Cudahy	0.0%	4.2%	31.4%	0.0%	0.0%	0.0%
South Gate	0.6%	0.9%	23.2%	18.1%	22.0%	17.6%
Downey	5.5%	2.6%	-5.6%	8.2%	10.0%	39.1%
Paramount	0.8%	0.3%	9.1%	6.4%	6.5%	13.8%
Bellflower	7.3%	2.8%	41.6%	3.2%	3.0%	8.1%
Artesia	2.6%	2.4%	-10.3%	8.4%	11.1%	16.0%
Cerritos	-2.0%	5.0%	-8.1%	3.2%	3.2%	10.9%

Source: Metro 2024t
Note: *2002 and 2015 employment data from U.S. Census Bureau Longitudinal Employer-Household Dynamics "OnTheMap," which is the most available data to characterize the historical employment growth.

4.20.3 Environmental Consequences/Environmental Impacts

4.20.3.1 No Build Alternative

Under the No Build Alternative, infrastructure, transit, and transportation projects would not directly foster growth within a region, but instead would accommodate forecasted growth in the local communities and in the greater region and could help direct growth geographically throughout the SCAG region to areas more heavily served by transit. The No Build Alternative would include infrastructure and transportation-related projects that would accommodate the existing and future transportation needs of the area. In addition, these types of projects would be located within a densely developed region and would not extend into previously undeveloped areas that could induce growth or remove a barrier for growth.

The No Build Alternative could limit transit-related opportunities to intensify land uses at potential transit station areas and along the corridor; limit jurisdictions from developing compact communities around a public transit system; limit alternatives to automobile travel; and limit transit choices for residents, visitors, and employees (see *the West Santa Ana Branch Transit Corridor Project Final Land Use Impact Analysis Report* [Metro 2024a]). However, the No Build Alternative would still implement the other identified transit and transportation improvements in the region to accommodate forecasted growth and development consistent with local plans on a project-specific basis and as forecasted in the SCAG 2016-2040 RTP/SCS. In addition, the No Build Alternative would not conflict with plans to accommodate population growth with future planning of TODs surrounding future proposed transit station areas as related to other transit projects.

As such, projects included in the No Build Alternative are identified and forecasted for in the SCAG 2016-2040 RTP/SCS (SCAG 2016a), Metro's 2009 LRTP (Metro 2009a), and Measure M, and would provide infrastructure and transportation-related projects to accommodate and serve forecasted growth in the region and would not induce new growth. Thus, the No Build Alternative would not result in adverse growth-inducing effects.

4.20.3.2 Locally Preferred Alternative

Table 4.20.4 summarizes the SCAG-derived forecasted population, housing, and employment growth from 2017 to 2042 for the growth-inducing Affected Area (within 0.25 mile on each side of the alignment) for the LPA. The forecasted growth considers projects identified in the SCAG 2016-2040 RTP/SCS, Metro's 2009 LRTP, and Measure M, including this Project. Accordingly, population, housing, and employment growth is anticipated along the LPA alignment with population and housing growth being closely related.

The Affected Area for growth-inducing impacts has a forecasted population, housing, and employment growth of 59.2 percent, 62.0 percent, and 22.4 percent, respectively.

Table 4.20.4. SCAG-Derived Forecasted Growth within the Affected Area of the Locally Preferred Alternative (2017-2042)

2017-2042 Percent Change (%)		
Population	Housing	Employment
59.2%	62.0%	22.4%

Source: Metro 2024t
Note: Affected Area = 0.25 mile on each side of the alignment
A portion of the forecasted growth would also occur under the No Build Alternative.

Table 4.20.5 identifies the average forecasted population, housing, and employment growth within 0.5-mile around the proposed station areas from 2017 to 2042.

Table 4.20.5. SCAG-Derived Forecasted Growth within 0.5-mile of the Locally Preferred Alternative Station Areas (2017-2042)

Station Areas	2017-2042 Percent Change (%)		
	Population	Housing	Employment
Slauson/A Line Station	52.1%	56.7%	54.5%
Pacific/Randolph Station	19.1%	21.4%	16.8%
Florence/Salt Lake Station	19.9%	22.4%	22.4%
Firestone Station	72.2%	74.8%	10.7%
Gardendale Station	78.9%	93.3%	10.9%
I-105/C Line Station	25.4%	37.1%	33.9%
Paramount/Rosecrans Station	21.6%	33.7%	41.1%
Bellflower Station	40.6%	38.6%	17.5%
Pioneer Station	109.2%	106.0%	22.1%

Source: Metro 2024t
Notes: A portion of the forecasted growth would also occur under the No Build Alternative.

The highest population growth is projected in the Pioneer Station area (109.2 percent growth), and the lowest population growth is projected in the Pacific/Randolph Station area (19.1 percent). In correlation with the projected population growth, the Pioneer Station area is projected to have the highest housing growth (106.0 percent). The lowest household growth is projected in the Pacific/Randolph Station area (21.4 percent). Employment is projected to increase in the Affected Area for growth-inducing impacts consistent with the presence of industrial and commercial uses. Employment growth will increase the most in the Slauson/A Line Station area (54.5 percent). The smallest increase in employment growth is projected in the Firestone Station area (10.7 percent), which is indicative of the already job-saturated area (see the *West Santa Ana Branch Transit Corridor Project Final Communities and Neighborhoods Impact Analysis Report* [Metro 2024n]).

The Project is a transit infrastructure project proposed to serve forecasted population, housing, and employment growth within the project corridor and SCAG region and to accommodate the existing and future transportation needs of the area. The LPA will not generate direct growth within the project corridor and station areas. Instead, the LPA will accommodate growth from throughout the SCAG region that may be redirected to the project corridor and to existing and future public transit options. The forecasted growth is identified in the SCAG 2016-2040 RTP/SCS and Metro's 2009 LRTP and is not new unplanned growth. In addition, the LPA will be located within a densely developed region, both urban and suburban in character, and will not extend into previously undeveloped areas.

The forecasted growth for the LPA also indicates potential changes to the existing land uses surrounding the station areas as jurisdictions engage in future planning opportunities to intensify existing land uses. Indirect effects as a result of the LPA will include the future planning and development of TODs surrounding the proposed station areas. Metro prepared the *West Santa Ana Branch Transit-Oriented Development Strategic Implementation Plan* (Metro 2019d) to be used by local jurisdictions as a resource to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable, and safe areas for development in the project corridor. As a toolkit for future planning, the plan does not contain specific plans for TOD within the project corridor. Regional and local policies also encourage TOD planning and development, including the intensification of land uses at potential station areas and along the corridor; development of compact communities around a public transit system; alternatives to automobile travel; and planning for residents, visitors, and employees within the vicinity of the areas (see the Land Use Impact Analysis Report). Such future planned densification of land uses is also incorporated into the forecasted SCAG growth data and is not considered unplanned growth. The LPA will be a catalyst to the TOD planning and development and will not generate new unplanned growth, but instead will redistribute forecasted growth of a jurisdiction.

The LPA will not result in unplanned growth beyond growth already anticipated in the regional plans and projections for the SCAG region or in existing or future local land use and community plans. Rather, the LPA may direct planned growth anticipated in the regional plans and projections to transit areas. Under NEPA, the LPA will provide benefits to jurisdictions in the project corridor and in the SCAG region and will not result in adverse effects related to unplanned growth.

4.20.3.3 Maintenance and Storage Facility

The MSF will be an integral part of the Project's infrastructure and will support the maintenance, operations, and storage activities for the LRT system. The MSF will support SCAG mobility goals by supporting the provision of a reliable, alternative mode of transportation to the region. The MSF is not anticipated to generate population and housing growth although nominal employment growth could occur. However, employment opportunities will primarily consist of existing Metro employees who may be transferred from other existing MSFs and live within the region. Potential employment will not exceed forecasted projections for the SCAG region, or in local land use and community plans. The MSF will not result in adverse effects related to unplanned growth.

4.20.3.4 Design Option: Close 186th Street

The design option would close 186th Street but introduce an at-grade crossing at 187th Street. The design option is a change to the traffic circulation on local roads and would not affect forecasted growth for population, housing, and employment. The design option would not result in adverse effects related to unplanned growth.

4.20.3.5 U.S. Army Corps of Engineers Facilities

As previously discussed, the LPA is a transit infrastructure project that will serve forecasted population, housing, and employment growth within the project corridor and SCAG region. The LPA will not result in growth-inducing impacts or unplanned growth beyond growth already anticipated in the regional plans and projections for the SCAG region. While the USACE facilities are also infrastructure serving the greater region, the alteration of the facilities to accommodate operation of the LPA will not result in growth-inducing impacts.

4.20.4 Mitigation Measures

No mitigation measures are required.

4.20.5 California Environmental Quality Act Determination

To satisfy CEQA requirements, growth-inducing impacts are considered significant if the LPA has the potential to induce substantial economic or population growth in the LPA area that will exceed growth projections and planned capacities, or otherwise lead to a degradation of environmental quality such as increased noise or air quality impacts, either directly (for example, by proposing new homes and businesses), or indirectly (for example, through extension of roads or other infrastructure).

CEQA requires that the analysis identify if the "proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." *CEQA Guidelines* Section 15126.2(e) also requires the analysis to identify if the project "would remove obstructions to population growth…[or] encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively."

4.20.5.1 No Project Alternative

The No Project Alternative could limit transit-related opportunities to intensify land uses at potential transit station areas and along the corridor; limit jurisdictions from developing compact communities around a public transit system; limit alternatives to automobile travel; and limit transit choices for residents, visitors, and employees (see the Land Use Impact

Analysis Report). However, other transit and transportation improvements in the region may be implemented and completed, which would accommodate forecasted growth and development consistent with local plans on a project-specific basis, as forecasted in the SCAG 2016-2040 RTP/SCS, Metro's 2009 LRTP, and Measure M. The No Project Alternative would not anticipate indirect economic growth as the LPA would not be implemented. Thus, the No Project Alternative would not result in significant growth-inducing impacts, and mitigation would not be required.

4.20.5.2 Locally Preferred Alternative

The Project is a transit infrastructure project proposed to serve forecasted population, housing, and employment growth within the project corridor and SCAG region and accommodate the existing and future transportation needs of the area identified in the SCAG 2016-2040 RTP/SCS and Metro's 2009 LRTP and is not new unplanned growth.

As shown in Table 4.20.4, the LPA has a forecasted population, housing, and employment growth of 59.2 percent, 62.0 percent, and 22.4 percent, respectively. The LPA will not generate direct growth within the project corridor and station areas, but instead will accommodate the directed growth from throughout the SCAG region to the project corridor and public transit options. In addition, the LPA will be located within a densely developed region, both urban and suburban in character, and will not extend into previously undeveloped areas. Table 4.20.5 summarizes the projected population, housing, and employment growth within 0.5 mile around the proposed station areas. The low increase in employment growth is indicative of the already job-saturated downtown Los Angeles area.

Potential indirect effects of the LPA will include the future planning and development of TODs surrounding the proposed station areas. Metro prepared the *West Santa Ana Branch Transit-Oriented Development Strategic Implementation Plan* (Metro 2019d) to be used by local jurisdictions as a resource to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable, and safe areas for development in the project corridor. As a toolkit for future planning, the plan does not contain specific plans for TOD development within the project corridor. In addition, several jurisdictions in the corridor have completed or are in the process of developing their own individual station area plans. Such future planned densification of land uses is also incorporated into the forecasted SCAG growth data and is not considered unplanned growth. TOD planning will not generate new unplanned growth, but instead will redistribute forecasted growth of a jurisdiction.

As such, the LPA will not induce direct or indirect growth beyond that already anticipated in the regional plans, projections for the SCAG region, or in local land use and community plans. The LPA will direct planned growth to transit areas and will provide benefits to jurisdictions in the project corridor and in the SCAG region. Therefore, the LPA will not result in significant growth-inducing impacts, and mitigation will not be required.

4.20.5.3 Design Option: Close 186th Street

The design option would close 186th Street but maintain the at-grade crossing at 187th Street. The design option is a change to the traffic circulation of a local road and does not affect forecasted growth for population, housing, and employment. The design option would not result in significant growth-inducing impacts, and mitigation would not be required.

4.20.5.4 Maintenance and Storage Facility

The MSF will be an integral part of the Project's infrastructure and will support the maintenance, operations, and storage activities for the proposed LRT system. The MSF will support SCAG mobility goals by providing a reliable alternative mode of transportation to the region. The MSF is not anticipated to generate population and housing growth, although nominal employment growth may occur. However, employment opportunities will primarily consist of existing Metro employees who may be transferred from other existing MSFs and live within the region. Potential employment will not exceed forecasted projections for the SCAG region or in local land use and community plans. The MSF will not result in significant growth-inducing impacts, and mitigation will not be required.

4.21 Cumulative Impacts

This section summarizes the potential cumulative impacts that could result from the No Build Alternative and LPA, including the design option and MSF, in combination with identified past, present, and reasonably foreseeable future projects. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Cumulative Impact Analysis Report* (Metro 2024aa).

This section has been revised based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. This section reflects the Final EIS/EIR impact analysis updates for each environmental topic. The topics have also been slightly reorganized so that topics are addressed in the same order as in the remainder of the impact discussions of this Final EIS/EIR.

Further, the methodology and analysis were updated to include consideration of the AltAir/World Energy Project in the transportation, air quality, and noise and vibration cumulative analysis. The AltAir/World Energy Project, independent of the WSAB Project, is located adjacent to the LPA alignment between Downey Avenue and Somerset Boulevard and would result in both new operational sources of industrial noise and emissions, as well as an increase in frequency of rail traffic from one train to two trains per day along the one-mile-long railroad connection between the refinery and UPRR ROW. This increase in rail frequency would be in the same rail ROW as the LPA and could result in cumulative transportation, air quality, and noise and vibration impacts.

Consistent with the conclusions in the Draft EIS/EIR with respect to Alternative 3, the incremental contribution of the LPA to significant cumulative impacts will be cumulatively considerable for transportation (operation and construction); land use effects with respect to planned Class I bicycle paths; noise (operation and construction); and vibration (operation).

4.21.1 Regulatory Setting and Methodology

4.21.1.1 Regulatory Setting

CEQ (40 CFR) Sections 1500 – 1508. The CEQ regulations (40 CFR Sections 1500 – 1508) define effects as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The discussion included in this section addresses the potential for the LPA to result in cumulative effects.

CEQA (Cal. PRC, Section 21000 et seq.) and *CEQA Guidelines* (14 CCR, Section 15000 et seq.). CEQA requires an EIR to evaluate cumulative impacts of a project when the project's incremental effect is cumulatively considerable. If the project's incremental effect is not cumulatively considerable, the effect need not be considered as significant, but the basis for concluding that the incremental effect is not cumulatively considerable must be briefly described. "'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines,* Section 15064(h)(1)).

4.21.1.2 Methodology

To satisfy NEPA requirements, the degree of the effects of the action are analyzed to assess the likelihood of effects that are later in time or farther removed in distance.

To satisfy CEQA requirements, this chapter follows the methodology prescribed by *CEQA Guidelines* Section 15130 and 15130(b) that states that the cumulative impacts can be based on a "summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect."

In addition, the AltAir/World Energy Project, located adjacent to the LPA alignment between Downey Avenue and Somerset Boulevard, is considered in this cumulative analysis as it relates to transportation, air quality, and noise and vibration. The AltAir/World Energy Project is independent of the WSAB Project and would include both new operational sources of industrial noise and an increase in frequency of rail traffic from one train to two trains per day along the one-mile-long railroad connection between the refinery and UPRR ROW. This increase in rail frequency would be in the same rail ROW as the LPA and could result in cumulative noise and vibration impacts. Potential cumulative transportation, noise and vibration, and air quality impacts are discussed in Section 4.21.3.2 and 4.21.4.2 under the Transportation, Air Quality, and Noise and Vibration subheadings of this Final EIS/EIR.

4.21.2 Affected Environment/Existing Conditions

4.21.2.1 Affected Area

For purposes of the cumulative analysis, the geographic area that could be affected by the LPA in combination with projected growth varies depending on the environmental resource. The Affected Area for each environmental topic is discussed in Chapter 3, Transportation, and throughout Chapter 4, Affected Environment and Environmental Consequences, of this Final EIS/EIR. For example, cumulative visual quality and aesthetics or noise impacts are more localized; whereas cumulative air quality and climate change impacts occur on a broader regional or global scale. Table 4.0.1 in the introduction to Chapter 4 describes the geographic scope of the cumulative impact analysis for each environmental resource.

4.21.2.2 Forecasted Growth

At the time, the Project NOP/NOI were issued in 2017, the SCAG 2016-2040 RTP/SCS (SCAG 2016a) was the adopted population, housing, and employment forecast for Southern California inclusive of the LPA. The 2016-2045 RTP/SCS growth forecast envisions change associated with the development of high-quality transit areas, livable corridors, and neighborhood mobility areas. The forecast has been adopted in close coordination with cities and jurisdictions

throughout the SCAG region. This forecast process fundamentally assumes proposed land use changes at the local level.

Changes within jurisdictions within the project Study Area are expected to take the form of new development, expansion of existing development, redevelopment/demolition, and intensification of land use densities. Over the forecast period of 28 years (2012 to 2040), demolition, modification of existing buildings and infrastructure, and new residential and non-residential construction are expected. In most corridor jurisdictions, these changes have been anticipated and are incorporated into local planning processes, including the initiation and/or adoption of specific plans or transit-oriented communities anticipating the LPA, among other changes. As such, these changes would likely result in overlapping construction and associated activities in areas near or adjacent to the LPA, particularly station vicinities. Table 4.21.1 shows the projected 2012-2040 net growth for projected future projects within the jurisdictions that intersect with the LPA. This illustrates the magnitude of future changes, particularly during construction of transportation and development projects and associated infrastructure, that could combine for cumulative effects. Projected growth forecasts also include the transportation projects identified in Table 2.4 in Chapter 2, the Alternatives Considered/Project Description, of this Final EIS/EIR.

Table 4.21.1. SCAG-Forecasted Growth (2012-2040) in Cities within the Affected Area

Jurisdiction	2012 - 2040 Net Growth		
	Population	Housing	Employment
Los Angeles – Southeast Los Angeles [1]	19.9%	27.5%	27.9%
Vernon	200.0%	100.0%	6.7%
Huntington Park	15.2%	19.2%	19.2%
Bell	3.4%	3.4%	10.5%
Cudahy	0.0%	0.0%	0.0%
South Gate	18.1%	22.0%	17.6%
Downey	8.2%	10.0%	39.1%
Paramount	6.4%	6.5%	13.8%
Bellflower	3.2%	3.0%	8.1%
Artesia	8.4%	11.1%	16.0%
Cerritos	3.2%	3.2%	10.9%

Source: Metro 2024aa
Notes:
[1] City of Los Angeles-Southeast Los Angeles neighborhoods within 0.25 mile of the alignment and 0.5 mile from the station include downtown Los Angeles, South Central, and Central Alameda.
SCAG = Southern California Association of Governments

4.21.3 Environmental Consequences/Environmental Impacts – Long Term

4.21.3.1 No Build Alternative

The No Build Alternative includes regional projects identified in the SCAG 2016-2040 RTP/SCS (SCAG 2016a), Metro's 2009 *LRTP (Metro 2009a)*, and Measure M. The No Build Alternative includes local transportation-related projects, including Link Union Station, Active Transportation Rail to Rail/River Corridor, Los Angeles Union Station Forecourt and Esplanade Improvement, I-710 Corridor Bike Path, and Cesar Chavez Bus Stop Improvements projects. Under the No Build Alternative, regional and local projects would continue to be built. Similarly, the AltAir/World Energy Project would also be built. These projects would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary, so that potential adverse effects are reduced or avoided to the greatest extent feasible. As the LPA would not be constructed under the No Build Alternative scenario and no related adverse effects would occur, the No Build Alternative would not result in significant cumulative effects.

4.21.3.2 Locally Preferred Alternative, Design Option, MSF Site

A detailed analysis of the adverse effects to environmental resources is provided in the impact analysis reports prepared for the LPA, including the design option. The MSF is a support facility to serve the LPA and for the purpose of a cumulative analysis was analyzed together with the LPA.

Transportation

The traffic analysis considered traffic impacts for the horizon year 2042 for the No Build Alternative (refer to Table 2.4 in Chapter 2, Alternatives Considered/Project Description, for the projects included as part of the No Build Alternative) and the LPA. The traffic volumes used for the No Build Alternative were derived from growth rates obtained from the Metro Travel Demand Model, which includes planned growth in population and employment in the LA County region. As a result, the traffic volumes used for the No Build Alternative represent the cumulative future condition based on the effects of regional growth on the transportation system. The transportation analysis evaluates cumulative future impacts and is presented in Section 3.4.1 through 3.4.5 of Chapter 3, Transportation, of this Final EIS/EIR.

In the vicinity of Façade Avenue and Paramount Boulevard/Rosecrans Avenue, increased freight frequency may occur in the future as a result of the AltAir/World Energy Project at the Paramount Refinery facility. The AltAir/World Energy Project is independent of the WSAB Project and would include an increase in frequency of rail traffic from one train to two trains per day along the one-mile-long railroad connection between the refinery and UPRR ROW. Freight trains currently operate through some existing at-grade crossings; however, these trains were not incorporated into the traffic analysis due to their infrequent occurrence. The LPA will not affect the operation of rail freight, including when increased service is considered. Per the AltAir/World Energy Project Final Supplemental EIR (City of Paramount 2022), rail freight deliveries and pick-ups will be limited to non-peak traffic periods (between 10:00 a.m. and 6:00 p.m.). Therefore, because the increased rail freight activity associated with the AltAir/World Energy Project will not coincide with the peak traffic period as analyzed for the WSAB Project, there will not be an additional cumulative impact to the LOS presented in Chapter 3 of this Final EIS/EIR under NEPA. Based on the transportation analysis, the LPA in combination with the projected growth in the region will cause significant cumulative transportation effects specific to traffic under NEPA, and the LPA's incremental contribution to this cumulatively

significant impact will be cumulatively considerable under NEPA but not under CEQA (see CEQA Guidelines, § 15064.3, subdivisions (a), (b)(2)).

