

West Santa Ana Branch Transit Corridor

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



Metro®

**Draft EIS/EIR Chapter 4:
Affected Environment and Environmental
Consequences
Part 1**

Draft 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 99-22-4
Los Angeles, CA 90012
Phone: (213) 922-6262
wsab@metro.net

Charlene Lee Lorenzo
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
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

4	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	4-1
4.1	Land Use	4-4
4.1.1	Regulatory Setting and Methodology	4-4
4.1.2	Affected Environment/Existing Conditions	4-5
4.1.3	Environmental Consequences/Environmental Impacts	4-15
4.1.4	Project Measures and Mitigation Measures	4-29
4.1.5	California Environmental Quality Act Determination	4-29
4.2	Communities and Neighborhoods	4-34
4.2.1	Regulatory Setting and Methodology	4-34
4.2.2	Affected Environment/Existing Conditions	4-36
4.2.3	Environmental Consequences/Environmental Impacts	4-39
4.2.4	Project Measures and Mitigation Measures	4-61
4.2.5	California Environmental Quality Act Determination	4-61
4.3	Acquisitions and Displacements	4-63
4.3.1	Regulatory Setting and Methodology	4-63
4.3.2	Affected Environment/Existing Conditions	4-65
4.3.3	Environmental Consequences/Environmental Impacts	4-65
4.3.4	Project Measures and Mitigation Measures	4-98
4.3.5	California Environmental Quality Act Determination	4-98
4.4	Visual and Aesthetics	4-102
4.4.1	Regulatory Setting and Methodology	4-102
4.4.2	Affected Environment/Existing Conditions	4-104
4.4.3	Environmental Consequences/Environmental Impacts	4-113
4.4.4	Project Measures and Mitigation Measures	4-190
4.4.5	California Environmental Quality Act Determination	4-191
4.5	Air Quality	4-198
4.5.1	Regulatory Setting and Methodology	4-198
4.5.2	Affected Environment/Existing Conditions	4-204
4.5.3	Environmental Consequences/Environmental Impacts	4-209
4.5.4	Project Measures and Mitigation Measures	4-217
4.5.5	California Environmental Quality Act Determination	4-217
4.6	Greenhouse Gas Emissions	4-226
4.6.1	Regulatory Setting and Methodology	4-226
4.6.2	Affected Environment/Existing Conditions	4-229
4.6.3	Environmental Consequences/Environmental Impacts	4-231
4.6.4	Project Measures and Mitigation Measures	4-234
4.6.5	California Environmental Quality Act Determination	4-234
4.7	Noise and Vibration.....	4-240
4.7.1	Regulatory Setting and Methodology	4-242
4.7.2	Affected Environment/Existing Conditions	4-248
4.7.3	Environmental Consequences/Environmental Impacts	4-252
4.7.4	Project Measures and Mitigation Measures	4-260
4.7.5	California Environmental Quality Act Determination	4-312
4.8	Ecosystems/Biological Resources	4-320
4.8.1	Regulatory Setting and Methodology	4-320
4.8.2	Affected Environment/Existing Conditions	4-323

4.8.3 Environmental Consequences/Environmental Impacts4-332
 4.8.4 Project Measures and Mitigation Measures4-333
 4.8.5 California Environmental Quality Act Determination4-333

Tables

Table 4.0.1. Geographic Extent of Evaluation4-2
 Table 4.1.1. Land Use Distribution for the Build Alternatives 4-11
 Table 4.1.2. Existing Land Uses in the Affected Area and Surrounding Area of the Station Areas and Design Options 4-12
 Table 4.1.3. Land Use Distribution Adjacent to MSF Site Options 4-13
 Table 4.1.4. No Build Alternative Inconsistency with Local Land Use Plans and Policies4-16
 Table 4.2.1. Projected Growth in Population, Housing, and Employment of the Build Alternatives (2017-2042)..... 4-38
 Table 4.2.2. Projected Growth in Population, Housing, and Employment of the Build Alternatives by Station Area (2017-2042)..... 4-38
 Table 4.2.3. Project Effects on Access and Mobility within Affected Area 4-41
 Table 4.2.4. Build Alternatives Effects on Community Character and Cohesion 4-45
 Table 4.3.1. Summary of Permanent Property Acquisitions by Build Alternative 4-66
 Table 4.3.2. Permanent Property Acquisitions by Jurisdiction and Build Alternatives 4-66
 Table 4.3.3. Permanent Business and Employee Displacements by Build Alternative 4-85
 Table 4.3.4. Permanent Business and Employee Displacements by Jurisdiction and Build Alternatives 4-86
 Table 4.3.5. Permanent Residential Displacements by Build Alternative 4-87
 Table 4.3.6. Permanent Residential Displacements by Jurisdiction 4-88
 Table 4.3.7. Gap Analysis of Displacements and Available Units..... 4-89
 Table 4.3.8. Inventory of Residential Units for Sale and Rent..... 4-91
 Table 4.4.1. Scenic Resources in Affected Area for Visual 4-105
 Table 4.4.2. Existing Visual Character, Scenic Resources, and Visual Quality, by Landscape Unit..... 4-110
 Table 4.4.3. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Downtown Low-Rise and Mid-Rise Landscape Unit..... 4-115
 Table 4.4.4 Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Industrial Landscape Unit..... 4-119
 Table 4.4.5. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Industrial and Residential Landscape Unit 4-137
 Table 4.4.6. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Residential Landscape Unit 4-148
 Table 4.4.7. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential and Industrial Landscape Unit..... 4-156
 Table 4.4.8. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential Landscape Unit..... 4-168