Land Use and Development

The geographic scope for the cumulative land use and development analysis includes the immediate vicinity of the LPA and the land use Affected Area. The LPA and projected growth in the land use Affected Area will be in highly urbanized areas. The LPA will be primarily located within public rights-of-way, and projected growth could consist of new development or infrastructure, redevelopment, or expansions. As such, the LPA in relation to projected growth is not anticipated to introduce project components that will create physical barriers or generate any permanent access disruptions to existing land uses, and access to the surrounding communities will remain available. New street closures and turning restrictions associated with the LPA and related projects will not divide existing communities as access to streets and surrounding properties will generally be required to be maintained through the rerouting of traffic within adjacent local streets. Therefore, the LPA in relation to projected growth and future development opportunities near the LPA will not cause a significant cumulative impact related to the division of an established community.

The LPA and projected growth in the region will provide future development opportunities that may result in a more densely developed urban environment in the Affected Area. The LPA and projected future growth will be required to comply with applicable land use plans, policies, and regulations of the affected jurisdictions so that land use compatibility issues would not occur. Related transit projects in the region, including the LPA, will provide opportunities for implementing SCAG and local land use policies or local planning objectives. The LPA and projected future projects will be generally consistent with applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified in the general plans, community plans, specific plans, master plans, and bicycle master plans of the affected local jurisdictions. Therefore, cumulative land use impacts will generally not be cumulatively significant.

However, the LPA could preempt future development and implementation of planned Class I bicycle paths identified in the General Plan or bicycle master plan of the Cities of Huntington Park, Bell, Cudahy, South Gate, Paramount, and Bellflower. While planned, the bike facilities are unfunded and not scheduled for implementation. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), Metro will continue to coordinate with jurisdictions and local agencies and will support preparation of amended language for each affected bicycle plan consistent with the city's mobility and connectivity goals (see Section 4.1.4, Land Use Section, of this Final EIS/EIR). However, because the process to amend General Plans and bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Even with the adoption of Mitigation Measure LU-1 (Consistency with Bike Plans), the LPA may preempt future development and implementation of planned bike paths and an adverse effect and significant and unavoidable impact will occur. Therefore, the LPA in relation to the projected future growth in the land use Affected Area will cause significant cumulative land use effects with respect to planned Class I bicycle paths and the LPA's incremental contribution to this cumulatively significant impact will be cumulatively considerable.

Communities and Neighborhoods

The geographic scope for the community and neighborhood analysis includes the immediate vicinity of the LPA where the adverse effects would be largely localized. The LPA and projected growth in the community and neighborhood Affected Area would be in highly urbanized areas. The LPA will enhance circulation and connectivity with the greater region and improve connections with transit stations and other pedestrian and bike facilities, while projected projects could consist of new development, redevelopments, or infrastructure projects. The LPA and projected future projects may also help communities and neighborhoods within the Affected Area remain cohesive. Similar to the LPA, the projected future projects would be solely at the discretion and approval of the affected jurisdiction and would be subject to all applicable requirements and regulations of local jurisdictions. Therefore, the LPA and projected future projects will not result in significant cumulative effects associated with access and mobility, community stability, and community character and cohesion.

The LPA will not directly result in population growth within surrounding communities. However, the LPA could indirectly affect population, housing, and employment growth as a result of and in combination with projected future projects in the region. Changes in demographics associated with new development opportunities are anticipated to be consistent with the SCAG adopted growth projections since these growth projections are based on the General Plan land use designations of local jurisdictions. Therefore, the LPA and projected future projects will not result in significant cumulative impacts associated with access and mobility, community stability, community character and cohesion.

Acquisitions and Displacements

In general, effects associated with acquisitions and displacements are site-specific and adverse effects are largely localized and located in a highly urbanized geographical area. The LPA will result in property acquisitions and displacements required to accommodate project components. This displacement of properties is not expected to displace a substantial number of people that will necessitate the construction of replacement housing elsewhere. Adequate replacement housing is available in the Affected Area for acquisitions and in surrounding areas based on the Project's gap analysis of the housing and business market as of June/July 2023. In addition, projected population and housing growth is accounted for in the local and regional plans to guide jurisdictions in market growth. Metro will provide relocation assistance and compensation for identified eligible displaced businesses and residences as required under the Uniform Act and California Relocation Act. In summary, the LPA and projected future projects will not result in adverse effects related to property acquisition and displacements and a significant cumulative impact will not result.

Visual Quality and Aesthetics

In general, effects associated with visual quality and aesthetics are site specific and localized. Projected growth and future projects could alter the visual environment in the visual quality Affected Area and in neighboring jurisdictions. Visual resource effects will not combine with other projects in separate viewsheds to create a cumulative impact. The geographic area of the LPA and the projected future projects in the visual quality Affected Area is characterized as predominantly developed with varied heights and massing in the visual environment.

The LPA and projected future projects will not obstruct views of or alter the visual character and quality of scenic resources, such as scenic vistas and scenic highways. No scenic vistas or

scenic highways are located in the visual quality Affected Area. Therefore, the LPA and projected future projects will not have the potential to contribute to cumulative effects associated with scenic vistas and scenic highways.

The LPA and projected future projects would provide for future development opportunities that could result in a more densely developed urban environment, which in turn, could affect visual character and quality in the vicinity of the related projects. The LPA and projected future projects would be required to comply with local jurisdictional regulations in the areas in which they would be located, would be designed to complement the surrounding area, and would require mitigation measures to reduce visual impacts, if any. The LPA will be consistent with and will not permanently degrade the existing visual character and quality of the Affected Area with the implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle"), as described in Section 4.4.4 of the Visual and Aesthetics Section of the Final EIS/EIR). Therefore, the LPA and projected future projects will not result in a significant cumulative impact on visual character and quality.

The LPA and projected future projects could also provide opportunities for development that may result in an increase in daytime glare and ambient nighttime lighting. These development opportunities would be required to adhere to glare and lighting regulations of the affected jurisdictions. The LPA and projected growth identified in Section 4.21.2.2 are located in a highly developed and already well-lit area and will not represent a substantial change in the lighting environment of the area to the extent that nighttime views that are currently available will become unavailable. The LPA will not result in adverse impacts on light and glare as lighting will incorporate standard practices that will reduce potential lighting and glare effects (i.e., exterior lighting shielded and directed downward, low-reflective surfaces). It is expected that the projected future projects would also incorporate similar practices in their lighting and structure design to minimize excessive adverse lighting and glare effects. Therefore, the LPA in combination with projected future projects will not result in significant cumulative impacts on light and glare.

Air Quality

California is divided geographically into 15 air basins for the purpose of managing the state's air resources at a regional level. Each air basin generally has similar meteorological and geographic conditions throughout. Each local district is responsible for preparing the portion of the State Implementation Plan applicable within their boundaries. The South Coast Air Basin is the Affected Area for evaluation of cumulative impacts for air quality. The South Coast Air Basin is currently designated as being in nonattainment of the federal and state ambient air quality standards for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Therefore, there is an ongoing significant cumulative effect associated with these air pollutants.

The SCAQMD is responsible for managing the South Coast Air Basin's air resources and is responsible for bringing the South Coast Air Basin into attainment for federal and state air quality standards. The SCAQMD prepares the Air Quality Management Plan to evaluate contemporary South Coast Air Basin air quality and the emissions inventory and forecast control strategies to ultimately bring the South Coast Air Basin into attainment of the ambient air quality standards. The Air Quality Management Plan emissions budgets are partially developed based on the 2016-2040 RTP/SCS, and the two planning documents are developed in conjunction with one another. The Project is included in the 2016-2040 RTP/SCS under Project ID 1TR1011, which demonstrates that the regional transportation and emissions modeling

budget in the Air Quality Management Plan accounts for implementation of the LPA. The RTP entry for the LPA was included in Amendment #3 to the 2020–2045 RTP/SCS, with changes comprising an update of the opening year from 2028 to 2035 and a decrease to the project cost associated with the length of the LPA alignment relative to other alternatives assessed in the Draft EIS/EIR. Amendment #3 was approved in June 2023. Therefore, implementation of the LPA will not contribute in a significant way to cumulative effects related to projections built into the Air Quality Management Plan.

In 2003, the SCAQMD published a white paper on cumulative impacts and potential control strategies, which contains considerations for evaluating cumulative air quality impacts under CEQA. Projects that exceed the project-specific thresholds are considered by the SCAQMD to be cumulatively considerable, and, conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. The LPA represents a public transit project that will reduce regional VMT and associated air pollutant emissions, and operation of the LPA will result in less than significant air quality impacts when compared to the project-specific SCAQMD thresholds.

The AltAir/World Energy Project is independent of the WSAB Project and would produce daily emissions in excess of the SCAQMD regional thresholds. The AltAir/World Energy Project Final Supplemental EIR evaluated and identified mitigation to air quality impacts as feasible, and is responsible for implementation of such mitigation. Operation of the LPA will not independently generate emissions exceeding the applicable SCAQMD thresholds at regional or localized scales. As shown in Table 4.5.10, the LPA will reduce regional emissions of most criterial pollutants. Furthermore, the majority of the emissions generated by operation of the LPA will not occur near the AltAir/World Energy facility or the City of Paramount; the MSF site will be located within the City of Bellflower, and emissions associated with its operation will not be generated within the area of localized impacts identified in the AltAir/World Energy Project Final Supplemental EIR. Air quality impacts for the LPA will remain less than significant. Therefore, operation of the LPA will not result in a cumulatively considerable impact for any South Coast Air Basin nonattainment pollutant.

Greenhouse Gas Emissions

The *CEQA Guidelines* emphasize that the effects of GHG emissions are cumulative in nature and should be analyzed in the context of CEQA's existing cumulative impacts analysis. As compared to the No Build Alternative, the LPA will result in fewer GHG emissions with reductions related to the reduction of regional VMT for passenger vehicles associated with increased transit ridership. The LPA will be consistent with applicable GHG plans, policies, and regulations. The LPA will be consistent with the 2016-2040 RTP/SCS, the 2020-2045 RTP/SCS, *Energy Conservation Management Plan*, *City of Los Angeles Zero Emission 2028 Roadmap*, and other conservation plans for local jurisdictions. GHG emissions that will be generated are not considered significant as mass transit and reduced VMT is a key component of relevant GHG reduction plans. There is no potential for the LPA to interfere with state and regional GHG reduction targets. Consequently, the LPA will not incrementally contribute to cumulatively significant GHG effects and the impact will not be cumulatively considerable.

Noise and Vibration

Noise: The geographic scope for the cumulative noise analysis is the immediate vicinity (within 350 feet of LRT tracks) of the LPA where project-generated noise could be heard concurrently with noise from other sources. The noise environment in the vicinity of the LPA can be primarily defined by traffic on adjacent roadways, freight trains, and the existing Metro A (Blue) Line. The Metro A (Blue) Line was accounted for in noise measurements and is included in the analysis for the LPA. Cumulative growth and development in cities located in the vicinity of the LPA could result in increases in roadway traffic volumes over time that would concurrently increase ambient noise levels in the vicinity of the LPA. However, future increases in roadway noise are expected to be minimal along the alignment because of limited roadway capacity and freight train noise, which is generally intermittent as only two to three trains pass-by per day. In the vicinity of Façade Avenue and Paramount Boulevard/Rosecrans Avenue, increased freight frequency would occur in the future as a result of the AltAir/World Energy Project at the Paramount Refinery facility. The AltAir/World Energy Project is independent of the WSAB Project and would include both new operational sources of industrial noise and an increase in frequency of rail traffic from one train to two trains per day along the one-mile-long railroad connection between the refinery and UPRR ROW. The AltAir/World Energy Project Final Supplemental EIR concluded that operational stationary noise related to the refinery would be less than significant with mitigation incorporated, while the increased rail operations would result in a significant and unavoidable impact related to operational noise (City of Paramount 2022). However, the relocated freight track analysis conducted for the WSAB Project conservatively considered a higher freight train frequency than the existing frequency of one train per day. Therefore, the analysis presented in the Draft EIS/EIR captured the noise increase associated with an increase in freight train frequency. Therefore, cumulative noise effects would not be more severe than identified in the Draft EIS/EIR.

As discussed in Section 4.7.3, Noise and Vibration, of the Final EIS/EIR, the LPA will result in moderate or severe operational noise effects at sensitive receptors along the LPA alignment. Implementation of Mitigation Measures NOI-1 (Soundwalls) through NOI-5 (Freight Track Relocation Soundwalls), which include soundwalls, low impact frogs, TPSS noise reduction, and wheel squeal noise monitoring, will reduce adverse effects related to noise; however, due to physical constraints along the alignment, not all noise impacts will be fully mitigated and adverse effects and significant and unavoidable impacts will remain (see Section 4.7.4, Noise and Vibration Section, of the Final EIS/EIR). Therefore, the LPA in combination with traffic noise generated by projected future projects will result in a significant cumulative noise impact to sensitive receptors along the alignment; the LPA's contribution to this significant cumulative impact will be cumulatively considerable.

Vibration: Permanent vibration effects are typically localized and instantaneous events. The geographic scope for the cumulative vibration analysis is the immediate vicinity (within 25 feet) of the LPA where project-generated vibration could occur concurrently with vibration from other sources. The primary source of existing vibration along the LPA is from freight trains. Due to the infrequency of freight trains, it is unlikely that LRT vibration and freight train vibration will combine to produce a cumulative vibration effect. As discussed in the AltAir/World Energy Project Final Supplemental EIR, operational vibration as a result of the AltAir/World Energy Project would result in a less than significant impact. Regardless of the existing vibration from infrequent freight trains, after implementation of Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs), adverse effects and significant and unavoidable impacts will remain at two locations for the LPA (see Section

4.7.4, Noise and Vibration Section, of this Final EIS/EIR). Therefore, the LPA in combination with vibration generated by projected projects and existing freight, will result in a significant cumulative vibration impact; the LPA's contribution to this significant cumulative impact will be cumulatively considerable.

Ecosystems and Biological Resources

The geographic scope for ecosystems and biological resources is the immediate vicinity and the biological resources Affected Area. The LPA and projected future projects would be located in a heavily developed/disturbed area and do not support any plant species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and would be unlikely to affect wildlife species if present. Most wildlife species that could be expected to be present in the cumulative Affected Area are species who have adapted to urban environments and disturbances caused by human-induced activities. The LPA in combination with projected future projects will not result in impacts to ecosystems and biological resources. Similar to the LPA, the projected future projects would be required to comply with applicable regulations and include mitigation measures so that impacts to biological resources are reduced or avoided. Therefore, the LPA in combination with projected future projects will not result in a significant cumulative impact to ecosystems and biological resources.

Geotechnical/Subsurface/Seismic Hazards

The geographic scope for geologic, subsurface, and seismic hazards is site-specific and adverse effects are largely localized. The LPA and projected future projects would be located in a seismically active region of Southern California, with large liquefaction zones under the LPA; however, the LPA and projected future projects would not be located in an area with landslide risks. The LPA and projected future projects will be required to comply with all prescribed standards, requirements, and guidance related to geologic, subsurface, and seismic hazards and implement mitigation measures, as necessary. The LPA will implement Project Measure GEO PM-1 (Geotechnical Design [Operation]), which requires the LPA to be designed in accordance with design standards, including anticipated level of seismic ground shaking, liquefaction, and seismic settlement, and will comply with all applicable state and local guidelines and mandatory design requirements with seismic-related ground failure. Therefore, the LPA will not result in adverse effects (see Section 4.9.4, Geological, Subsurface, and Seismic Section of this Final EIS/EIR). As such, the LPA in combination with projected future projects will not result in significant cumulative geologic, subsurface, and seismic hazards effects.

Hazards and Hazardous Materials

In general, impacts associated with hazards and hazardous materials are site-specific and adverse effects are largely localized. The LPA will not result in adverse effects related to hazards and hazardous materials with implementation of Project Measures HAZ PM-1 (Handling, Storage, and Transport of Hazardous Materials or Wastes [Operation]), HAZ PM-2 (Disposal of Groundwater [Operation]), and HAZ PM-3 (Contaminated Soil, Soil Vapor, and Groundwater [Operation]) (see Section 4.10.4, Hazards and Hazardous Materials Section, of this Final EIS/EIR). The LPA and projected future projects will be required to comply with all prescribed standards, requirements, and guidance related to hazards and hazardous materials. Therefore, the LPA in combination with projected future projects will not result in significant cumulative hazard and hazardous materials effects.

Water Resources

The geographic scope for the cumulative water resources analysis is the LA County storm drainage system serving the water resources Affected Area and watersheds the area discharges to (i.e., the Los Angeles River Watershed and the Rio Hondo channel and Compton Creek sub-watersheds, and the San Gabriel River Watershed and the Coyote Creek and Los Cerritos channel sub-watersheds). The LPA and projected future projects will result in modifications to the local drain systems, a cumulative increase in impervious surfaces or pollutant runoff, and may also affect groundwater resources that could result in adverse effects. The LPA will implement the design features identified in Section 4.11.3.1 of the Water Resources Section of the Final EIS/EIR. Similar to the LPA, projected future projects would be subject to the same state and regional water quality permit requirements as the LPA and would be designed in compliance with all existing regulations regarding water resources. Therefore, the LPA in combination with projected future projects will not result in significant cumulative water resources effects.

Energy

The LPA and projected future development will be subject to compliance with applicable energy efficiency and management codes and regulations, including, but not limited to, the California Building Standards Code Energy Efficiency Standards (Title 24 Parts 6 and 11) and the Los Angeles Green Building Code, as well as other provisions of local planning initiatives from the Cities of Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos. All new Metro projects will be implemented in accordance with the Metro *Green Construction Policy and the Energy Conservation and Management Plan* so that the expenditure of energy resources is controlled to the maximum extent feasible.

There is no present regional shortage of energy resources for land use and transportation development planning and implementation, and no foreseeable strains on existing resources have been identified. The LPA will not require new distribution infrastructure, and existing electrical utility lines will be required to operate the LPA. Such activities will not be related to supply or capacity deficiencies and will be similar to routine utility improvements. There is no potential for operation of the LPA to conflict with energy conversion goals or interfere with the energy supply and distribution facilities. The LPA in combination with the projected future projects will not result in significant cumulative energy effects during operation.

Historic, Archaeological, and Paleontological Resources

The geographic scope of historic, archaeological, and paleontological effects is generally site-specific and localized and generally characterized as urbanized and highly developed. No adverse effects will occur to historic properties, archaeological resources, or paleontological resources during operation of the LPA. Direct and indirect impacts to historic, archaeological, and paleontological resources due to ongoing maintenance and operations of the LPA will not occur because there will be no or minimal ground disturbance. Similarly, projected future projects would be located within existing public ROWs or in highly urbanized areas. As all historic, archaeological, and paleontological resources are unique, projected future projects would be expected to comply with applicable federal, state, and local regulations to protect those resources. Therefore, the LPA in combination with projected future projects will not cause significant cumulative impacts to historic, archaeological, and paleontological resources effects during operations.

Tribal Cultural Resources

The geographic scope of effects to tribal cultural resources is generally site-specific and localized and generally characterized as urbanized and highly developed. No tribal cultural resources were identified within the APE associated with the LPA and no adverse effects will occur to tribal cultural resources during operation of the LPA. Direct and indirect impacts to unanticipated tribal cultural resources due to ongoing maintenance and operations of the LPA will not occur because there will be no or minimal ground disturbance. Similarly, related projects would be located within existing public ROWs or in highly urbanized areas. As tribal cultural resources are unique, projected future projects would be expected to comply with applicable federal, state, and local regulations to protect tribal cultural resources. Similar to the LPA, projected future projects are not anticipated to cause adverse effects to tribal cultural resources during operation with compliance of all applicable regulations regarding the handling and care of such resources. Therefore, the LPA in combination with projected future projects will not result in significant cumulative tribal cultural resource effects.

Parklands and Community Facilities

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail will not result in adverse physical effects or prevent access to existing bike facilities. Mitigation Measure LU-1 (Consistency with Bike Plans) will be implemented to maintain connectivity (see Section 4.1.4, Land Use Section, of this Final EIS/EIR). The LPA could preempt future development and implementation of the planned Class I bicycle path along Salt Lake Avenue and the Class I bicycle path north of Rayo Avenue and south of the Los Angeles River, identified in the *City of Huntington Park Bicycle Transportation Master Plan*, *City of Cudahy 2040 General Plan*, *South Gate Bicycle Transportation Plan*, and *City of Bell Bicycle Master Plan*. As part of this effort, Metro, as appropriate, will support preparation of amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. The impacts related to consistency with land use plans are discussed above under the heading "Land Use and Development."

Overall, the LPA will not result in adverse effects to parklands or community facilities, as the LRT will operate within the confines of the rail ROW and will not impede access to any parklands or community facility. The LPA and projected future projects will be located in urban areas and primarily will be located within existing rail or public ROW or within infill parcels. Partial acquisitions will not affect the function or result in a displacement of community facilities. Some projected future projects would improve the overall accessibility to the station areas, community facilities, and other modes of transportation. Projected future projects may also increase the number of businesses and residents in the area; however, population growth has been accounted for in the regional and local plans. Therefore, the LPA in combination with projected future projects will not result in significant cumulative effects to parklands or community facilities.

Economic and Fiscal Impacts

Operation of the LPA will have beneficial economic and fiscal impacts by improving transit accessibility and mobility, enhancing regional connectivity, and reducing travel time and costs in the region. Similarly, projected future projects may also introduce new businesses, residents, and jobs to the area, the growth of which has been accounted for in the local and regional plans. Combined with the LPA, projected future projects will likely encourage greater economic activity and benefit surrounding businesses and commuting employees. The LPA and projected future projects will increase employment and tax revenue that will benefit local and regional economies. Therefore, the LPA in combination with projected future projects will not result in significant cumulative economic and fiscal effects during operations.

Safety and Security

Adverse safety and security impacts are generally site-specific and localized. Operation of the LPA will be in accordance with Metro system safety plans, policies, and procedures, including the *Metro System Safety Program Plan, the Metro System Security Plan, the Metro Standard and Emergency Operating Procedures,* and *the Rail Operating Rulebook*, or equivalent. The LPA will comply with all applicable federal, state, and local safety codes and regulations, and Metro will coordinate with emergency response services so that response times and emergency access will not be adversely affected during operation. Project Measures SAF PM-1 (Emergency Access) through SAF PM-8 (Fire/Life Safety Committee) and Mitigation Measure SAF-1 (Encroachment Detection) will be implemented so that no adverse effects will occur (see Section 4.18.4, Safety and Security, of this Final EIS/EIR). Similarly, projected future projects would be required to be designed safely and would be subject to all safety codes and regulations and would comply with the requirements of local emergency services. In the event projected future projects would result in an overall decrease in safety and security, each project would be required to implement project-specific measures and mitigation measures, as necessary, to reduce impacts. Therefore, the LPA in combination with the projected future projects will not result in significant cumulative safety and security effects during operations.

Environmental Justice

The LPA will not result in disproportionately high and adverse effects on minority and low-income populations. Therefore, the LPA will not contribute to cumulative impacts on EJ communities.

4.21.3.3 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross three USACE facilities: the Los Angeles River, Rio Hondo channel, and San Gabriel River. The projected future projects, including any proposed projects related to USACE facilities, would be required to comply with applicable plans, policies, regulations, and requirements and would be subject to independent review to avoid and/or minimize potential adverse effects to the extent feasible. In addition, proposed future projects would also implement similar project measures or mitigation measures, as necessary, to minimize adverse effects further.

The effects associated with operation of the LPA under each environmental topic is provided in Section 4.21.3.2. As discussed, the LPA in combination with projected future projects, will result in significant cumulative impacts associated with transportation effects; cumulative land use effects with respect to planned Class I bicycle paths; noise impacts to sensitive receptors; and vibration impacts. However, cumulative impacts for these topics are not applicable to operation of

the LPA at USACE facilities. Traffic operations will not occur within the USACE channels, the USACE facilities are not sensitive to noise or vibration, and no adverse effects related to land use will occur during operation of the LPA at the USACE facilities.

The LPA in combination with projected future projects, including projects related to USACE facilities, will not be cumulatively considerable related to land use compatibility issues and land use plan consistency; access and mobility, community stability, community character and cohesion, and growth projections; property acquisition and displacements; scenic vistas and scenic highways, visual character and quality, and light and glare; Air Quality Management Plan and South Coast Air Basin nonattainment pollutant; GHG effects; ecosystems and biological resource effects; geologic, subsurface, and seismic hazards effects; hazard and hazardous materials effects; water resources effects; energy effects; historic, archaeological, or paleontological resources; tribal cultural resource effects; parklands or community facilities; economic and fiscal effects; safety and security; and significant cumulative impacts to EJ communities.

4.21.4 Environmental Consequences/Environmental Impacts – Construction

4.21.4.1 No Build Alternative

Under the No Build Alternative, the LPA would not be developed and adverse effects related to construction of the LPA would not occur. Under the No Build Alternative, adverse construction effects are not anticipated to occur as projects identified in the No Build Alternative would generally comply with applicable regulations, plans, and policies to avoid potential adverse effects to the environment to the extent possible. In addition, projected future projects, including the AltAir/World Energy Project, would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary, so that potential adverse effects related to construction are reduced or avoided. As the No Build Alternative would not result in adverse construction effects or impacts, cumulative effects would not occur. As no related adverse effects would occur, the No Build Alternative would not contribute to potential adverse cumulative construction effects and would not be cumulatively considerable.

4.21.4.2 Locally Preferred Alternative, Design Option, MSF Site

Transportation

Construction of the LPA will require temporary closures of streets and lanes. Additionally, on- and off-street parking will be temporarily removed during construction. Construction of other projects in the vicinity of the construction areas for the LPA may also require temporary closure of streets and lanes and loss of on- and off-street parking. Construction of the LPA in combination with construction of other projects will cause significant cumulative temporary transportation effects, and the Project's incremental contribution to this cumulatively significant impact will be cumulatively considerable.

Land Use and Development

Construction of the LPA will involve temporary construction activities, such as construction staging, materials stockpiling, hauling of dirt and materials, temporary street and lane closures, TCE and construction laydown areas, and property acquisitions. Similar construction activities may also occur with projected future projects in the Affected Area. Although access to businesses and neighborhoods may be detoured temporarily during construction, Mitigation Measure COM-1 (Construction Outreach Plan) will be implemented

to minimize impacts to the community (see Section 4.19.3.1, Construction-related Land Use). Metro will coordinate with other ongoing construction projects to minimize temporary construction effects.

Similarly, projected future projects would also result in temporary construction effects and would also implement a construction plan to minimize those impacts. Construction of the LPA in combination with projected future projects could affect nearby sensitive land uses. However, given the temporary nature of construction activities and the implementation of mitigation measures for noise, vibration, and traffic, construction of the LPA and projected future projects will not result in land use conflicts and will not conflict with applicable land use plans, policies, and regulations of local agencies. Therefore, the LPA in combination with projected future projects will not result in significant cumulative effects related to land use during construction.

Communities and Neighborhoods

Construction of the LPA and projected future projects will involve temporary construction activities that could disrupt the community where the construction activities occur. The LPA will implement Mitigation Measure COM-1 (Construction Outreach Plan) to minimize effects to communities and businesses where practicable (see Section 4.19.3.2, Construction-related Communities and) Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) will be implemented, where applicable, during construction to reduce construction-related noise and vibration impacts to the extent feasible (see Section 4.19.3.7, Construction-related Noise and Vibration). Similarly, projected future projects would result in temporary construction activities that could result in temporary adverse effects to the surrounding community and may also require mitigation measures to minimize effects. Metro will coordinate with other concurrent construction projects to minimize street and sidewalk closures, maintain access to businesses, and to minimize other cumulative temporary community impacts. Therefore, the LPA in combination with projected future projects will not result in significant effects associated with communities and neighborhoods.

Acquisitions and Displacements

The LPA will require TCEs and full acquisitions for construction-related activities. Affected sites with TCEs are anticipated to be returned to preconstruction conditions once construction is complete. TCEs will be temporary and are not expected to change the primary function of the existing site uses. Metro will provide compensation for eligible businesses and residents affected during construction as required under the Uniform Act and California Relocation Act. Furthermore, properties to be used as TCEs will be appraised to determine the fair market value of the portion that will be used temporarily during construction, and just compensation not less than the approved appraisal will be made to each property owner. As with the LPA, projected future projects may require TCEs and full acquisitions for construction-related activities and would be required to comply with applicable regulations, including the Uniform Act (for federally funded projects) and the California Relocation Act, to provide compensation for eligible affected businesses and residents, and impacts will not be adverse. Therefore, the LPA in combination with projected future projects will not result

in significant cumulative effects regarding displacement and acquisitions during construction.

Visual Quality and Aesthetics

The LPA and projected future projects are located in a highly urbanized area with varied heights and massing in the visual environment. Construction activities for the LPA will temporarily alter the visual character and quality of the Affected Area. Mitigation Measure VA-3 (Construction Screening) will be implemented to minimize potential temporary construction visual impacts (see Section 4.19.3.4, Construction-related Visual and Aesthetics). Similar temporary visual adverse effects would also be associated with construction of projected future projects, which would be localized to the area and may require implementation of mitigation measures to minimize potential construction-related adverse effects. Therefore, the LPA in combination with projected future projects will not result in significant cumulative effects on visual quality or character during construction.

No scenic vistas or scenic highways are located within the visual quality Affected Area. Therefore, construction of the LPA in combination with projected future projects will not have the potential to contribute to cumulative effects associated with scenic vistas and scenic highways.

Construction activities for the LPA will not result in a substantial source of light or glare. Implementation of Mitigation Measure VA-4 (Construction Lighting) will minimize potential construction lighting adverse effects. Similar to the LPA, projected future projects would be required to comply with applicable policies and regulations regarding construction hours and light and glare and would need to implement project measures or mitigation measures to further minimize potential construction lighting effects. Therefore, the LPA in combination with construction of projected future projects will not result in significant cumulative effects related to light and glare during construction.

Air Quality

The South Coast Air Basin is currently designated as being in nonattainment of the federal and state ambient air quality standards for ozone and particulate matter (PM_{10} and $PM_{2.5}$). Therefore, there is an ongoing significant cumulative effect associated with these air pollutants. Emissions generated during construction of the LPA combined with construction of projected future projects could impede attainment efforts or result in locally significant pollutant concentrations. Therefore, the LPA in combination with projected future projects could result in significant cumulative air quality impacts.

The SCAQMD has not established separate quantitative cumulative thresholds for emissions of criteria pollutants. Rather, the SCAQMD established the same mass daily thresholds of significance for project-specific and cumulative impacts assessment because of the regional importance of project-specific emissions in the context of attaining the ambient air quality standards. Attainment designations are made at the county and geographic basin levels; therefore, there is a cumulative aspect to all project-level emissions in nonattainment areas. For both construction and operational activities, if a project exceeds the identified project-level significance thresholds, its emissions would be considered cumulatively significant, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Construction of the LPA will generate varying degrees of maximum daily air pollutant emissions due to differences in daily haul truck activity required to dispose of demolition debris and excavated soil and import fill materials. Based on the analysis presented in Section 4.19.3.5 (Construction-related Air Quality), construction of the LPA will not produce emissions exceeding any regional mass daily threshold. The AltAir/World Energy Project is independent of the WSAB Project and would produce daily emissions in excess of the SCAQMD regional threshold. The AltAir/World Energy Project Final Supplemental EIR evaluated and identified mitigation to air quality impacts as feasible, and is responsible for implementation of such mitigation. Construction of the LPA and MSF will not independently generate emissions exceeding the applicable SCAQMD thresholds at regional or localized scales, as shown in Table 4.19.9. The majority of the emissions generated by construction of the LPA will not occur near the AltAir/World Energy facility or the City of Paramount. The MSF site will be located within the City of Bellflower, and emissions associated with its construction will not be generated within the area of localized impacts identified in the AltAir/World Energy Project Final Supplemental EIR. Air quality impacts for the LPA will remain less than significant. In accordance with SCAQMD guidance, construction of the LPA would not result in a cumulatively significant air quality impact because construction of the LPA would not generate emissions in excess of the identified project-level significance thresholds. Therefore, construction of the LPA will not result in a cumulatively considerable short-term contribution to degradation of the region's air quality. Once operational, the LPA will reduce vehicle miles traveled, which will result in a net benefit to regional air quality.

Construction activities for the LPA will adhere to provisions of the Metro *Green Construction Policy* (Project Measure AQ-1 [Metro Green Construction Policy]) and employ BMPs to prevent the occurrence of a nuisance odor or dust plume in accordance with SCAQMD Rule 402 (Nuisance). Projected future projects would also be required to employ similar BMPs. Therefore, a cumulatively significant impact related to odor and dust will not occur.

Greenhouse Gas Emissions

The LPA would result in fewer GHG emissions than both the Existing Condition and the No Build Alternative. The LPA will be consistent with applicable GHG plans, policies, and regulations. Standard construction procedures will be undertaken in accordance with the Metro *Green Construction Policy* (Project Measure AQ-1 [Metro Green Construction Policy]) and SCAQMD and CARB regulations applicable to heavy-duty construction equipment and diesel haul trucks. Adherence to requirements pertinent to equipment maintenance and inspections standards and emissions standards, as well as diesel fleet requirements related to idling restrictions, will prevent construction of the LPA from conflicting with GHG emissions reductions efforts. The LPA will be consistent with the 2016-2040 RTP/SCS, the 2020-202 RTP/SCS, the *Energy Conservation Management Plan*, the *City of Los Angeles Zero Emission 2028 Roadmap*, and other conservation plans for local jurisdictions. Although temporary GHG emissions will be generated during construction, no adverse impact will occur as the LPA is a mass transit project and reduced VMT is a key component of relevant GHG reduction plans. There is no potential for the LPA to interfere with state and regional GHG reduction targets. Therefore, the LPA will not cause a cumulatively considerable incremental impact related to GHG emissions.

Noise and Vibration

Noise: The geographic scope for the cumulative noise analysis is the immediate vicinity (within 500 feet) of the LPA where construction-generated noise could be heard concurrently with noise from other sources. Construction of the LPA will require heavy earth-moving equipment, generators, cranes, pneumatic tools, and other similar machinery. Without mitigation, construction noise levels for the LPA will exceed FTA and local noise standards due to the intensive nature of LRT construction activities and the proximity of sensitive land uses to construction activities. Implementation of Mitigation Measure NOI-6 (Noise Control Plan) will reduce construction noise levels but will still likely exceed the FTA construction noise criteria and local standards resulting in temporary adverse effects related to construction noise (see Section 4.19.3.7, Construction-related Noise and Vibration).

Similar to the LPA, construction of projected future projects would likely include the use of heavy construction equipment that would generate elevated construction noise levels. Projected future projects would go through their own environmental clearance process and would include mitigation for construction noise to reduce impacts. Projected future projects within 500 feet of LPA construction could result in a cumulative construction noise impact at sensitive receptors. The AltAir/World Energy Project at the World Energy Facility will be within 500 feet of the LPA. The AltAir/World Energy Project Supplemental EIR concluded that construction noise will be less than significant with mitigation incorporated. As such, if construction of the AltAir/World Energy Project and the LPA occur concurrently, the cumulative impact would not be substantially more severe than that identified in the Draft EIS/EIR. Although it is not possible to predict which related projects would result in a cumulative construction noise scenario, construction noise levels associated with the LPA could increase ambient noise levels. Therefore, when combined with noise generated by projected future projects, the LPA will result in cumulative noise effects during construction, and the LPA's incremental contribution to this impact will be cumulatively considerable.

Vibration: The geographic scope for the cumulative construction vibration analysis is the immediate vicinity (within 75 feet) of the LPA where construction-generated vibration could occur concurrently with vibration from other sources. Vibration-generating activities associated with construction of the LPA could result in noticeable levels of vibration, but will largely occur within the rail ROWs or on sites acquired for the LPA, are unlikely to result in building damage, and will attenuate quickly with distance. The LPA will implement Mitigation Measures VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), where applicable, to avoid construction vibration levels that will exceed the FTA construction impact criteria and no adverse effect will occur (see Section 4.19.3.7, Construction-related Noise and Vibration).

The LPA in combination with projected future projects is not considered likely to result in the exposure of sensitive receivers to excessive vibration due to the localized nature of vibration impacts and the fact that not all construction will occur at the same time and at the same location. Only sensitive receivers near each construction site could be affected by each activity. For the combined vibration impact from concurrent construction projects to reach cumulatively significant levels, intense construction from these projects will have to occur simultaneously within 75 feet of any sensitive receiver. It is not anticipated that vibration-generating equipment from projected future projects, including the AltAir/World Energy

Project, would operate at the same time and same location as equipment related to the LPA. Therefore, when combined with vibration generated by projected future projects, the LPA will not result in significant cumulative vibration effects during construction.

Ecosystems and Biological Resources

The LPA and projected future projects will be constructed in dense urban environments. Although unlikely, the LPA may adversely affect nesting birds and bats if initial ground disturbance and vegetation/tree trimming or removal are required during the nesting bird season. Construction-related noise and dust could also result in an adverse indirect effect on nesting birds and bats. The LPA will comply with all required applicable regulations. Construction of the LPA will not result in significant impacts related to invasive species, special-status species, jurisdictional waters, and protected trees with implementation of Project Measures BIO PM-1 (Invasive Plant Species Best Management Practices) and BIO PM-2 (Prohibition of Invasive Plant Species in Landscape Plans) and Mitigation Measures BIO-1 (Bats), BIO-2 (Nesting Birds), BIO-3 (Jurisdictional Resources), and BIO-4 (Protected Trees) (see Section 4.19.3.8, Construction-related Ecosystems/Biological Resources). Similar to the LPA, projected future projects would comply with applicable regulations and ordinances and would implement applicable mitigation so construction-related impacts to special-status species, jurisdictional waters, and protected trees are minimized or avoided. Therefore, construction of the LPA in combination with projected future projects will not result in cumulatively significant impacts to special-status species, jurisdictional waters , and protected trees.

Geotechnical/Subsurface/Seismic Hazards

In general, geologic, subsurface, and seismic hazards are site-specific and adverse effects are largely localized. Construction of the LPA will not result in adverse effects related to geologic, subsurface, and seismic hazards, and the LPA will comply with all prescribed standards, requirements, and guidance related to geologic, subsurface, and seismic hazards. In addition, the LPA will implement GEO PM-2 (Geotechnical Design [Construction]) that requires the incorporation of the geotechnical report recommendations and monitoring plans (see Section 4.19.3.9, Construction-related Geotechnical, Subsurface, and Seismic). Similarly, projected future projects would be required to comply with all prescribed standards, requirements, and guidance related to geologic, subsurface, and seismic hazards. Therefore, the LPA combined with projected future projects will not result in significant cumulative geologic, subsurface, and seismic hazards effects during construction.

Hazards and Hazardous Materials

In general, impacts associated with hazards and hazardous materials are site-specific and adverse effects are largely localized. Construction of the LPA will not result in adverse effects related to hazards and hazardous materials. Construction of the LPA will comply with all regulatory requirements and hazardous wastes will be properly handled. The LPA will implement HAZ PM-4 (Handling, Storage, and Transport of Hazardous Materials or Wastes), HAZ PM-5 (Property Assessment – Phase I and II ESAs), HAZ PM-6 (Demolition Plans), HAZ PM-7 (Disposal of Groundwater), HAZ PM-8 (Oil Well Abandonment), and HAZ PM-9 (Contaminated Soil, Soil Vapor, and Groundwater) and Mitigation Measures HAZ-1 (Unidentified Oil and Gas Wells) to minimize potential impacts and reduce the risk of adverse health effects during construction (see Section 4.19.3.10, Construction-related Hazards and Hazardous Materials). Therefore, no adverse effect will occur.

Similarly, construction of projected future projects would be required to comply with all prescribed standards, requirements, and guidance related to hazards and hazardous materials and implement project measures and mitigation measures to minimize potential hazards and hazardous materials impacts. Therefore, the LPA in combination with projected future projects will not result in significant cumulative hazard and hazardous materials effects during construction.

Water Resources

Construction of the LPA could lead to temporary changes in grades and drainage patterns, discharge of pollutants into surface waters, and exposure of soils to stormwater and erosive conditions. In addition, temporary dewatering may be required. These temporary impacts will be addressed via a SWPPP that complies with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). Construction of the LPA over the Los Angeles River, Rio Hondo channel, and San Gabriel River will not result in impacts to floodplains as construction activities will comply with all applicable federal and local floodplain regulations, including applicable NFIP regulations. Dewatering of the construction site will be subject to the requirements of the Construction Dewatering Permit and, therefore, will not cause construction-related impacts to surface or groundwater quality. The LPA will implement the project design features described in Section 4.19.3.11, Construction-related Water Resources, to avoid, minimize, or reduce the potential for impacts on water resources.

Similarly, projected future projects could result in similar water resource impacts during construction and would be required to comply with existing regulations, including SWPPPs, and to implement BMPs to reduce construction impacts on water resources. Therefore, the LPA in combination with projected future projects will not result in significant cumulative water resource effects during construction.

Energy

Diesel fuel for construction vehicles and equipment will be the primary end use of energy resources consumed throughout the course of the construction period for the LPA. There is no identified ongoing cumulatively significant condition related to energy resources that construction of the LPA will have the potential to exacerbate. Given the extensive network of fueling stations along the LPA alignment and the fact that construction will be temporary, no new or expanded sources of energy or infrastructure will be required to meet the energy demands during construction of the LPA. In addition, construction activities will comply with the Metro *Green Construction Policy* per Project Measure AQ PM-1 (Metro Green Construction Policy) and construction equipment and vehicles will be maintained in accordance with manufacturers' specifications to limit the consumption of transportation fuels to the maximum extent feasible. The one-time expenditure of fuel is not considered a wasteful or inefficient use of nonrenewable resources as the fuel is being used to construct a mass transit system that has been identified by state and regional agencies as an efficient method of reducing permanent energy use.

Projected future projects, including transportation and general land use development projects, are not expected to place an undue burden on the availability of existing or future energy resources. Therefore, the LPA will incrementally contribute to cumulative energy effects during construction and will not be cumulatively considerable.

Historic, Archaeological, and Paleontological Resources

Historic, archaeological, and paleontological impacts are generally site-specific and localized. There are no known archaeological resources in the APE; therefore, the LPA will have no effect on known archaeological resources. Ground-disturbing construction activities could directly impact paleontological resources and unknown archaeological resources, if present. Implementation of Mitigation Measures CR-1 (Development of Cultural Resources Monitoring and Discovery Program) through CR-4 (Treatment of Unanticipated Discoveries), and PR-1(a): (Paleontological Resources Mitigation and Monitoring Program) through PR-1(d): (Preparation and Curation of Recovered Fossils), will further reduce adverse construction-related effects to archaeological and paleontological resources (see Section 4.19.3.14, Construction-related Historic, Archaeological, and Paleontological Resources).

Surface-level activities could result in vibration impacts to historic structures from the operation of heavy equipment in close proximity; however, Mitigation Measures VIB-3 (Vibration Control Plan) and VIB-6 (Construction Vibration Limits Near Historic Properties/Historical Resources) will be implemented, ensuring that vibration levels do not exceed identified damage risk criteria. Temporary visual impacts and construction easements related to construction will be temporary and will not result in any permanent change to historical resources. Therefore, construction of the LPA will have no adverse effect on built environment historic properties.

Similarly, projected future projects could require ground-disturbing activities during construction and would be required to comply with all applicable regulations and would implement mitigation measures to reduce adverse effects. Therefore, the LPA when combined with projected future projects will not result in significant cumulative historic, archaeological, and paleontological resources effects during construction.

Tribal Cultural Resources

Impacts to tribal cultural resources are generally site-specific and localized. The Affected Area is located within a previously disturbed developed area. Nonetheless, the potential still exists for tribal cultural resources to be encountered due to the previous inhabitance of the Los Angeles Basin by various Native American tribes. Should potential tribal cultural resources be discovered, Metro will comply with applicable federal, state, and local guidelines during construction activities, including those set forth in PRC Sections 21083.2 and 5097.98 and State Health and Safety Code Section 7050.5 so that no adverse effects will occur. In addition, the LPA will implement Mitigation Measures TCR-1 (Native American Monitoring), TCR-2 (Unanticipated Discovery of Traditional Cultural Properties/Tribal Cultural Resources), and CR-1 (Development of Cultural Resources Monitoring and Discovery Program) and will not result in adverse effects (see Section 4.19.3.15, Construction-related Tribal Cultural Resources).

Projected future projects would also be required to comply with applicable federal, state, and local guidelines. As with the LPA, projected future projects are not anticipated to cause adverse effects to tribal cultural resources during construction and would comply with all applicable regulations regarding the handling and care of such resources. Therefore, the LPA when combined with projected future projects will not result in significant cumulative tribal cultural resource effects during construction.

Parklands and Community Facilities

Construction of the LPA may temporarily affect parklands and community facilities. Indirect effects related to noise, vibration, and air quality will be temporary and are not anticipated to result in adverse effects to parklands and community facilities. The use of nearby streets may result in restricted street parking, sidewalk detours, and traffic lane or full street closures that may affect access to parklands and community facilities. The LPA will implement Mitigation Measure COM-1 (Construction Outreach Plan) so that access to community assets and neighborhoods during construction is maintained and construction detour routes signage is provided (see Section 4.19.3.16, Construction-related Parklands and Community Facilities).

Similarly, construction of proposed future projects could cause indirect effects related to noise, vibration, and air quality, and require temporary restrictions in street parking, sidewalk detours, and traffic detours. As with the LPA, projected future projects would be required to coordinate with local jurisdictions to minimize construction impacts to surrounding parklands and community facilities through project-specific construction management plans that would maintain access to parklands and community facilities to the extent feasible. Therefore, the LPA combined with projected future projects will not result in significant cumulative parklands and community facility effects during construction.

Economic and Fiscal Impacts

Construction of the LPA will have beneficial economic and fiscal impacts related to direct and indirect effects from construction spending. Construction effects on businesses and residences near the construction area will be temporary. The LPA will implement Mitigation Measures COM-1 (Construction Outreach Plan) and TRA-21 (Loss of Parking [Construction]) so that access to businesses is maintained and no adverse effects will occur (see Section 4.19.3.17, Construction-related Economic and Fiscal Impacts). Similarly, projected future projects would bring beneficial economic and fiscal effects to the city in which the project is located. Therefore, the LPA when combined with projected future projects will result in beneficial cumulative economic and fiscal effects during construction.

Safety and Security

Adverse safety and security impacts are generally site-specific and localized. Project construction activities could temporarily affect the pedestrian and bicycle environment, motorist safety, and emergency response services. Temporary street closures may also result in impacts to emergency response services. The LPA will coordinate with police, medical, and fire services; develop construction staging plans; and comply with applicable regulations. The LPA will implement Project Measures SAF PM-9 (Service Providers), SAF PM-10 (MRDC Compliance), and SAF PM-11 (Fire/Life Safety Committee [Construction]) and Mitigation Measures SAF-2 (School District Coordination), SAF-3 (Construction Site Measures), and elements of COM-1 (Construction Outreach Plan) to avoid adverse effects to pedestrian, bicyclist, or motorist safety (see Section 4.19.3.18, Construction-related Safety and Security). Similarly, projected future projects would be required to comply with all applicable regulations and implement mitigation measures and/or BMPs to reduce safety and security impacts. Therefore, the LPA when combined with projected future projects will not result in significant cumulative safety and security effects during construction.

Environmental Justice

The LPA will not result in disproportionately high and adverse effects on minority and low-income populations. Therefore, the LPA will not result in significant cumulative impacts on EJ communities.

4.21.4.3 U.S. Army Corps of Engineers Facilities

Construction of the LPA and its effects to each environmental topic is provided in Section 4.21.4.2. As discussed, construction of the LPA in combination with projected future projects, including projects related to the USACE facilities, will be cumulatively considerable for construction-related transportation effects and noise impacts to sensitive receptors. However, cumulative impacts for these topics are not applicable to construction of the LPA at USACE facilities. Traffic operations will not occur within the USACE channels and the USACE facilities are not sensitive to noise.

The projected future projects, including any proposed projects related to USACE facilities, would be required to comply with applicable plans, policies, regulations, and requirements and would be subject to independent review to avoid and/or minimize potential adverse effects during construction to the extent feasible. In addition, proposed future projects would also implement similar project measures or mitigation measures, as necessary, to minimize construction-related adverse effects further.

The LPA in combination with projected future projects, including projects related to USACE facilities, will not be cumulatively considerable related to land use; access and mobility, community stability, and community character and cohesion, and growth projections; property acquisition and displacements; scenic vistas and scenic highways, visual character and quality, and light and glare; air quality effects; GHG effects; vibration impacts; ecosystems and biological resource effects; geologic, subsurface, and seismic hazards effects; hazard and hazardous materials effects; water resources effects; energy effects; historic, archaeological, or paleontological resources; tribal cultural resource effects; parklands or community facilities; economic and fiscal effects; safety and security; and EJ communities.

4.22 Environmental Justice

This section examines potential disproportionately high and adverse effects from operation of the No Build Alternative and LPA (including the design option and MSF) on environmental justice (EJ) communities. Construction effects on EJ communities are also provided in this section. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Environmental Justice Impact Analysis Report* (Metro 2024z).

This section has been revised since the Draft EIS/EIR based on comments received on the Draft EIS/EIR and identification of the LPA, inclusive of refinements. This section reflects the Final EIS/EIR impact analysis updates for each environmental topic; refer to the introductory sections of each topic in Chapter 4, Affected Environment/Environmental Consequences, and the introduction in Chapter 3, Transportation, for topic-specific updates since the Draft EIS/EIR.

The impact conclusions in the Draft EIS/EIR remain unchanged, including with respect to Alternative 3. With implementation of mitigation and with consideration of off-setting benefits, the LPA, MSF, and design option will not cause a disproportionately high and adverse effect on EJ communities in the Affected Area.

4.22.1 Regulatory Setting and Methodology

4.22.1.1 Regulatory Setting

Federal and State

- CEQ Environmental Justice Guidance under NEPA (CEQ 1997)
- Title VI of the Civil Rights Act of 1964
- EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*)
- EO 13166 (*Improving Access to Services for Persons with Limited English Proficiency*)
- USDOT Order 5610.2C (*U.S. Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), issued in May 2021
- FTA Circular 4702.1B (*Title VI Requirements and Guidelines for FTA Recipients*) (FTA 2012a)
- FTA Circular 4703.1 (*Environmental Justice Policy Guidance for FTA Recipients, California Environmental Quality Act*) (FTA 2012b)
- Caltrans *Standard Environmental Reference Handbook Volume 4: Community Impacts Assessment* (Caltrans 2011)

Regional and Local

- Metro LRTP (Metro 2009a)
- General plans, community plans, and specific plans for the 12 local jurisdictions: *City of Los Angeles General Plan* (City of Los Angeles 2001a), *City of Los Angeles Land Use/ Transportation Policy* (City of Los Angeles 1993), *City of Vernon General Plan* (City of Vernon 2015), *Los Angeles County General Plan 2035* (LA County 2015), *Florence-Firestone Community Plan* (LA County 2019), *City of Huntington Park Draft General Plan 2030* (City of Huntington Park 2017), *City of Bell 2030 General Plan* (City of Bell 2018a), *City of Cudahy 2040 General Plan* (City of Cudahy 2018a), *City of South Gate General Plan 2035* (City of South Gate 2009), *City of South Gate Hollydale Village Specific Plan* (City of South Gate 2017b), *City of Downey Vision 2025* (City of Downey 2005), *City of Paramount General Plan* (City of Paramount 2007), *City of Bellflower General Plan: 1995-2010* (City of Bellflower 1994), *City of Artesia General Plan 2030* (City of Artesia 2010), and *City of Cerritos General Plan* (City of Cerritos 2004)

CEQA has no requirements to specifically address socioeconomic factors and, as a result, there are no CEQA EJ analysis requirements and a CEQA determination is not included in this section. The issue of environmental justice, as it is defined in California law, is not required to be a separate component of analysis in an EIR. In particular, questions of social and economic effects have a circumscribed role within CEQA. *CEQA Guidelines* Section 15131 allows the approving agency to include or present economic or social information in an EIR, but *CEQA Guidelines* Section 15131(a) limits the consideration of such factors in the assessment of significant impacts, stating:

> "Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater

than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes."

Issues that are pertinent to the question of environmental justice that are addressed under CEQA are considered in the Final EIR, including discussions in the air quality, noise, hydrology and water quality, hazards and hazardous materials, population and housing, transportation, and Other CEQA Considerations technical sections.

4.22.1.2 Methodology

The EJ Affected Area is defined as the Census Block Groups that are located within or intersect the area within 0.25-mile of the LPA alignment, parking facilities, and MSF site, and within 0.5-mile of the stations. The EJ Affected Area includes the approximately 14.5-mile alignment that crosses through or is adjacent to portions of the following jurisdictions: the Cities of Los Angeles (including the Southeast Los Angeles community), Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, as well as the unincorporated Florence-Firestone community of LA County.

The description of minority populations and/or low-income populations is drawn from the demographic and socioeconomic data from the U.S. Census Bureau's block group-level 2011-2015 ACS 5-Year Estimates and TAZ-level estimates from the SCAG 2016-2040 RTP/SCS with base year 2017 and build-out year 2042.[16] [17]

USDOT Order 5610.2C and subsequent agency guidance on EJ provide clear definitions of minority groups addressed by Executive Order 12898. USDOT defines minority groups as Black; Hispanic; Asian American; American Indian and Alaskan Native; and Native Hawaiian or Other Pacific Islander.

USDOT Order 5610.2C and subsequent agency guidance on EJ defines "low-income" as a person whose median household income at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines.[18] However, FTA Circular 4703.1 also states that a locally developed threshold, such as that used for FTA's grant program or a percentage of median income for the area, provided that the threshold is at least as inclusive as the HHS poverty guidelines. For this study, the U.S. Department of Housing and Urban Development (HUD) threshold of income limits is used to define "low-income." Per HUD, low-income is a person whose median household income is 80 percent for the area. LA County is used as the geographical area because each of the jurisdictions are located in LA County and would not artificially dilute or inflate the minority or low-income population identified for this study. The 2015 median household income for LA County ($56,196) is used because it is the closest

[16] Existing conditions (2017) was determined by the year the Notice of Intent was published in the Federal Register and the Notice of Preparation was published informing the public of the intent to prepare a combined Draft EIS/EIR for the Project and notifying interested agencies and parties of public scoping meetings. The Notice of Intent and Notice of Preparation were published in 2017. The Horizon Year of 2042 was determined based on FTA standard practice for a 25-year planning horizon.

[17] At the time the Notice of Intent and Notice of Preparation were published in 2017, the most current community-related data available was obtained from the U.S. Census Bureau's block group-level 2011-2015 ACS 5-Year Estimates released in 2016. The latest 2015-2019 ACS 5-Year Estimates were released in December 2020. A comparison of the two datasets was conducted and determined that the latest ACS socioeconomic dataset will not change the identification of environmental justice populations and will not change the results of the analysis.

[18] Public Law 112-141 defines "low-income individual" to mean "an individual whose family income is at or below 150 percent of the poverty line, as that term is defined in section 673(2) of the Community Services Block Grant Act (42 U.S.C. 9902(2), including any revision required by that section, for a family of the size involved."

available data to the base year of 2017. A median household income of 80 percent of LA County (approximately $45,000) is used as the low-income threshold.

Based on the CEQ *Environmental Justice Guidance under NEPA,* a community is considered an EJ community if any of the following criteria is met:

- At least 50 percent of the population in the affected community is minority or low-income; or
- The minority or low-income population in the affected community is meaningfully greater than the general population in the appropriate geographic unit of analysis. For this study, 10 percent is considered statistically meaningful greater than the population in LA County (based on similar Metro studies and methodologies used throughout the Metro service areas). A median household income 80 percent of LA County ($45,000) is used as the low-income threshold.

USDOT Order 5610.2C defines "disproportionately high and adverse effect on human health or the environment" as those impacts that are:

- Predominately borne by a minority population and/or a low-income population; or
- Suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Consistent with the USDOT Order v5610.2C and the FTA Circular 4703.1, when determining whether environmental effects of the Project on EJ populations are disproportionately high and adverse, the following were considered to the extent practicable:

- Will the project result in "adverse effects?"
- Will the project result in adverse effects predominately borne by an EJ population?
- Will the project result in adverse effects that would be suffered by the EJ population that would be appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-EJ population?
- Does the project propose mitigation and/or enhancement measures?
- Are there project benefits (off-setting benefits) that would accrue to the EJ population as compared to non-EJ populations?
- Does the project affect a resource that is especially important to an EJ population? For example, does the project affect a resource that serves an especially important social, religious, or cultural function for an EJ population?

The benefits and burdens to EJ populations (particularly areas with the highest concentration of EJ populations) are examined against comparable non-EJ populations. Comparable non-EJ populations within the EJ Affected Area include those areas with a higher percentage of non-minority or a lower percent of low-income populations.

4.22.2 Affected Environment/Existing Conditions

4.22.2.1 Demographic and Socioeconomic Characteristics

The EJ Affected Area crosses the Cities of Los Angeles (including the Southeast Los Angeles community), Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, as well as the unincorporated Florence-Firestone community of LA County. Section 4.1.2.1 of the Land Use Section illustrates the land use distribution of the communities. Table 4.22.1 provides a summary of the demographic and socioeconomic characteristics (minority population and low-income population by percent) of the jurisdictions as a whole in which the LPA will be located. Based on the CEQ guidelines, a community is considered an EJ community if at least 50 percent of the population is minority or low-income, or if the minority or low-income population in the affected community is at least 10 percent higher than the average of the minority or low-income population in LA County. The percent of minority population for LA County is 73.1 percent; therefore, 10 percent higher is 83.1 percent. A community is considered an EJ community if the low-income population in the affected community is at least 10 percent higher than the median household income or a median household income less than 80 percent of LA County's median household income. LA County's median household income is $56,196. A median household income 80 percent of LA County is approximately $45,000 and is used as the low-income threshold.

Table 4.22.1. Percent Minority Population and Percent Low-Income of the Jurisdictions

Jurisdiction	Percent Minority Population [1]	Percent Low-Income[2]
County of Los Angeles[3]	73.1%	41.3%
City of Los Angeles – Southeast Los Angeles[4]	99.1%	69.2%
Florence-Firestone	99.4%	65.0%
Vernon	75.6%	43.8%
Huntington Park	98.7%	62.7%
Bell	94.7%	60.2%
Cudahy	97.3%	60.3%
South Gate	97.1%	51.5%
Downey	84.4%	34.5%
Paramount	95.0%	49.2%
Bellflower	82.4%	46.1%
Cerritos	83.9%	21.6%
Artesia	80.5%	36.1%

Source: U.S. Census Bureau, 2016; Metro, 2024z

Notes: [1] A minority is defined as an individual who identifies as any race or ethnicity except for non-Hispanic/Latino White Alone. The table shows the percent of the total population that identified as a minority based on the 2011-2015 ACS 5-year estimates.

[2] Low-income is defined as households with income less than $45,000, or approximately 80 percent of the 2015 median household income for Los Angeles County ($56,196). The table shows the percent of the total population that met the definition of low-income in the 2011-2015 ACS 5-year estimates (2015 ACS 5-Year Estimates Table B19001).

[3] LA County contain U.S. Census Bureau block group information for the entire county.

[4] Southeast Los Angeles data comes from U.S. Census Block Groups that fall within the Southeast Los Angeles community plan area.

Over 50 percent of the population for each jurisdiction are minorities. The jurisdictions with a percent minority population that is more than 10 percent higher than that for the County of Los Angeles are: Southeast Los Angeles, Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, and Cerritos. The communities with a percent low-income population with a median household income of less than 80 percent of LA County's median

household income (approximately $45,000) are: Southeast Los Angeles, Florence-Firestone, Huntington Park, Bell, Cudahy, and South Gate.

Race and Ethnicity

The EJ Affected Area includes several different racial and ethnic groups. As defined by the U.S. Census Bureau, "race" included in the census questionnaire generally reflects a social definition of race recognized in this country and does not attempt to define race biologically, anthropologically, or genetically. In addition, it is recognized that the race categories include racial and national origin or sociocultural groups. People may choose to report more than one race to indicate their racial mixture. People who identify their origin as Hispanic, Latino, or Spanish may be of any race. Table 4.22.2 characterizes the racial groups in the EJ Affected Area.

Table 4.22.2. Racial Characteristics of the Communities in the EJ Affected Area

Community	Percent Share of Total Population[1,2,3,4]						
	White Only	Black Only	American Indian or Alaskan Native Only	Asian Only	Native Hawaiian / Pacific Islander Only	Some Other Race Only	Two or More Races[5]
County of Los Angeles[6]	53.3%	8.3%	0.6%	14.1%	0.3%	19.6%	3.9%
City of Los Angeles – Southeast Los Angeles[7]	35.8%	8.7%	0.4%	0.8%	0.0%	53.4%	0.9%
Florence-Firestone	43.2%	3.4%	0.2%	0.2%	0.1%	50.1%	2.7%
Vernon	36.6%	0.0%	0.0%	7.3%	0.0%	56.1%	0.0%
Huntington Park	68.2%	0.7%	0.4%	0.8%	0.5%	28.2%	1.2%
Bell	69.8%	0.6%	0.5%	0.2%	0.2%	27.5%	1.1%
Cudahy	72.4%	1.0%	0.4%	1.1%	0.0%	23.2%	1.8%
South Gate	56.0%	1.8%	0.2%	1.7%	0.3%	38.7%	1.4%
Downey	65.4%	1.0%	0.0%	12.0%	0.0%	21.0%	0.5%
Paramount	51.0%	10.3%	0.2%	3.3%	1.1%	30.8%	3.2%
Bellflower	42.6%	13.0%	0.6%	10.2%	0.3%	30.2%	3.0%
Cerritos	29.7%	9.0%	0.4%	50.2%	0.0%	6.8%	3.8%
Artesia	37.4%	2.0%	0.2%	45.5%	0.0%	11.3%	3.6%

Source: U.S. Census Bureau, 2016; Metro, 2024z

Notes: [1] The U.S. Census Bureau racial categories in the census questionnaire generally reflect a social definition of race recognized in this country and does not attempt to define race biologically, anthropologically, or genetically. In addition, it is recognized that the race categories include racial and national origin or sociocultural groups. People may choose to report more than one race to indicate their racial mixture. People who identify their origin as Hispanic, Latino, or Spanish may be of any race.

[2] Data is from U.S. Census Bureau, 2011-2015 ACS 5-Year Estimates (Table B02001 RACE).

[3] This table includes race only and does not distinguish by ethnicity (Hispanic/Latino by origin). People who identify their origin as Hispanic, Latino, or Spanish may be of any race.

[4] Percent Share of Total Population shows what percentage of a given community total population is a given race (Percent Share of Total Population = Race Population in an Affected Community ÷ Total Population in Same Affected Community).

[5] Two or more races includes subcategories: "Two races including some other race" and "Two race excluding some other race, and three or more races".

[6] LA County contain U.S. Census Bureau block group information for the entire county.

[7] Southeast Los Angeles data comes from U.S. Census Block Groups that fall within the Southeast Los Angeles community plan area and intersects the EJ Affected Area.

The U.S. Census Bureau defines "ethnicity" as either "Hispanic or Latino" or "Not Hispanic or Latino." "Hispanic or Latino" is defined as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. People who identify as Hispanic, Latino, or Spanish may be any race. Table 4.22.3 characterizes the ethnic groups in the EJ Affected Area. Figure 4.22-1 illustrates the percent of the population identified as minority populations within the EJ Affected Area.

Table 4.22.3. Ethnicities of the Communities in the EJ Affected Area

Community	Percent Share of Total Population [1,2,3]							
			Non-Hispanic					
	Total Minority[4,5]	Hispanic of Any Race	Black Only	Asian Only	American Indian or Alaskan Native Only	Native Hawaiian/ Pacific Islander Only	Some Other Race Only	Two or More Races[6]
County of Los Angeles[7]	**73.1%**	48.2%	8.0%	14.0%	0.2%	0.2%	0.3%	2.2%
City of Los Angeles–Southeast Los Angeles[8]	**99.5%**	90.2%	8.2%	0.8%	0.1%	0.0%	0.1%	0.1%
Florence-Firestone	**99.2%**	95.8%	3.1%	0.2%	0.0%	0.0%	0.0%	0.0%
Vernon	**75.6%**	68.3%	0.0%	7.3%	0.0%	0.0%	0.0%	0.0%
Huntington Park	**98.6%**	97.0%	0.4%	0.7%	0.0%	0.4%	0.1%	0.1%
Bell	**96.3%**	95.3%	0.6%	0.2%	0.0%	0.2%	0.0%	0.0%
Cudahy	**96.6%**	94.8%	0.4%	1.0%	0.1%	0.0%	0.1%	0.1%
South Gate	**94.6%**	91.0%	1.6%	1.6%	0.0%	0.2%	0.0%	0.1%
Downey	**83.2%**	69.6%	1.0%	12.0%	0.0%	0.0%	0.0%	0.5%
Paramount	**94.6%**	78.9%	10.1%	3.3%	0.0%	1.0%	0.1%	1.2%
Bellflower	**79.6%**	54.1%	12.8%	10.1%	0.4%	0.3%	0.2%	1.7%
Cerritos	**79.2%**	17.4%	9.0%	49.7%	0.2%	0.0%	0.3%	2.5%
Artesia	**75.3%**	26.1%	2.0%	45.2%	0.0%	0.0%	0.0%	2.0%

Source: U.S. Census Bureau, 2016; Metro, 2024z

Notes: **Bolded** entries identify the minority communities

[1] The U.S. Census Bureau defines "ethnicity" as either "Hispanic or Latino" or "Not Hispanic or Latino." "Hispanic or Latino" is defined as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. People who identify as Hispanic, Latino, or Spanish may be any race.

[2] Data is from US Census Bureau, 2011-2015 ACS 5-Year Estimates

[3] Percent Share of Total Population shows what percentage of a given community total population is a given ethnicity or minority (Percent Share of Total Population = Ethnic/Minority Population in an Affected Community ÷ Total Population in Same Affected Community).

[4] A minority is defined as an individual who identifies as any race or ethnicity except for non-Hispanic/Latino White Alone. Percent of minority population is determined using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community.

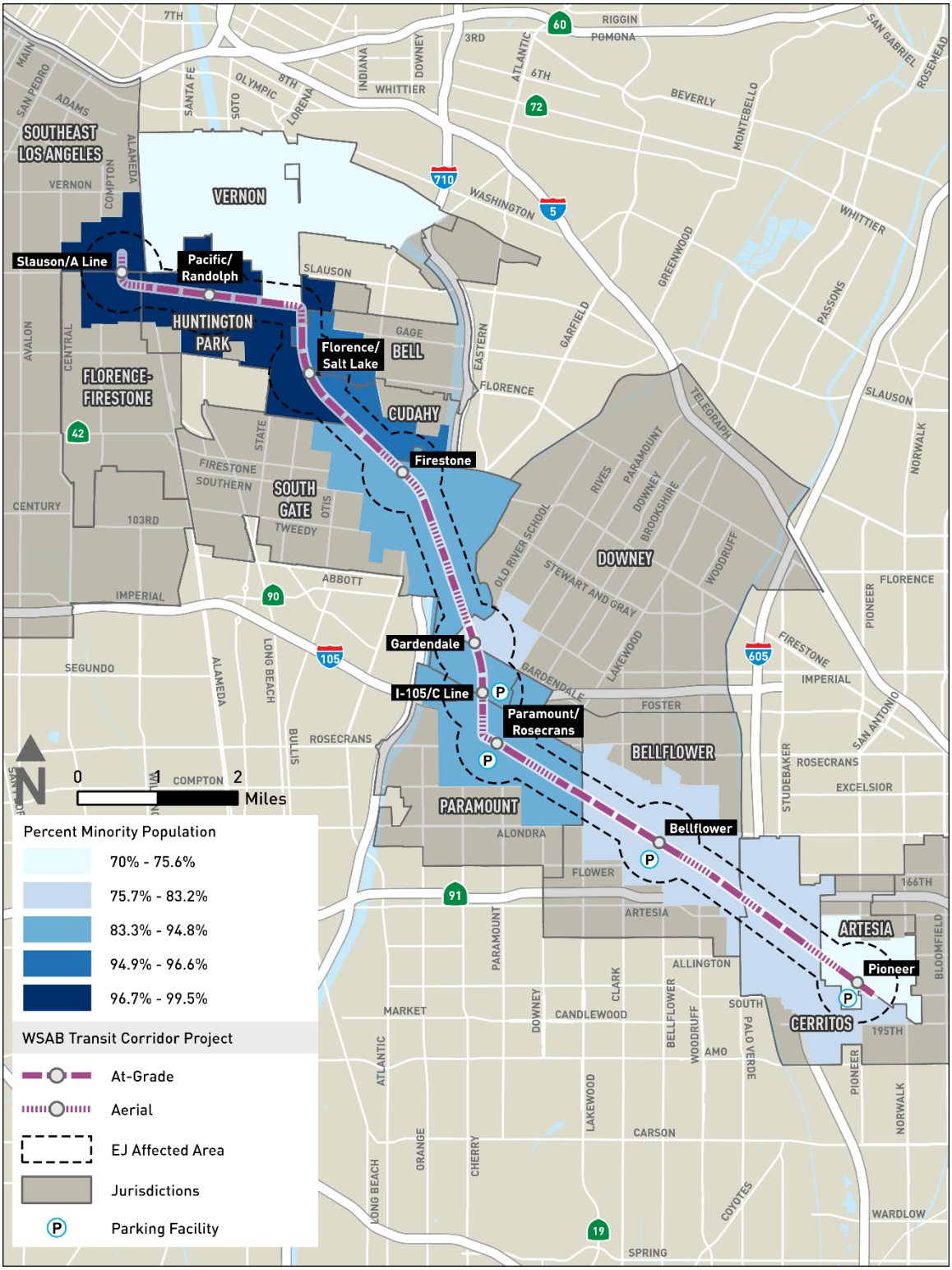
[5] A community is considered an EJ community if the minority population in the affected community is at least 10 percent higher than the average of the minority population in LA County. The percent of minority population for LA County is 73.1 percent; therefore, 10 percent higher is 83.1 percent.

[6] Two or more races includes subcategories: "Two races including some other race" and "Two race excluding some other race, and three or more races."

[7] LA County contain U.S. Census Bureau block group information for the entire county.

[8] Southeast Los Angeles data comes from U.S. Census Block Groups that fall within the Southeast Los Angeles community plan area and intersects the EJ Affected Area.

Figure 4.22-1. Percent of Population Identified as Minority Populations in the EJ Affected Area



Source: Metro 2024z
Notes: Minority is defined as an individual who identifies as any race or ethnicity except for non-Hispanic/Latino White Alone. Percent of minority population is illustrated using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community.

Based on the 2011-2015 ACS, Southeast Los Angeles (99.5 percent), Florence-Firestone (99.2 percent), Huntington Park (98.6 percent), Cudahy (96.6 percent), and Bell (96.3 percent) have the highest percent of minority populations. Artesia (75.3 percent), Vernon (75.6 percent), Cerritos (79.2 percent) and Bellflower (79.6 percent) have the lowest percent of minority populations.

Low-Income Population

As previously discussed, the HUD threshold of income limits is used to define "low-income." The 2015 median household income for LA County ($56,196) is used because it is the closest available data to the base year of 2017. A median household income 80 percent of LA County (approximately $45,000) is used as the low-income threshold. A community is considered a low-income community if the percent low-income is at least 10 percent higher than the LA County average, or the median household income is less than 80 percent of the median household income for LA County.

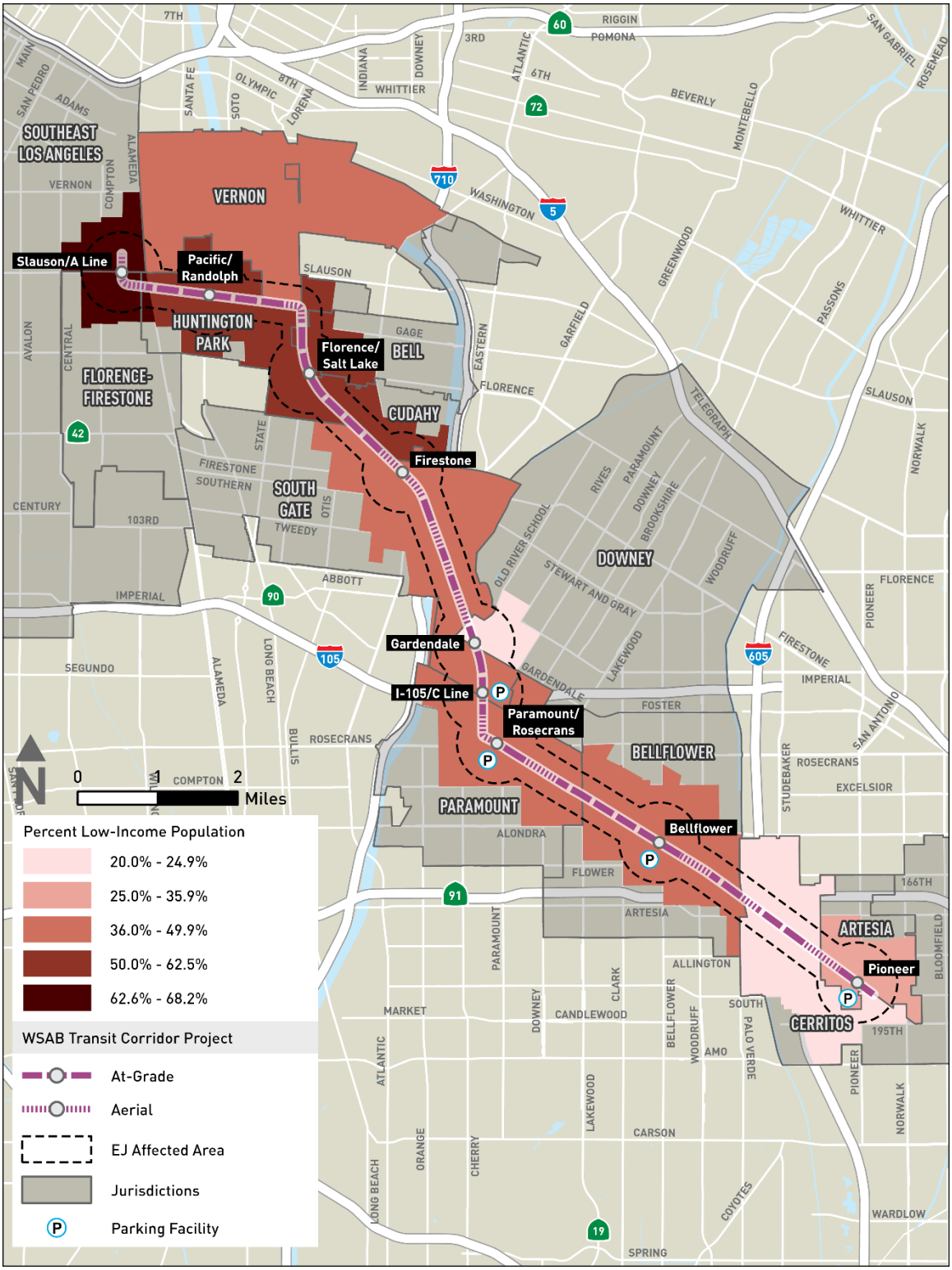
Table 4.22.4 shows the median household income and percent of low-income households for communities in the EJ Affected Area. Figure 4.22-1 illustrates the percent of the population identified as low-income within the EJ Affected Area. Affected communities in the EJ Affected Area identified as low-income communities include: City of Los Angeles – Southeast Los Angeles, Florence-Firestone, Huntington Park, Bell, and Cudahy. Cerritos, Artesia, and Downey have the highest median household incomes (over $70,000 median household income) and the lowest percent of low-income households (less than 36 percent of the population are low-income). Southeast Los Angeles has the lowest median household income ($27,941) and the highest percent of low-income households (67.5 percent). Florence-Firestone (66.4 percent), Huntington Park (62.5 percent), Cudahy (61.9 percent), and Bell (59.5 percent) also have high percent low-income households.

Table 4.22.4. Median Household Income and Percent Low-Income for the Communities in the EJ Affected Area

Affected Community	Median Household Income[1,2]	Percent Low-Income[3,4]
County of Los Angeles[5]	$56,196	41.3%
City of Los Angeles – Southeast Los Angeles[6]	**$27,941**	**67.5%**
Florence-Firestone	**$28,145**	**66.4%**
Vernon	$61,250	43.8%
Huntington Park	**$37,916**	**62.5%**
Bell	**$34,958**	**59.5%**
Cudahy	**$36,109**	**61.9%[8]**
South Gate	$47,341	49.8%
Downey	$76,149	20.1%
Paramount	$53,940	43.6%
Bellflower	$54,242	46.6%
Artesia	$74,715	35.8%
Cerritos	$88,730	24.1%

Source: U.S. Census Bureau, 2016, Metro, 2024z
Notes: **Bolded** entries identify the low-income communities
[1] Median Household Income in 2015 Inflation-Adjusted Dollars.
[2] Low-income is defined as households with income less than $45,000, or approximately 80% of the 2015 median household income for Los Angeles County ($56,196). (2015 ACS 5-Year Estimates Table B19001), or if the percent low-income is at least 10 percent higher than the LA County average (51.3 percent).
[3] Percent Low-Income is the percent of total households within an affected community with a household income of less than $45,000.
[4] This analysis excludes block groups with zero total households. Only one block group in the Affected Area (Downey) contains zero total households (LA County Rancho Los Amigos Medical Center).
[5] LA County contain U.S. Census Bureau block group information for the entire county.
[6] Southeast Los Angeles data comes from U.S. Census Block Groups that fall within the Southeast Los Angeles community plan area and intersects the EJ Affected Area.

Figure 4.22-2. Percent of Population Identified as Low-Income in the EJ Affected Area



Source: Metro 2024z
Notes: The percent of low-income is illustrated using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community

Summary of Demographic Data

Based on the CEQ *Environmental Justice Guidance under NEPA,* the EJ community criteria discussed in Section 4.3.1.2, and the data provided in Table 4.22.3 and Table 4.22.4, each identified community in the EJ Affected Area is considered an EJ community.

Communities with the highest percent of minorities

- Southeast Los Angeles
- Florence-Firestone
- Huntington Park
- Cudahy
- Bell

Communities with the highest percent of low-income households

- Southeast Los Angeles
- Florence-Firestone
- Huntington Park
- Cudahy
- Bell

Communities with the lowest percent of minorities (most non-minority population)

- Artesia
- Vernon
- Cerritos
- Bellflower
- Downey

Communities with the lowest percent of low-income households (highest median income/lowest percent low-income)

- Downey
- Cerritos
- Artesia
- Paramount
- Vernon

Distribution of EJ Populations

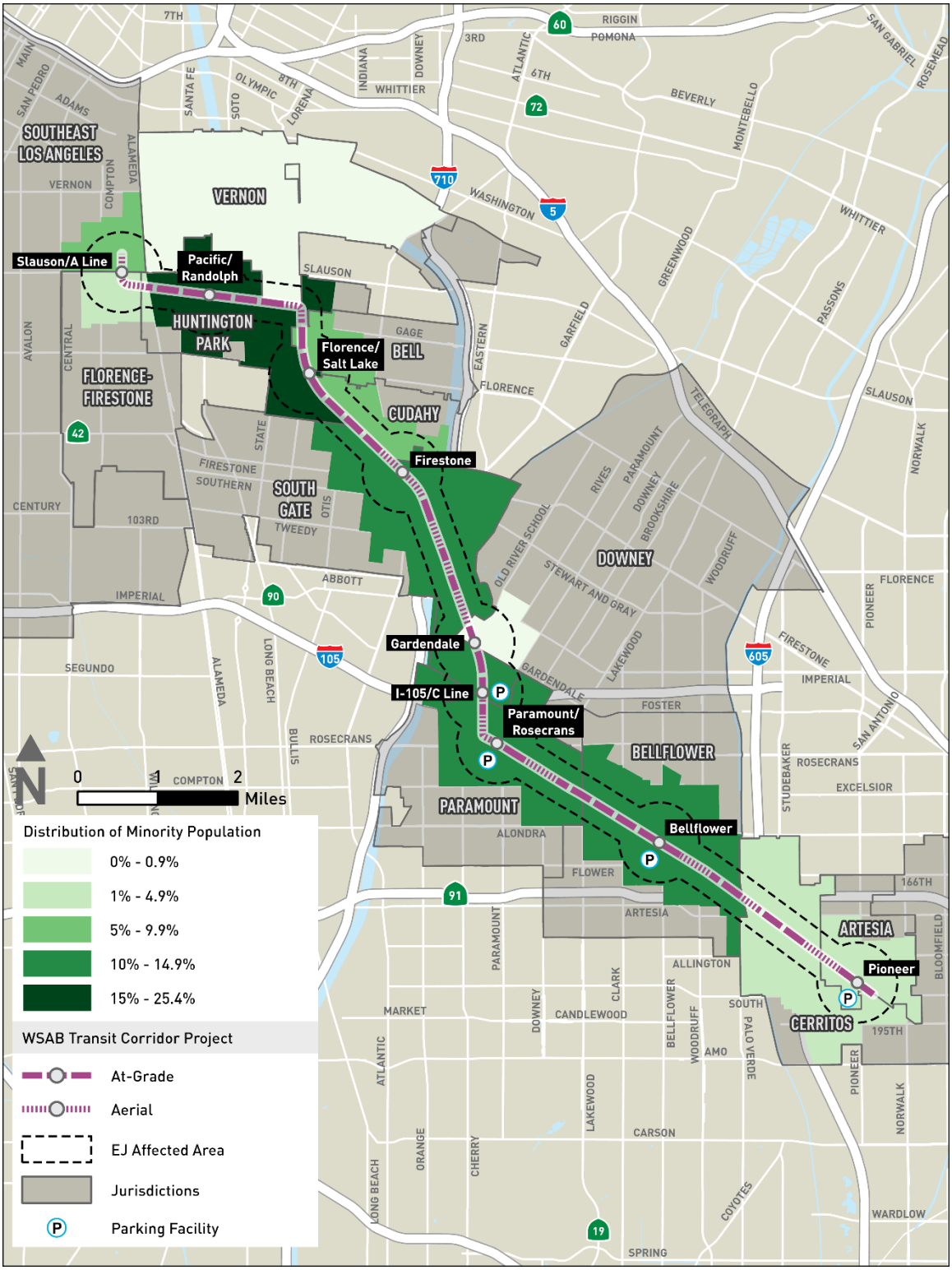
The distribution of the EJ populations presented in this section is the number of minority/low-income persons within an affected community as a proportion of the total minority/low-income persons within the entire EJ Affected Area. The distribution shows the percentage of the EJ Affected Area's total minority or low-income population within a given affected community and is provided in Table 4.22.5. The highest percentage of population identified as minority or low-income are located in Huntington Park, South Gate, Paramount, and Bellflower. Figure 4.22-3 and Figure 4.22-4 show the distribution of the populations identified as minority and low-income in the EJ Affected Area.

Table 4.22.5. Distribution of EJ Populations within the EJ Affected Area

Affected Community	Minority Distribution Percent[1,2]	Low-Income Distribution Percent[1,3]
City of Los Angeles – Southeast Los Angeles[4]	6.5%	6.7%
Florence-Firestone	4.3%	4.5%
Vernon	0.0%	0.0%
Huntington Park	25.4%	27.2%
Bell	6.2%	6.6%
Cudahy	6.6%	7.1%
South Gate	12.0%	11.2%
Downey	0.7%	0.3%
Paramount	14.3%	10.9%
Bellflower	14.9%	18.3%
Artesia	4.4%	4.1%
Cerritos	4.6%	2.9%

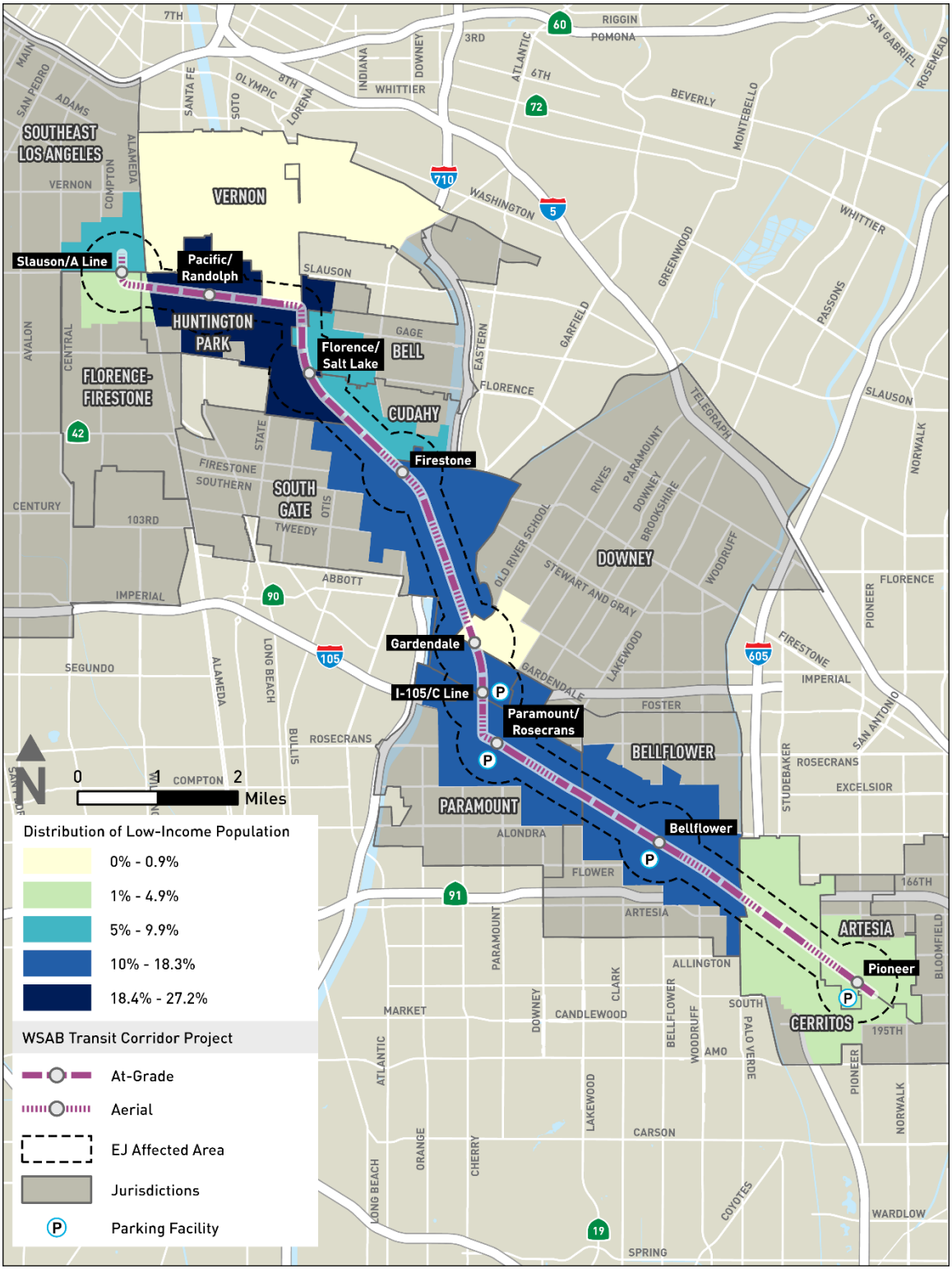
Source: U.S. Census Bureau 2016; Metro 2024z
Notes: Does not equal to 100 percent due to rounding.
[1] Distribution is the number of minority/low-income persons within an affected community as a proportion of (divided by) the total minority/low-income persons within the EJ Affected Area. Distribution shows what percentage of the EJ Affected Area's total minority or low-income population are within a given affected community. (Distribution = Minority or Low-Income Population in an Affected Community ÷ Total Minority or Low-Income Population in the entire EJ Affected Area).
[2] A minority is defined as an individual who identifies as any race or ethnicity except for non-Hispanic/Latino White Alone. Percent of minority population is illustrated using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community.
[3] Low-income is defined as households with income less than $45,000, or approximately 80 percent of the 2015 median household income for Los Angeles County. Percent Low-Income is the percent of total households within an affected community with a household income of less than $45,000.
[4] Southeast Los Angeles data comes from U.S. Census Block Groups that fall within the Southeast Los Angeles community plan area and intersects the EJ Affected Area.

Figure 4.22-3. Distribution of the Population Identified as Minority Populations in the EJ Affected Area



Source: Metro 2024z
Notes: The percent of low-income is illustrated using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community

Figure 4.22-4. Distribution of the Population Identified as Low-Income Populations in the EJ Affected Area



Source: Metro 2024z
Notes: The percent of low-income is illustrated using 2011-2015 ACS 5-year estimates for the Census Block Groups that intersect both the EJ Affected Area and affected community

4.22.2.2 Public Participation

Public outreach for the Draft EIS/EIR included a series of outreach meetings (i.e., public and interagency scoping meetings, community update meetings, and community workshops), and outreach activities (i.e., direct mail notices, project hotline, dedicated project email and website, multi-lingual project pamphlets, and a project Facebook page). Over 20 public meetings for the Project were held. The public participation strategy was developed to encourage active participation and solicit input from groups that may be affected by and/or benefit from the Project.

The Draft EIS/EIR was released for public review and comment in July 2021 for 45 days, which was then extended to a 60-day public review period through September 28, 2021, to provide additional time for the public to respond. During the 60-day public review period, Metro hosted four virtual public hearings, four virtual community information sessions, and over 19 pop-up booths for in-person engagement at locations throughout affected jurisdictions. In addition, Metro held approximately 20 briefings to key stakeholders, elected officials, corridor cities, and other agencies. In total, approximately 450 submissions were received during the public review and comment period.

In January 2022, the Metro Board of Directors identified Alternative 3 as the LPA. Four community open houses were held in June 2023 to update the community on the LPA, including refinements, and the progress of the Final EIS/EIR.

Notifications for public meetings were through various communication tools, including printed materials, public signage, and social media (i.e., Metro and local city websites, Facebook, Twitter, and local transit-oriented blogs), the project website, and briefings. Outreach meetings were held in several of the affected EJ communities and complied with the ADA. Translation services were provided for several languages, including Spanish, Japanese, and American Sign Language, and printed materials were provided in English, Spanish, Japanese, and Korean based on the ethnic makeup of the affected communities and requested languages. For those unable to attend the meetings, a video recording of the formal presentations was made available to the public within one week of the conclusion of the meting series. For more information regarding the public outreach and consultation process, see Chapter 7, Public Outreach, Agency Consultation, and Coordination, of this Final EIS/EIR.

4.22.3 Environmental Consequences/Environmental Impacts during Operations

4.22.3.1 No Build Alternative

The No Build Alternative includes local transportation-related projects in the affected jurisdictions, as identified in Table 2-4 in Chapter 2, Project Description/Alternatives Considered. These projects would likely result in effects on environmental justice communities typically associated with transit, highway, bicycle, and pedestrian facilities and roadway projects. Projects planned under the No Build Alternative would undergo separate environmental review to determine whether the projects would adversely affect environmental justice communities.

Under the No Build Alternative, the LPA would not be developed. The No Build Alternative would result in adverse land use effects as the No Build Alternative would be inconsistent with several applicable SCAG 2016-2040 RTP/SCS policies and several applicable local land use plans and policies. The adverse effects related to land use would be distributed among the EJ communities and non-EJ communities. The effect would not be disproportionately high and adverse to EJ communities.

The No Build Alternative establishes a baseline for comparison to evaluate potential traffic effects of the LPA. Daily vehicle traffic within the project Study Area is projected to increase under the No Build Alternative compared to existing conditions. Community mobility would be expected to deteriorate with the increased regional traffic congestion anticipated between now and 2042, which could result in a long-term reduction in access to public transportation, businesses, and community resources, as well as reduced emergency vehicle access. The No Build Alternative would not achieve the transportation benefits from the LPA, such as improved circulation, reliability, and access. The No Build Alternative would not provide the positive benefits of increased mobility and connectivity of the Gateway Cities region and the associated EJ populations to the Metro rail system.[19]

4.22.3.2 Locally Preferred Alternative and MSF

The following environmental topics will not have adverse effects; therefore, these environmental topics will not result in a disproportionately high and adverse effect to EJ communities and are not further discussed:

- Transportation (transit operations[20], active transportation[21], off-street parking, and rail and vehicular freight)
- Land Use (operations; land uses compatibility, regional plans)
- Communities and Neighborhoods (operations)
- Visual and Aesthetics (operations visual character and quality of scenic resources; construction)
- Air Quality
- Greenhouse Gas Emissions
- Ecosystems and Biological Resources
- Geotechnical, Subsurface, Seismic Hazards
- Hazards and Hazardous Materials
- Water Resources
- Energy
- Electromagnetic Fields
- Archaeological, Historical, and Paleontological Resources
- Traditional Cultural Properties/Tribal Cultural Resources
- Parklands and Community Facilities (operational access and function of parklands, community facilities)
- Economic and Fiscal Impacts
- Safety and Security
- Section 4(f) Resources

The EJ Affected Area encompasses all EJ communities. As such, the environmental effects of the LPA, including the MSF, will be predominantly borne by EJ communities. This section

[19] The Gateway Cities region of Los Angeles County includes the Cities of Artesia, Avalon, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Habra Heights, Lakewood, La Mirada, Long Beach, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Vernon, Walnut Park, and Whittier, as well as some unincorporated areas of Southeast Los Angeles County.

[20] Adverse construction effects will not occur related to transit; however, this topic is discussed in Section 4.22.4.2 because the transit system is an important resource for EJ communities.

[21] Although adverse effects will not occur related to active transportation, this topic is discussed in Section 4.22.3.2 because the pedestrian and bicycle system is an important resource for EJ communities.

focuses on whether the LPA and MSF will result in disproportionately high and adverse effects to EJ populations identified within the EJ Affected Area. The analysis compares areas with high concentrations of EJ populations (e.g., Southeast Los Angeles, Huntington Park, Paramount, and Bellflower) with comparable non-EJ populations in the EJ Affected Area (e.g., Cerritos). As further discussed below, these types of environmental effects occur across the Metro system corridor in EJ communities and non-EJ communities. Mitigation measures will be implemented with similar type and quality throughout the EJ Affected Area.

As demonstrated for the environmental topics in Chapters 3 and 4, a majority of the adverse effects will occur in Paramount, South Gate, and Huntington Park.

A review of Metro LRT projects constructed and operated in Los Angeles County was conducted to further assess the potential for disproportionately high and adverse effects. This review of the Metro LRT system identified several LRT systems comparable to the Project based on similar technologies, alignment types, and service area. These include the Metro E (Expo) Line, L (Gold) Line, and C (Green) Line. These LRT systems are adjacent to communities that contain both EJ and non-EJ populations. Based on an analysis of current census data, the non-EJ populations along these LRT systems include[22, 23]:

- Metro E (Expo) Line: Santa Monica, West Los Angeles, Rancho Park, Century City, Cheviot Hills, Beverlywood, Pico-Robertson
- Metro L (Gold) Line: Elysian Park, Pasadena
- Metro C (Green) Line: El Segundo, Manhattan Beach, Hawthorne, Redondo Beach

The non-EJ communities identified within these Metro LRT system corridors experienced environmental effects for construction and operations similar to those identified for the EJ communities in the EJ Affected Area of the LPA and MSF. Across the Metro projects, adverse effects and mitigation in these non-EJ communities were addressed in a similar manner as EJ communities. Metro has implemented each LRT system guided by established design guidelines as well as through the requirements of project-specific environmental documents. The review of Metro LRT projects indicates that mitigation measures for the LPA will be implemented throughout the EJ Affected Area with similar type and quality as other Metro projects.

Furthermore, as demonstrated in the following analysis, the implementation of mitigation (Section 4.22.3.5) and off-setting benefits (Section 4.22.3.5) are considered in determining if a disproportionately high and adverse effect will occur in an EJ community in the EJ Affected Area. Off-setting benefits of the LPA to the EJ communities include the provision of an alternative mode of transportation; increased mobility; increased transit access to areas that have been previously underserved by regional transit; improved connectivity of the EJ populations to places of employment, community facilities, and education; air quality improvements; and economic and fiscal benefits to the EJ communities.

---

22 The communities identified contain census tracts with non-EJ populations within 0.25 mile of the Metro E (Expo) Line, L (Gold) Line, and C (Green) Line alignments and 0.5 mile of the corresponding LRT stations.

23 Metro Countywide Planning and Development Staff, May 2021. With the opening of the Regional Connector in June 2023, the L (Gold) Line has been eliminated and service on the A Line and E Line extends through 7th Street/Metro Center to eastern and northern LA County.

Transportation

Traffic Operations: As summarized below and provided in greater detail in Section 3.4.1 of Chapter 3, Transportation, the LPA will have adverse effects on traffic operations related to intersection delay as measured by level-of-service caused by at-grade rail crossings, park-and-ride and kiss-and-ride traffic, and lane closures. Operation of the MSF site will not adversely affect roadway intersections. Adverse effects related to traffic operations may occur in either the AM peak period, the PM peak period, or during both peak periods. The LPA will have 19 intersections with adverse effects on traffic operations related to intersection level-of-service delays caused by at-grade rail crossings, increased traffic, and lane closures:

- Two intersections on Florence Avenue/California Avenue in Huntington Park and Huntington Park/Bell
- Eight intersections along Randolph Street in Huntington Park[24]
- Three intersections in Huntington Park/Bell
- Two intersections in South Gate
- Two intersections in Bellflower
- Two intersections in Cerritos

Implementation of Mitigation Measures TRA-1 through TRA-17, which are specific intersection modifications, will reduce adverse effects at the intersections. These measures are described in Section 3.5.2.1 of Chapter 3, Transportation. Even with implementation of Mitigation Measures TRA-1 through TRA-17, adverse effects at 12 intersections located in Huntington Park and Huntington Park/Bell will remain:

- Randolph Street/Alameda Street (West), Huntington Park
- Randolph Street/Albany Street, Huntington Park
- Randolph Street/Santa Fe Avenue, Huntington Park
- Randolph Street/Rugby Avenue, Huntington Park
- Randolph Street/Pacific Boulevard, Huntington Park
- Randolph Street/Seville Avenue, Huntington Park
- Randolph Street/Miles Avenue, Huntington Park
- Randolph Street/State Street, Huntington Park
- Gage Avenue/Salt Lake Avenue (West), Huntington Park/Bell
- Gage Avenue/California Avenue, Huntington Park/Bell
- Florence Avenue/California Avenue (West), Huntington Park
- Florence Avenue/California Avenue (East) (AM only), Huntington Park/Bell

Given that there are EJ populations across the corridor, the traffic effects of the LPA will be predominantly borne by EJ communities. The traffic effects will occur in both EJ communities and areas with non-EJ populations. Adverse effects after mitigation will occur in Huntington Park, which has the highest concentration of EJ populations, and Bell which has the lowest concentration of EJ populations and a higher concentration of non-EJ population compared to Huntington Park.

[24] Under the LPA, the intersections of Randolph St/Alameda Street (West) and Randolph Street/Alameda Street (East) will operate with one set of traffic signals. Consistent with the Draft EIS/EIR, analysis was conducted to reflect the operation as a single intersection, and one set of delay/LOS was reported.

As shown in Sections 3.4.1 and 3.5.2.1 in Chapter 3, Transportation, after mitigation the number of intersections with adverse effects and increased vehicle delays are the highest in Huntington Park (12 intersections, with 8 of those intersections along Randolph Street). The number of intersections that will be adversely affected after mitigation in Huntington Park will be appreciably more than those on the border of Huntington Park and Bell (three intersections)[25].

Metro will coordinate with applicable local cities and agencies, and mitigation measures will be similarly implemented along the LPA alignment as necessary, regardless of the composition of the population. As discussed in Section 3.5.2.1, mitigation measures for each affected intersection generally included three types of modifications: signalizing intersections that are currently stop controlled; adding lanes (right, through, and/or left); and/or extending turn bays (right or left). In developing the mitigation options, consideration was given to the efficacy of the mitigation (efficacy of reducing intersection delay) and avoidance of right-of-way, access, and other impacts to adjacent properties.

The LPA will also provide benefits to the affected EJ communities, including improved transit service, transit access, regional mobility, and air quality. The LPA will also include three new LRT stations (Slauson/A Line, Pacific/Randolph, and Florence/Salt Lake Stations) near Huntington Park and Bell, which will be a benefit to those communities. As discussed in Section 3.4.1 in Chapter 3, Transportation, the LPA will result in a benefit by reducing intersection delay at several intersections across the corridor, including in Huntington Park. This will occur for a variety of reasons, including implementation of project measures (summarized in Section 3.5.1), optimized traffic signal timing, reconfiguration of roadway lanes, and/or changes in traffic flow. Improvements in delay will occur at the intersection where modifications occur and potentially at adjacent intersections due to improvements in traffic flow. Under the LPA, travel time on transit will be shorter than existing transit service across the corridor.

After implementation of mitigation, Huntington Park will have disproportionately high and adverse effects related to traffic operations. Taking into account the implementation of mitigation measures and the off-setting benefits as described above and in Section 4.22.3.5, the LPA will not result in disproportionately high and adverse effects to EJ communities within the EJ Affected Area.

Active Transportation (Bicycle/Pedestrian Facilities): The potential conflict with planned bike paths in local plans are discussed under the "Land Use and Development" heading below. As discussed in Section 3.4.3 of Chapter 3, Transportation, where project features will encroach on existing bicycle facilities (i.e., Paramount Bike Trail, Bellflower Bike Trail, and Artesia Historic District Recreation Trails) or sidewalks, these facilities will be realigned or reconstructed as part of the LPA. Permanent impacts will be avoided. The pedestrian and bicycle facilities will remain operational and function will be maintained. The LPA will not result in adverse effects related to active transportation. The LPA will include enhancements to pedestrian walkways in the vicinity of the stations. Thus, the LPA will not result in disproportionately high and adverse effects related to active transportation to EJ communities in the EJ Affected Area.

[25] Of the number of intersections identified for Huntington Park and Bell, three intersections are along the Huntington Park and Bell city boundaries.

Parking: As shown in detail in Tables 3-18 and 3-19 in Chapter 3, Transportation, the LPA will result in the permanent loss of approximately 450 on-street and 95 off-street parking spaces combined in cities along the LPA. The LPA will add approximately 2,800 parking spaces at 5 of the new transit stations. In the Cities of Los Angeles-Southeast Los Angeles, Huntington Park, and South Gate the loss of on-street parking due to the LPA will result in a decrease in the parking supply below the observed utilization. The physical loss of on-street parking in these cities could contribute to drivers circulating along adjacent roads as they attempt to find available parking. This would cause an increase in localized traffic and delay on roadways and at intersections, including idling and increased vehicular emissions. However, the parking supply on adjacent blocks and surrounding streets will have sufficient capacity to accommodate those utilizing on-street parking with minimal circulation. Additionally, Mitigation Measure TRA-20 (Parking Mitigation Program [Permanent]) will be implemented at all locations where implementation of the LPA results in a permanent, physical loss of on-street parking.

In seven locations off-street parking will be removed permanently, affecting approximately 95 parking spaces. These properties are located in Huntington Park, Vernon, South Gate, and Cerritos. Removal of off-street parking spaces will not cause the off-street parking supply to decrease below the respective city parking code requirements and, therefore, will not result in an adverse effect.

Dedicated transit parking will be provided at the Firestone, I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations. At stations where transit parking is not provided, it is anticipated that demand will shift to stations with transit parking or drivers will find another way to complete their trip. Similarly, at stations with transit parking where demand is projected to exceed the number of parking spaces provided, it is anticipated that over time some drivers will seek parking at other stations where there is still capacity within dedicated transit parking or shift to other modes. Therefore, long-term adverse impacts associated with spillover parking will not occur.

As discussed in Section 3.4.4 and summarized in Table 3-20 in Chapter 3, Transportation, when transit demand is forecast at all nine stations along the LPA, the corridor-wide transit parking demand exceeds the total parking supply, resulting in a deficit of 10 parking spaces. However, when parking demand is limited to the 5 stations with transit parking, overall parking demand throughout the corridor decreases by approximately 60 spaces, and a surplus of 50 parking spaces is projected. The two forecasts show that there will be adjustments to demand if passengers seeking to park at stations encounter limitations of supply, with these adjustments being either a decrease in demand, or a shift to a station with parking. Therefore, there will not be adverse impacts associated with spillover parking. While adverse effects related to spillover parking are unlikely, Mitigation Measure TRA-19 (Parking Monitoring and Community Outreach), as described in Section 3.5.2.4, will be implemented. The mitigation measure will apply to all stations, including stations where no dedicated transit parking will be provided.

The MSF will not affect on- or off-street parking availability because the MSF will not create a demand for on-street parking spaces and the MSF site will remove off-street parking and the business(es) that utilize that parking.

Adverse effects related to parking could affect communities in the vicinity of each station area, including the Southeast Los Angeles community, unincorporated Florence-Firestone community of LA County, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos. As the communities in the EJ Affected Area are all EJ communities, environmental effects of the LPA will be predominantly borne by EJ communities. Among the areas experiencing parking effects, City of Los Angeles – Southeast Los Angeles, Huntington Park, and Bellflower have the highest concentrations of EJ populations while Downey has a higher concentration of non-EJ populations. The parking effects will occur in both EJ communities with high concentrations of EJ populations as well as areas with comparable non-EJ populations (Downey). The magnitude of the effects will be similar across the corridor and will not be concentrated in one community. The LPA will not result in an appreciably more severe or greater in magnitude adverse effect in areas with EJ populations compared to areas with non-EJ populations.

As described in Section 4.22.3.5, the LPA will also provide benefits to the affected EJ communities, including improved transit service and transit access, regional mobility, and air quality. With implementation of mitigation measures and in consideration of the off-setting benefits to the affected EJ communities, the LPA will not result in disproportionately high and adverse effects related to parking to EJ communities within the EJ Affected Area.

Land Use and Development

As discussed in Section 4.1.3 of the Land Use Section, the LPA will preempt the future development and implementation of Class I bicycle paths in the local bicycle plans along Salt Lake Avenue (Huntington Park, Bell, Cudahy), north of Rayo Avenue and south of the Los Angeles River (South Gate), and south of Main Street (South Gate). While planned, the bike facilities are concepts in the local plans and are not funded nor scheduled for implementation in local capital improvement budgets/programs. The LPA will be inconsistent with the current local plans and an adverse effect will occur.

With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) described in Section 4.1.4 of the Land Use Section, Metro, as appropriate, will support preparation of amended language for each affected local plan consistent with each city's mobility and connectivity goals. As further discussed in Section 4.1.3.2 in the Land Use Section, sufficient space will be available to accommodate alternative bike path classifications along the streets adjacent to the LPA. These Class II and Class III bike facilities will maintain connectivity and be supportive of the goals identified in the bicycle plans. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Therefore, an adverse effect related to the inconsistency with local plans will still occur after implementation of Mitigation Measure LU-1 (Consistency with Bike Plans).

The LPA could have adverse effects related to a conflict with local plans in Huntington Park, Bell, Cudahy, and South Gate. As the communities in the EJ Affected Area are all EJ communities, the effects of the LPA will be predominantly borne by EJ communities. Huntington Park and South Gate have the highest concentration of EJ populations, while Bell and Cudahy have higher concentrations of non-EJ populations. Adverse effects will be similar for Huntington Park, Bell, Cudahy, and South Gate and will occur in both EJ communities and areas with non-EJ populations. Mitigation will be similarly implemented along the LPA alignment, as necessary.

As discussed in Section 4.22.3.5, the LPA, including the MSF site, will also provide benefits to the affected EJ communities, including a reliable, fixed guideway transit service that will improve mobility, and increased transit connectivity and access to areas that have been previously underserved by regional transit. The LPA will support the transportation and connectivity goals in local plans. With implementation of mitigation measures and in consideration of the off-setting benefits to the affected EJ communities, the LPA will not result in disproportionately high and adverse effects related to land use planning in EJ communities in the EJ Affected Area.

Acquisitions and Displacements

As discussed in Section 4.3.3 in the Acquisitions and Displacements Section, the LPA will permanently displace businesses and/or residential units in Southeast Los Angeles, Huntington Park, Cudahy, South Gate, Paramount, Bellflower, and Artesia. The MSF will require the displacement of one business and no residential units. [26] As shown in Table 4.3.4, Southeast Los Angeles will have three residential units (one single-family and two multifamily units) displaced; Huntington Park will have eight multifamily units displaced; and Artesia will have two single-family units displaced in the EJ Affected Area.[27]

The nursery business (South Gate) and sports center (Bellflower) will be acquired and displaced by the LPA, including the MSF; however, these businesses do not serve especially important social, religious or cultural functions for the surrounding EJ populations. Although the businesses provide employment, the facilities are not large employment centers.

Metro will comply with the Uniform Act, California Relocation Act, and other applicable regulations, and no mitigation measures are required. No adverse effects from acquisitions and displacements will occur for the LPA. Compliance with the above regulations is standard practice for Metro and is implemented similarly throughout Metro's system in both EJ and non-EJ communities. As described in Section 4.22.3.5, the LPA will also provide benefits to the affected EJ communities, including improved transit service and transit access, regional mobility, and air quality. With compliance with the Uniform Act, California Relocation Act, and other applicable regulations and the consideration of off-setting benefits to EJ communities, the LPA will not result in disproportionately high and adverse effects related to acquisitions and displacements to EJ communities in the EJ Affected Area.

Visual and Aesthetics

As discussed in Section 4.4.2.4 of the Visual and Aesthetics Section, the existing landscaping and decorative wall on the south side of the World Energy storage tracks on Somerset Boulevard in Paramount could be removed, which will make views of the storage tank cars on the railroad tracks more apparent along Somerset Boulevard. Views of the storage tracks will not be visually compatible with the surrounding residential area, and residents will be sensitive to the change in visual character. Additionally, the LPA will remove the "Belle" public art cow

[26] Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business in the City of Bellflower operates as one business. This business will be affected by the MSF site and will result in approximately 75 displaced employees.

[27] Two parcels zoned as residential use will be acquired in the City of Artesia (APN 7039-012-004 and APN 7039-012-012). However, parcel APN 7039-012-012 does not currently contain a single-family residence building and no residents reside on-site. The count above considers this existing condition.

statue, which has aesthetic value to Bellflower. The MSF will not adversely affect views of scenic resources.

Project Measures VA PM-1 through VA PM-8 will be implemented to minimize visual effects; these measures include compliance with design standards, incorporation of public art at station areas, incorporation of landscaping at TPSSs in residential areas, maintaining or replacing the existing landscaping and barriers that face residential areas at the MSF site, directing light away from surrounding properties, and providing a vertical screening element on top of soundwalls on aerial structures to block the line-of-sight between the LRT vehicles on the aerial structures and the rear yards of adjacent residential properties where soundwalls are not sufficiently tall to block that line-of-sight.

With implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle"), no adverse effects will occur. Views of the storage tank cars will remain obstructed along Somerset Boulevard and the "Belle" public art cow statue will be relocated to a city-approved location in Bellflower, subject to a condition assessment detailing the current physical condition of the artwork. Removal of the public art cow statue will not conflict with or detract from the visual character of the portion of the PEROW on which the public art statue is sited. In addition, the statue represents the city's origins as a dairy community, which may have social importance to the community of Bellflower as a whole but may not have especially important social, religious, or cultural importance for EJ communities. The relocation to a city-approved location will not change the public art statue's importance to Bellflower and will not result in an adverse effect. Therefore, with implementation of mitigation and in consideration of off-setting benefits as described in Section 4.22.3.5, the LPA will not result in disproportionately high and adverse effects related to visual and aesthetics in EJ communities in the EJ Affected Area.

Noise and Vibration

Noise: As discussed in Section 4.7.3 of the Noise and Vibration Section, without implementation of mitigation, noise impacts related to operation of the LPA will generally occur where residences and other noise-sensitive land uses are located adjacent to the aerial and at-grade portions of the alignment. Additionally, impacts may occur in Huntington Park and Paramount in the EJ Affected Area due to the relocation of freight tracks. The MSF will not result in additional adverse noise effects at residential areas.

Project Measures NOI PM-1 (Crossing Signal Bells) and NOI PM-2 (Gate-Down-Bell-Stop Variance)[28] and Mitigation Measures NOI-1 through NOI-5, which include soundwalls for the LPA and freight track relocation, low impact frogs, wheel squeal noise monitoring, and TPSS noise reduction, will reduce adverse effects related to noise for the LPA. Project measures and mitigation measures will be implemented as required throughout the LPA alignment without consideration of character of the adjacent community or the composition of the population.

[28] The Draft EIS/EIR included Mitigation Measures NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance), which were recommended to further reduce noise at grade crossings but require CPUC approval. Thus, while they were identified as mitigation measures in the Draft EIS/EIR, the benefits they provide were not included as part of the mitigated analysis in the Draft EIS/EIR in case they could not be implemented. Based on Metro's experience of successfully implementing bell shrouds and gate-down-bell stop variances on other transit lines and coordination with CPUC subsequent to circulation of the Draft EIS/EIR, NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) have now been incorporated as project measures (PM-NOI-1 and PM-NOI-2, respectively) within the Final EIS/EIR and the associated reductions are included in the analysis of noise impacts associated with the LPA. Project Measures NOI PM-1 (Crossing Signal Bells) and NOI-PM-2 (Gate-Down-Bell-Stop Variance) remain subject to CPUC approval.

Similar noise project measures and mitigation measures (e.g., crossing signal bells, gate-down-bell stop variances, varied heights in soundwalls, low impact frogs, wheel squeal noise monitoring, and TPSS noise reduction measures) have been similarly implemented throughout Metro's system in both EJ and non-EJ communities to minimize adverse effects to the extent feasible.

Noise impacts will occur along the LPA alignment at residential areas and other noise and vibration-sensitive land uses, as discussed in detail in Section 4.7.4. Adverse noise effects will remain even after implementation of mitigation measures in unincorporated Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Paramount, Bellflower, Cerritos, and Artesia. The number of affected noise receptors after mitigation will be highest in Huntington Park, Paramount, Bellflower, Cerritos, and Artesia. As communities in the EJ Affected Area are all EJ communities, environmental effects of the LPA will be predominantly borne by EJ communities. Huntington Park, Paramount, Bellflower, Southeast Los Angeles, and South Gate have the highest concentration of EJ populations. Artesia, Cerritos, and Bellflower have the highest concentration of non-EJ populations compared to other EJ communities with adverse noise effects. Adverse noise effects will occur in EJ communities with higher concentrations of EJ populations as well as areas with comparable non-EJ populations and will not be concentrated in one EJ community. The LPA will not result in an appreciably more severe or greater in magnitude adverse effect than other areas with comparable non-EJ populations.

The LPA will also provide off-setting benefits (Section 4.22.3.5) such as an alternative mode of transportation that will increase mobility and transit access, and provide air quality improvements, mitigation for existing noise sources such as freight, and economic and fiscal benefits. With implementation of project measures and mitigation measures and in consideration of off-setting benefits, the LPA will not result in disproportionately high and adverse effects related to noise to EJ communities in the EJ Affected Area.

Vibration: As discussed in Section 4.7.3 of the Noise and Vibration Section, the majority of vibration impacts will occur where the LRT will be at-grade. Vibration created at the track switch for the MSF access track could exceed vibration thresholds at an adjacent business without mitigation. After incorporating mitigation, vibration impacts will occur at two locations along the at-grade portion of the alignment within the City of Bellflower, an EJ community.

Implementation of Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) will reduce vibration impacts associated with the LPA. Mitigation measures will be implemented similarly throughout the LPA alignment. Similar vibration mitigation (e.g., ballast mat or resilient rail fasteners) have been implemented throughout Metro's system in both EJ and non-EJ communities to minimize adverse effects to the extent feasible.

The LPA will also provide off-setting benefits (Section 4.22.3.5). With implementation of mitigation and in consideration of off-setting benefits, the LPA will not result in disproportionately high and adverse effects related to vibration in EJ communities in the EJ Affected Area.

Parklands and Community Facilities

The potential conflict with planned bike paths in local plans is discussed under the "Land Use and Development" heading above. The LPA primarily will be located within street ROWs and rail ROWs, or within acquired properties. The LPA will require partial acquisitions of community facilities. Operation of the LPA, including the MSF, will not result in the displacement of community and recreational facilities.

As discussed in Section 3.4.3 of Chapter 3, Transportation, where project features will encroach on existing bicycle facilities (i.e., Paramount Bike Trail, Bellflower Bike Trail, and Artesia Historic District Recreation Trails) or sidewalks, these facilities will be realigned or reconstructed as part of the LPA. Permanent impacts will be avoided. The pedestrian and bicycle facilities will remain operational and function will be maintained. Thus, the LPA will not have adverse impacts to parklands and community facilities. The LPA will not result in disproportionately high and adverse impacts related to active transportation to EJ populations.

The LPA and MSF will provide benefits to EJ communities such as improved transit service and access, as well as regional mobility. This will provide EJ communities in the EJ Affected Area with increased access to other parklands and community facilities along the LPA alignment. With implementation of mitigation and in consideration of off-setting benefits to the affected EJ communities, disproportionately high and adverse effects related to parklands and community facilities will not occur in EJ communities in the EJ Affected Area.

4.22.3.3 Design Option: Close 186th Street

The LPA with the design option would not generally result in adverse effects that would change the impacts of the LPA without the design option, as discussed in Chapters 3 and 4 of this Final EIS/EIR, with the exception of noise impacts. Similar to the LPA without the design option, the LPA with the design option would result in adverse noise and vibration impacts even with implementation of mitigation measures.

The design option would result in a similar number of affected noise receptors after mitigation in the same communities as the LPA. The LPA with the design option would result in 96 moderate noise impacts and 118 severe noise impacts, which would be a decrease of 1 moderate impact and an increase of 1 severe impact compared to the LPA without the design option. The LPA with and without the design option would result in 214 LRT pass-by noise and 88 vibration impacts before mitigation and 35 LRT pass-by noise and 2 vibration impacts after mitigation. Similar to the LPA without the design option, adverse noise effects would remain even after implementation of mitigation measures for the design option. The adverse noise effects after implementation of mitigation measure would occur in the EJ communities of unincorporated Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Paramount, Bellflower, Cerritos, and Artesia.

As with the LPA, after implementation of mitigation measures, the LPA with the design option would result in similar adverse effects on EJ communities as the LPA without the design option. Where adverse effects would occur, mitigation measures would be provided and implemented equally throughout all of the EJ communities in the Affected Area. Overall, adverse effects would occur in EJ communities with higher percentages of EJ populations and areas with comparable non-EJ populations. The design option would not result in effects suffered by the EJ population that would be appreciably more severe or greater in magnitude

than the adverse effects that would be suffered by the non-EJ population. Under NEPA, with implementation of mitigation and with consideration to off-setting benefits, the design option would not cause a disproportionately high and adverse effect on EJ communities in the Affected Area.

4.22.3.4 U.S. Army Corps of Engineers Facilities

The LPA alignment will cross over three USACE facilities in the EJ communities of South Gate and at the border of Bellflower and Artesia: the concrete-lined Los Angeles River, the Rio Hondo channel, and the San Gabriel River. Although located in EJ communities, the USACE facilities are under the jurisdiction of the USACE and are river channels that do not consist of identified EJ populations. LPA operations will not affect EJ populations where the USACE facilities are located, and no adverse effects to the environment will occur during operation of the LPA over the USACE facilities.

LPA operational activities crossing at USACE facilities will not result in effects suffered by the EJ population that will be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-EJ population. Under NEPA, with consideration to off-setting benefits, LPA-related activities at the USACE facilities will not cause a disproportionately high and adverse effect on EJ communities in the Affected Area.

4.22.3.5 Summary of Benefits

The LPA will benefit EJ communities in the Affected Area. The LPA will increase the mobility of EJ populations, improve air quality, reduce regional energy consumption, and provide economic and fiscal benefits. The MSF will support the LPA and is a requisite component of the LPA. Additionally, the EJ communities around the MSF will experience similar air quality benefits as those around the LPA.

The LPA, inclusive of the MSF, will improve both regional and local transit services, accessibility, and reliability because the LRT will operate in exclusive ROW. Travel time with the LRT will be shorter than existing transit service in the jurisdictions. The LPA will provide EJ communities with additional transit service, new LRT stations, and an alternative mode of transportation. This will also increase regional and local access to employment centers, activity centers, and community facilities for EJ communities and residents along the corridor. With the planned pedestrian, bike, and transit connection improvements, the LPA will support active transportation and will improve walkability near the stations.

The LPA and MSF will reduce regional air pollutants, GHG emissions, and energy consumption by decreasing regional VMT relative to the No Build Alternative. Daily operational emissions, mobile source air toxics emissions, and regional energy consumption will be lower than under the No Build Alternative. The reduction in pollutant emissions, GHG emissions, and energy consumption represents benefits to EJ populations and the region as a whole.

As discussed in Section 4.17.3 of the Economic and Fiscal Section, the LPA and MSF will have positive economic and fiscal effects that will benefit EJ populations. The LPA and MSF will result in economic benefits in the form of long-term job creation, creation of construction jobs, opportunities for potential future transit-oriented development, and potential increase in property values near station areas. The LPA with the design option will provide similar benefits as the LPA without the design option.

4.22.3.6 Summary of Effects on Environmental Justice Communities

Operation of the LPA and MSF will not have adverse effects with regard to transportation (transit operations, active transportation, off-street parking, and rail and vehicular freight); acquisitions and displacement; communities and neighborhoods; visual and aesthetics (visual character and quality of scenic resources); air quality; greenhouse gas emissions; ecosystems and biological resources; geotechnical, subsurface, seismic hazards; hazards and hazardous materials; water resources; energy; electromagnetic fields; archaeological, historical, and paleontological resources; traditional cultural properties/tribal cultural resources; parklands and community facilities (operational access and function of parklands, community facilities); economic and fiscal impacts; safety and security; and Section 4(f) resources.

After implementation of mitigation measures, the LPA will result in adverse effects on EJ communities in the EJ Affected Area related to traffic operations and parking; land use consistency; and noise and vibration. Where adverse effects will occur, mitigation measures will be provided and implemented throughout the EJ communities in the EJ Affected Area. In addition, the LPA and MSF will comply with all applicable federal, state, and local regulations.

The EJ Affected Area consists of all EJ communities. Environmental effects of the LPA will be predominantly borne by EJ communities. Overall, adverse effects will occur in EJ communities with higher percentages of EJ populations and areas with comparable non-EJ populations. The LPA and MSF will not result in effects suffered by the EJ population that will be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-EJ population.

As discussed in Section 4.22.3.5, the LPA, including the MSF, will also provide benefits to the affected EJ communities, including improved transit service and transit access, regional mobility, and air quality. Under NEPA, with implementation of mitigation and with consideration to off-setting benefits, the LPA, including the MSF, will not cause a disproportionately high and adverse effect on EJ communities in the Affected Area. The LPA with the design option will provide similar effects and benefits as the LPA without the design option.

4.22.3.7 Project Measures and Mitigation Measures

Refer to each of the environmental topic areas of this Final EIS/EIR for a detailed discussion of the following project measures and mitigation measures.

Project Measures

Visual and Aesthetics: VA PM-1 (Design Standards), VA PM-2 (Public Art), VA PM-3 (Landscaping), VA PM-4 (Landscaping Screening), VA PM-5 (Landscaping at MSF Site), VA PM-6 (Local Zoning Ordinances), VA PM-7 (Lighting), and VA PM-8 (Residential Screening for Aerial Structures), presented in Section 4.4.4 (Visual and Aesthetics)

Noise and Vibration: NOI PM-1 (Crossing Signal Bells), NOI PM-2 (Gate-Down-Bell-Stop Variance), presented in Section 4.7.4 (Noise and Vibration)

Mitigation Measures

Transportation: TRA-1 through TRA-17, which are specific intersection modifications, TRA-19 (Parking Monitoring and Community Outreach), and TRA-20 (Parking Mitigation Program [Permanent]), discussed in Section 3.5.2.4 in Chapter 3, Transportation

Land Use: LU-1 (Consistency with Bike Plans), discussed in Section 4.1.4 (Land Use)

Visual and Aesthetics: VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of "Belle"), discussed in Section 4.4.4 (Visual and Aesthetics)

Noise and Vibration: NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (TPSS Noise Reduction), NOI-5 (Freight Track Relocation Soundwalls), VIB-1 (Ballast Mat or Resilient Rail Fasteners), and VIB-2 (Low Impact Frogs), discussed in Section 4.7.4 (Noise and Vibration)

4.22.4 Construction Impacts

4.22.4.1 No Build Alternative

Under the No Build Alternative, infrastructure and transportation-related projects located within the Affected Area and identified in the SCAG 2016-2040 RTP/SCS, Metro 2009 LRTP, and Measure M would continue to be implemented and built, with the exception of the LPA. Future construction activities may include, but are not limited to, construction staging, materials stockpiling, hauling of dirt and materials, temporary street and lane closures, and use of temporary easements. However, construction activities would be temporary and would not result in long-term impacts to surrounding communities. Projects built under the No Build Alternative would implement project-specific construction-related measures to reduce and minimize potential adverse effects. Projects planned under the No Build Alternative would undergo separate environmental review to determine whether the projects would adversely affect environmental justice communities.

4.22.4.2 Locally Preferred Alternative and MSF

Transportation

As summarized below and provided in greater detail in Section 3.7.3 in Chapter 3, Transportation, temporary adverse transportation impacts will occur during construction of the LPA due to temporary street and lane closures; reconfiguration of roads; detours; traffic related to construction workers accessing and departing construction staging areas; closures of sidewalks, crosswalks, and bicycle facilities; and parking loss. The adverse effects will occur in the EJ Affected Area and may temporarily inconvenience and disrupt community activities in the EJ communities. Implementation of Mitigation Measure TRA-21 (Loss of Parking [Construction]) will address potential parking reduction effects during construction, and Mitigation Measure TRA-18 (Transportation Management Plan(s)) will address potential construction-related traffic impacts. Temporary construction-related effects will be minimized, but adverse effects will still occur for the LPA after mitigation.

Temporary construction effects will be predominantly borne by EJ communities. With mitigation, temporary adverse transportation effects during construction will still affect Vernon, unincorporated Florence-Firestone, Huntington Park, Bell, Cudahy, Downey, South Gate, Paramount, Bellflower, Cerritos, and Artesia. Huntington Park, Paramount, Bellflower,

and South Gate have the highest concentration of EJ populations. Vernon, Artesia, Cerritos, Bellflower, Downey, and Paramount have a higher concentration of non-EJ populations compared to the other EJ communities.

Temporary adverse effects related to transportation will occur in EJ communities with higher EJ populations as well as areas with comparable non-EJ populations and will not be concentrated in one EJ community. Construction activities will be temporary, and the adverse effects in each EJ community will not result in appreciably more severe or greater in magnitude adverse effects than areas with comparable non-EJ populations. Mitigation measures will be similarly implemented in the affected EJ communities where at-grade and above-grade construction activities will occur. With implementation of mitigation, the LPA will not result in disproportionately high and adverse effects related to transportation in EJ communities in the EJ Affected Area.

Land Use and Development

As discussed in Section 4.19.3.1 , Construction-related Land Use Section, with regard to consistency with local land use plans, policies, and regulations, TCEs and property acquisitions will be required for construction staging areas and construction support sites for the LPA and MSF. Following construction, TCEs are anticipated to be returned to preconstruction conditions and acquired parcels will increase the opportunity for development in station areas. The LPA and MSF will be consistent with air quality plans and policies and noise ordinances to minimize construction impacts to surrounding land uses. Construction of the LPA will further the goals, objectives, and policies of local land use plans as they relate to alternative transportation, public transportation, and future growth in transit within the respective jurisdictional boundaries.

Construction of the LPA and MSF will not conflict with applicable land use plans, policies, and regulations of local agencies, and there will be no adverse effect related to land use. Sensitive land uses adjacent to and along the LPA alignment and station areas may experience adverse effects regarding intermittent construction noise, which is discussed in the Noise and Vibration analysis below. Although adverse noise effects will occur during construction, adverse effects associated with construction will be temporary and access to sensitive land uses will continue to be available. Additionally, the function of the surrounding land uses will not be impaired. Therefore, the LPA and MSF will not result in disproportionately high and adverse effects related to land use in EJ communities in the EJ Affected Area.

Acquisitions and Displacements

As discussed in Section 4.19.3.3, Construction-related Acquisitions and Displacements Section, construction of the LPA will require TCEs and property acquisitions for temporary construction laydown areas and construction support sites. Parcels required for the MSF will be full permanent acquisitions and will be used as a construction staging area prior to construction of the MSF. Full acquisitions for construction will be required in Southeast Los Angeles, Huntington Park, Cudahy, South Gate, Paramount, Bellflower, and Artesia in the EJ Affected Area. TCEs will be required in Vernon, Huntington Park, Cudahy, Downey, South Gate, Paramount, Bell, Bellflower, Artesia, and Cerritos. TCEs and full acquisitions for construction will not be required in unincorporated Florence-Firestone. Metro will comply with the Uniform Act, California Relocation Act, and other applicable regulations, and no adverse effects from acquisitions and displacements will occur.

Adverse effects related to construction-related acquisitions and displacements of businesses and/or residential units will affect the EJ communities of Southeast Los Angeles, Vernon, Huntington Park, Cudahy, Downey, South Gate, Paramount, Bell, Bellflower, Artesia, and Cerritos. Southeast Los Angeles, Huntington Park, Paramount, Bellflower, and South Gate have the highest concentration of EJ populations, while Cudahy, Vernon, Bell, Cerritos, Cudahy, Artesia, and Cerritos have higher non-EJ populations. Artesia and Cerritos have the highest concentration of non-EJ populations in comparison to the other communities with construction-related acquisitions and displacements. Construction effects will be predominantly borne by EJ communities. In addition, adverse effects to the nursery business (South Gate) and sports center (Bellflower) will be unique to the corridor; however, these businesses do not serve especially important social, religious, or cultural functions for the EJ populations it serves. Although the businesses provide employment, the facilities are not large employment centers that support the EJ communities as a whole.

Construction activities will be temporary and the adverse effects in each EJ community will not result in appreciably more severe or greater in magnitude adverse effects in areas with higher EJ populations than other areas with comparable non-EJ populations. In consideration of off-setting benefits to EJ communities, the LPA will not result in disproportionately high and adverse effects related to acquisitions and displacement in EJ communities in the EJ Affected Area.

Communities and Neighborhoods

As discussed in Section 4.19.3.2, Construction-related Communities and Neighborhoods Section, vehicle, pedestrian, and bicycle access to businesses, community assets, and residences in EJ communities will be detoured temporarily due to temporary sidewalk, lane, and/or street closures. Access to community assets and residences will be detoured during construction including, but not limited to, Southeast Los Angeles, Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Paramount, Bellflower, Artesia, and Cerritos. Implementation of Mitigation Measure COM-1 (Construction Outreach Plan) will maintain accessibility to neighborhoods and community facilities in the affected EJ communities; maintain traffic flow around construction areas; provide directional and construction detour routes signage; provide information signage and public updates; develop a plan to minimize impacts to businesses; and coordinate construction activities with other capital improvement projects. Mitigation Measure COM-1 (Construction Outreach Plan) will be implemented similarly throughout the EJ populations to minimize effects to EJ communities during construction. At the completion of construction, temporary barriers around construction activities and laydown sites will be removed, and temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions.

Residents and users of community facilities in the portions of the affected EJ communities may experience temporary increases in construction-related noise, vibrations, and visual changes, resulting in temporary community disruption. Implementation of Mitigation Measures VA-3 (Construction Screening), VA-4 (Construction Lighting), NOI-6 (Noise Control Plan) will be implemented similarly throughout the areas to reduce construction noise and vibration, and to shield sensitive viewers from views of construction sites. However, adverse noise effects will remain.

Construction activities will be temporary and are not expected to cause residents to move out of EJ communities in the Affected Area; change the character and cohesion of EJ

communities in the Affected Area; and not permanently isolate residential neighborhoods or community facilities.

Temporary construction-related community impacts will occur in Southeast Los Angeles, Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Paramount, Bellflower, Artesia, and Cerritos. Of these affected EJ communities, Southeast Los Angeles, Huntington Park, Paramount, Bellflower, and South Gate have the highest concentration of EJ populations, while Bell, Cudahy, Artesia, and Cerritos have a higher concentration of non-EJ populations in comparison to the other communities. Temporary construction-related adverse effects will occur in EJ communities with higher concentrations of EJ populations, as well as comparable non-EJ populations.

Construction-related adverse effects will not be concentrated in one EJ community. Temporary construction effects will be predominantly borne by EJ communities, and the adverse effects in each EJ community will not result in appreciably more severe or greater in magnitude adverse effects in communities with higher concentrations of EJ populations than other areas with comparable non-EJ populations. Mitigation measures will be similarly implemented in the affected EJ communities. With implementation of mitigation, the LPA will not result in disproportionately high and adverse effects related to communities and neighborhoods in EJ communities in the EJ Affected Area.

Noise and Vibration

As discussed in Section 4.19.3.7 , Construction-related Noise and Vibration Section, construction of the LPA will exceed FTA and local noise standards. Vibration-generating activities could result in noticeable levels of vibration but will largely occur within the rail and street ROWs or on properties acquired for the LPA and are unlikely to result in building damage. Equipment vibration could exceed the FTA vibration damage criteria and vibration annoyance criteria when conducted in proximity to vibration-sensitive uses.

Implementation of Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), which include a vibration control plan, minimizing the use of impact devices, drilling for building foundations, construction vibration limits, and construction monitoring, will be applied where applicable and will reduce construction noise and vibration impacts; however, impacts will remain adverse. Temporary construction effects of the LPA related to noise and vibration will be predominantly borne by EJ communities. Temporary construction adverse effects related to noise and vibrations will affect the EJ communities of Southeast Los Angeles, unincorporated Florence-Firestone, Huntington Park, Bell, Cudahy, South Gate, Paramount, Bellflower, Cerritos, and Artesia. Of these EJ communities, Huntington Park, Paramount, Bellflower, Southeast Los Angeles, and South Gate have the highest concentration of EJ populations. Artesia, Cerritos, Bellflower, and Paramount have a higher concentration of non-EJ populations compared to the other communities.

The overall noise levels in the EJ Affected Area will be spread along the at-grade and aerial portions of the alignment. Although adverse noise and vibration effects will occur even with implementation of mitigation measures, the severity of impacts will be largely uniform throughout the LPA alignment with EJ populations and non-EJ populations. Construction-related adverse effects will not be concentrated in one community. The construction noise and

vibration impacts will not be appreciably more severe or greater in magnitude in areas with EJ populations than in other areas with comparable non-EJ populations.

Mitigation measures will be similarly implemented throughout the LPA alignment where impacts have been identified. With implementation of mitigation, the LPA will not result in disproportionately high and adverse effects related to noise and vibration in EJ communities in the EJ Affected Area.

Parklands and Community Facilities

As discussed in Section 4.19.3.16, Construction-related Parklands and Community Facilities Section, construction of the LPA will require termination of the lease agreement between Metro and the City of Paramount, which will remove approximately 20 of over 300 on-site parking spaces used by park patrons. The reversion of the leased parking area does not require property acquisition within the Paramount Park boundary. Park recreational facilities and buildings will not be disturbed, and the general functions of Paramount Park will remain unchanged. Construction sites will not be located on and will not permanently disrupt function or access to parklands, recreational facilities, bike facilities, and community facility properties. Therefore, adverse effects related to property acquisitions for construction or TCEs in the context of parklands and community facilities will not occur.

Parcels acquired for construction support sites will not be located on, and will not permanently disrupt, parklands, recreational facilities, bike facilities, and community facility properties. Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), and COM-1 (Construction Outreach Plan) will be implemented where applicable to minimize adverse effects related to air quality, noise, and vibration, and to maintain access and parking at parklands, recreational facilities, and bike facilities.

Construction activities will be temporary, and barriers around construction activities and staging areas will be removed upon completion of construction. Temporary street, lane, and bike path detours and closures will be returned to preconstruction conditions once construction is completed. With implementation of mitigation, the LPA will not result in adverse effects related to parklands and community facilities during construction. Therefore, with implementation of mitigation, the LPA will not result in disproportionately high and adverse effects related to parklands and community facilities in EJ communities in the EJ Affected Area.

Design Option: Close 186th Street

Construction of the LPA with the design option would have similar construction impacts and minimization strategies as the LPA without the design option and would result in similar temporary adverse effects to transportation, land use, acquisitions and displacement, communities and neighborhoods, and parklands and community facilities.

Implementation of Mitigation Measure TRA-18 (Transportation Management Plan(s) (TMPs)) and TRA-21 (Loss of Parking [Construction]) would minimize temporary construction-related transportation impacts, but adverse effects are likely to remain. Construction activities for the LPA with the design option would not be located on or not permanently disrupt parklands,

recreational facilities, bike facilities, and community facility properties and would therefore not result in adverse effects to those facilities.

Without mitigation, construction activity related to the LPA with the design option is expected to result in potentially adverse noise and vibration impacts. After implementation of Mitigation Measures NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources) where applicable, impacts related to construction noise would remain adverse while vibration would be less than adverse.

The LPA with the design option would result in similar temporary construction-related adverse effects as the LPA without the design option. All applicable regulations, project measures, and mitigation measures would be implemented during construction of the design option. Temporary adverse effects related to transportation, noise, and vibration in EJ communities would remain even after implementation of mitigation measures. However, with implementation of mitigation and with consideration to off-setting benefits, the LPA with the design option would not cause disproportionately high and adverse effects related to construction in EJ communities in the EJ Affected Area.

Overall, adverse effects would occur in EJ communities with higher percentages of EJ populations and areas with comparable non-EJ populations. The LPA with the design option would not result in effects suffered by the EJ population that would be appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-EJ population. Under NEPA, with implementation of mitigation and with consideration to off-setting benefits, the LPA with the design option would not cause a disproportionately high and adverse effect in EJ communities in the Affected Area.

U.S. Army Corps of Engineers Facilities

The USACE facilities are under the jurisdiction of the USACE and are river channels that do not consist of identified EJ populations. LPA construction activities at the USACE facilities will not affect EJ populations associated with the USACE facilities, and no adverse effects to the environment will occur during LPA construction activities over the USACE facilities.

LPA construction activities over the USACE facilities will not result in effects suffered by the EJ population that will be appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-EJ population. Under NEPA, with consideration to off-setting benefits, LPA-related activities at the USACE facilities will not cause a disproportionately high and adverse effect in EJ communities in the Affected Area.

Summary of Environmental Justice Analysis

The LPA and MSF will result in temporary construction-related adverse effects pertaining to transportation, land use, acquisitions and displacements, communities and neighborhoods, air quality, noise and vibration, and parklands and community facilities.

All applicable federal, state, and local regulations will be implemented during construction of the LPA. Where adverse effects will occur, project measures and mitigation measures will be provided and implemented throughout all of the affected EJ communities. However, temporary adverse effects related to transportation, noise, and vibration in EJ communities

will remain even after implementation of mitigation measures. Temporary adverse effects will affect EJ communities and non-EJ populations and are not focused within any single community. The impacts are not considered more severe or greater in magnitude in areas with EJ populations versus comparable non-EJ populations along the LPA alignment. With implementation of mitigation and with consideration to off-setting benefits, the LPA and MSF will not cause disproportionately high and adverse effects related to construction in EJ communities in the EJ Affected Area. The effects and benefits for the LPA with the design option are similar to those for the LPA without the design option.

Project Measures and Mitigation Measures

Refer to each of the environmental topic areas of this Final EIS/EIR for a detailed discussion of the following mitigation measures.

Project Measures

Noise and Vibration: VIB PM-1 (City of Bellflower Vibration Sensitive Facilities), discussed in Section 4.19.3.7 (Construction-related Noise and Vibration)

Mitigation Measures

Transportation: TRA-18 (Transportation Management Plan(s)) and TRA-21 (Loss of Parking [Construction]), discussed in Section 3.7.3.6 in Chapter 3, Transportation

Community and Neighborhood: COM-1 (Construction Outreach Plan), discussed in Section 4.19.3.2 (Construction-related Communities and Neighborhoods)

Noise and Vibration: NOI-6 (Noise Control Plan), VIB-3 (Vibration Control Plan), VIB-4 (Minimize the Use of Impact Devices), VIB-5 (Drilling for Building Foundations), VIB-6 (Construction Vibration Limits for Historic Properties/Historical Resources), and VIB-7 (Construction Monitoring for Vibration Near Historic Properties/Historical Resources), discussed in Section 4.19.3.7 (Construction-related Noise and Vibration)

4.23 Other Environmental Considerations

Section 15126 of the *CEQA Guidelines* identifies subjects that shall be discussed in an EIR, which include effects determined not to be significant, significant irreversible environmental changes, and mandatory findings of significance. There are no NEPA requirements to address these subjects.

4.23.1 Effects Determined Not to be Significant

Section 15128 of the *CEQA Guidelines* states "an EIR shall contain a brief statement indicating reasons that various possible effects of a project were determined not to be significant and not discussed in detail in the EIR." This section identifies the effects found not to be significant as required by Section 15128 of the *CEQA Guidelines* and includes agriculture and forestry resources, mineral resources, wildfire, and utilities and service systems. Environmental topics not addressed in this section are addressed in Sections 4.1 through 4.22 of this Final EIS/EIR.

4.23.1.1 Agriculture and Forestry Resources

Impacts are analyzed in accordance with *CEQA Guidelines*. Specific questions pertaining to agriculture and forestry resources from Appendix G of the *CEQA Guidelines* are as follows:

- Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?
- Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?
- Would the project result in the loss of forest land or conversion of forest land to non-forest use?
- Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Locally Preferred Alternative, Design Option, and MSF Impacts

The LPA will be located in heavily developed urban and suburban areas of the Cities of Los Angeles, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and the unincorporated Florence-Firestone community of LA County. As discussed in Section 4.1.2.1 of the Land Use Section, the existing land use distribution of the LPA identifies 2.1 percent agricultural uses in the Affected Area for land use, defined as the adjacent area within approximately 50 feet of the LPA, and 0.2 percent in the Surrounding Area, defined as within 0.25 mile of the alignment and 0.5 mile of the station areas. Agricultural uses are not identified within the Surrounding Area of the MSF. Agricultural land uses are located only in the Cities of South Gate and Paramount. These identified areas are also identified as Unique Farmland.[29,30] However, these sites are not used exclusively for agriculture or farming and are primarily used as a nursery. Nonetheless, the LPA will be primarily located within the public ROW and will not result in impacts to agricultural land. No Williamson Act contracts are applicable within the Affected Area.[31] Therefore, no impacts related to agricultural resources will occur.

The Affected Area for land use is not zoned for forestland or timberland and no forests are located in or adjacent to the LPA, design option, and MSF. Therefore, no impacts regarding forestland, timberland, or forestry resources will occur.

---

[29] California Department of Conservation, Farmland Mapping & Monitoring Program, https://www.conservation.ca.gov/dlrp/fmmp

[30] California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/

[31] California Department of Conservation, The Williamson Act of 2016-17, https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2018%20WA%20Status%20Report.pdf

4.23.1.2 Mineral Resources

Impacts are analyzed in accordance with *CEQA Guidelines*. Specific questions pertaining to mineral resources from Appendix G of the *CEQA Guidelines* are as follows:

- Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Locally Preferred Alternative, Design Option, and MSF Impacts

The Surface Mining and Reclamation Act of 1975 requires the state geologist (Division of Mines and Geology) to identify and classify all mineral deposits in California. In 1979, the State Board of Mining and Geology adopted guidelines that require local general plans to reference identified mineral deposits and sites that are identified for conservation. In addition, the Board identified urban areas where irreversible land uses (development with structures) preclude mineral extraction.

As discussed in Section 4.9.2.8 of the Geotechnical, Subsurface, and Seismic Section, the Affected Area for geotechnical, subsurface, and seismic resources is situated atop alluvial soils; however, mining of these materials is not viable considering the highly urbanized nature of the Affected Area. In addition, the LPA will be located primarily within public and rail ROW surrounded by residential, commercial, industrial, open space, and infrastructure land uses. Operation and construction of the LPA will not involve mineral resource extraction activities, and there is no existing resource recovery within the project corridor.

As discussed in Section 4.10.2.5 of the Hazards and Hazardous Materials Section, one abandoned oil well is identified within a 200-foot radius of the LPA. No active wells have been identified, and the LPA will not impact continued oil extraction from active wells.

The LPA will not result in the loss of availability of known mineral resources or a mineral resource recovery site. Therefore, no impacts related to mineral resources will occur.

4.23.1.3 Wildfire

Impacts are analyzed in accordance with *CEQA Guidelines*. Specific questions pertaining to wildlife from Appendix G of the *CEQA Guidelines* are associated with projects that are located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and are as follows:

- Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?
- Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

- Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Locally Preferred Alternative, Design Option, and MSF Impacts

Refer to Section 4.18, Safety and Security, for an analysis of effects on adopted emergency response plans and emergency evacuation plans. As discussed in Section 4.10, Hazards and Hazardous Materials, a review of the State of California, Los Angeles County Fire Hazard Severity Zone, and CalFire Local Responsibility Area Maps indicates that the Study Area is characterized as an urban area, is not located in a Fire Hazard Severity Zone, and is not subject to effects from wildland fire.[32] As such, the LPA will not exacerbate wildfire risks and will not expose people or structures to a significant risk associated with wildland fires, such as downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, no impacts related to wildfire will occur.

4.23.1.4 Utilities and Service Systems

Impacts are analyzed in accordance with *CEQA Guidelines*. Specific questions pertaining to utilities and service systems from Appendix G of the *CEQA Guidelines* are as follows:

- Would the Proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Would the Proposed Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Locally Preferred Alternative, Design Option, and MSF Impacts

Construction of the LPA will require relocating or temporarily rerouting utilities, as discussed in Section 4.19.2.4. Relocation typically will not exceed 5 to 10 feet of disturbance. As standard practice, Metro will coordinate utility relocations under the terms of each provider's franchise or other agreements defining the provisions for relocation work. Preliminary relocation concepts will be developed and presented to each utility owner with affected facilities. Utility agreements will be finalized to ensure the designs are prepared by third-party utility owners.

In the event undocumented utilities are encountered during construction, they will be potholed to determine approximate depth, orientation, and if possible type, material, and size. Based on this information, likely utility owners in the area will be contacted to verify this information and to confirm if the utility is active. If the utility is active, a relocation plan will be developed and

[32] Los Angeles County Fire Hazard Responsibility Areas, https://geohub.lacity.org/datasets/56935c2fb7d84455adba0c414f0ebe34_1?geometry=-118.396%2C34.029%2C-118.069%2C34.079

relocation performed by the contractor or the utility owner. If the utility is determined to be inactive, it will be removed or abandoned in place by the contractor following standard procedures.

The LPA will not include a new source of potable water consumption and will not directly generate population that will require wastewater services. Water appurtenances such as fire hydrants and water meters could be relocated and/or adjusted to accommodate project elements. A short-term use of minimal water supplies will be required during construction activities (e.g., for dust control), which will not necessitate new water deliveries to the region.

Construction activities will not require the construction or relocation of wastewater treatment or stormwater facilities that could cause significant environmental effects. Additionally, construction and operation of the LPA will be required to comply with all applicable federal, state, and local statutes and regulations pertaining to solid waste disposal. The construction contractor will comply with AB 939, which requires a Solid Waste Diversion Program and diversion of at least 50 percent of the solid waste from landfills to recycling facilities. Therefore, no impact to utilities and service systems will occur related to construction or operational activities.

4.23.2 Significant Irreversible Environmental Changes

Section 15126.2(d) of the *CEQA Guidelines* requires a discussion of any significant irreversible environmental changes that would be caused by the Proposed Project. Specifically, Section 15126.2(d) states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.*

Generally, a project would result in significant irreversible environmental changes if any of the following would occur:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve a large commitment of nonrenewable resources;
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

The LPA, including the MSF, will result in the use of nonrenewable resources during construction and operation. Resources that will be consumed as a result of implementation of the LPA include water, electricity, natural gas, and fossil fuels. Construction activities will result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobile and construction equipment. However, use of such resources will not be unusual as compared to other construction activities and will not substantially affect the availability of such resources.

Operation activities for the LPA will comply with all applicable codes, as well as project measures and mitigation measures, so that all natural resources are conserved or recycled to the maximum extent feasible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, that will further reduce the LPA's reliance upon nonrenewable natural resources. However, even with implementation of conservation measures, the consumption of natural resources will generally increase with implementation of the LPA, including the MSF.

Implementation of the LPA will involve irreversible environmental changes to existing natural resources, such as the commitment of energy and water resources as a result of operation and maintenance of future development. However, the amount and rate of consumption of these resources will not result in significant environmental impacts related to the unnecessary, inefficient, or wasteful use of resources (see Section 4.12, Energy). Implementation of the LPA, including the MSF will not involve the wasteful or unjustifiable use of energy or other resources, and energy conservation efforts will also occur with new construction.

Construction of the LPA will involve construction of power poles, transmission lines, and connections to the existing grid to support the LPA, but will not require the expansion of existing generation facilities and will not interfere with efforts to augment the renewable energy supply. New development accommodated by the LPA will be subject to approval by local jurisdictions and will be constructed and operated in accordance with specifications contained in Title 24 of the CCR and local green building requirements, as discussed in Section 4.12.3, Energy. The LPA will contribute to a reduction in regional energy consumption that is consistent with objectives of regional planning strategies to reduce reliance on fossil fuels and nonrenewable resources. Therefore, the use of energy related to the LPA, including the MSF will occur in an efficient manner and impacts related to significant irreversible environmental changes will be less than significant.

4.23.3 Mandatory Findings of Significance

CEQA requires that an EIR be prepared when certain specified impacts may result from construction or implementation of a project. Under Section 15065(a) of the *CEQA Guidelines*, a finding of significance is required if a project "has the potential to substantially degrade the quality of the environment." In practice, this is the same standard as a significant effect on the environment, which is defined in Section 15382 of the *CEQA Guidelines* as "a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." This Final EIS/EIR has been prepared for the LPA, which fully addresses all of the Mandatory Findings of Significance, as described below. Specific questions pertaining to Mandatory Findings of Significance from Appendix G of the *CEQA Guidelines* are as follows:

- Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a

project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

This Final EIS/EIR, in its entirety, addresses and discloses all potential environmental effects associated with implementation of the LPA, inclusive of the MSF, including direct, indirect, and cumulative impacts, feasible mitigation measures, and the level of significance after the incorporation of mitigation measures in the following resource areas:

- Transportation
- Land Use and Development
- Communities and Neighborhoods
- Displacements and Acquisitions
- Visual and Aesthetic
- Air Quality
- Greenhouse Gases
- Noise and Vibration
- Ecosystems/Biological Resources
- Geotechnical, Subsurface, Seismic
- Hazards and Hazardous Materials
- Water Resources
- Energy
- Electromagnetic Fields
- Historic, Archaeological, and Paleontological Resources
- Tribal Cultural
- Parklands and Community Facilities
- Economic and Fiscal Impacts
- Safety and Security
- Environmental Justice