Table 4.4.9. Project Components' Effects on Visual Character and Quality – Downtown Mid-Rise and High-Rise Landscape Unit.....	4-183
Table 4.5.1. Criteria Air Pollutants and Characteristics.....	4-199
Table 4.5.2. National and California Ambient Air Quality Standards.....	4-201
Table 4.5.3. Affected Area Daily Vehicle Miles Traveled – 2017 Existing Scenarios vs. 2042.....	4-203
Table 4.5.4. SCAQMD Air Quality Significance Thresholds – Operation Mass Daily Thresholds.....	4-204
Table 4.5.5. National and State Attainment Status for Criteria Pollutant Standards – Los Angeles County.....	4-205
Table 4.5.6. SRA 1 Los Angeles – North Main Street Station Monitoring Data (2015 – 2017).....	4-206
Table 4.5.7. SRA 12 and SRA 5 – Compton Monitoring Station Data (2015 – 2017).....	4-207
Table 4.5.8. SRA 4 – South Coastal Los Angeles County Monitoring Station Data (2015 – 2017).....	4-208
Table 4.5.9. Daily Operational Emissions—Existing Conditions (2017) and No Build Alternative (2042).....	4-209
Table 4.5.10. Daily Operational Emissions—Alternative 1 (2042).....	4-211
Table 4.5.11. Daily Operational Emissions—Alternative 2 (2042).....	4-212
Table 4.5.12. Daily Operational Emissions—Alternative 3 (2042).....	4-213
Table 4.5.13. Daily Operational Emissions—Alternative 4 (2042).....	4-214
Table 4.5.14. Daily Operational Emissions—Design Options 1 and 2 (2042).....	4-216
Table 4.5.15. MSF Daily Regional Operational Emissions.....	4-221
Table 4.6.1. Affected Area Annual Vehicle Miles Traveled (in Millions) – 2017 and 2042....	4-228
Table 4.6.2. Annual Light Rail Vehicle Revenue Miles – Build Alternatives.....	4-229
Table 4.6.3. Global Warming Potential for Selected Greenhouse Gases.....	4-230
Table 4.6.4. California GHG Emissions Inventory.....	4-231
Table 4.6.5. Operational GHG Emissions.....	4-233
Table 4.7.1. Levels of Impact.....	4-243
Table 4.7.2. Noise Impact Criteria for Transit Operations.....	4-245
Table 4.7.3. Ground-borne Vibration and Ground-borne Noise Impact Criteria.....	4-247
Table 4.7.4. Summary of Alternative 1 LRT Pass-by Noise Impacts.....	4-253
Table 4.7.5. Ancillary Facility Noise Impacts by TPSS Site.....	4-255
Table 4.7.6. Summary of Mitigated LRT Noise Impacts by Alternative.....	4-267
Table 4.7.7. Mitigated LRT Noise – Alternative 1.....	4-268
Table 4.7.8. Sensitive Land Uses Where Mitigation is Not Feasible or Reasonable.....	4-281
Table 4.7.9. Mitigated LRT Noise – Alternative 2.....	4-282
Table 4.7.10. Mitigated LRT Noise – Alternative 3.....	4-284
Table 4.7.11. Mitigated Freight Track Relocation Noise – Alternatives 1, 2, and 3.....	4-293
Table 4.7.12. Mitigated Freight Track Relocation Noise – Alternative 4.....	4-296
Table 4.7.13. Mitigated LRT Vibration.....	4-301

Figures

Figure 4.1-1. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from Los Angeles Union Station to Southeast Los Angeles) 4-6

Figure 4.1-2. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from Southeast Los Angeles to City of Huntington Park) 4-7

Figure 4.1-3. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from City of Huntington Park to City of South Gate)..... 4-8

Figure 4.1-4. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from City of South Gate to City of Bellflower) 4-9

Figure 4.1-5. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from City of Bellflower to City of Artesia) 4-10

Figure 4.1-6. Existing Land Use within 0.25 Mile of the Maintenance and Storage Facility Site Options 4-14

Figure 4.2-1. Communities along the Project Alignment 4-37

Figure 4.3-1. Property Acquisitions for the Build Alternatives 4-68

Figure 4.3-2. Property Acquisitions for the Build Alternatives 4-69

Figure 4.3-3. Property Acquisitions for the Build Alternatives 4-70

Figure 4.3-4. Property Acquisitions for the Build Alternatives 4-71

Figure 4.3-5. Property Acquisitions for the Build Alternatives 4-72

Figure 4.3-6. Property Acquisitions for the Build Alternatives 4-73

Figure 4.3-7. Property Acquisitions for the Build Alternatives 4-74

Figure 4.3-8. Property Acquisitions for the Build Alternatives 4-75

Figure 4.3-9. Property Acquisitions for the Build Alternatives 4-76

Figure 4.3-10. Property Acquisitions for the Build Alternatives 4-77

Figure 4.3-11. Property Acquisitions for the Build Alternatives 4-78

Figure 4.3-12. Property Acquisitions for the Build Alternatives 4-79

Figure 4.3-13. Property Acquisitions for the Build Alternatives 4-80

Figure 4.3-14. Property Acquisitions for the Build Alternatives 4-81

Figure 4.3-15. Property Acquisitions for the Build Alternatives 4-82

Figure 4.3-16. Property Acquisitions for the Build Alternatives 4-83

Figure 4.3-17. Property Acquisitions for the Build Alternatives 4-84

Figure 4.4-1. Landscape Units North of Florence Avenue/Salt Lake Avenue 4-108

Figure 4.4-2. Landscape Units South of Florence Avenue/Salt Lake Avenue..... 4-109

Figure 4.4-3. Existing and Proposed Views of I-10 Freeway, looking North at Long Beach Avenue 4-134

Figure 4.4-4. Existing and Proposed Views at Atlantic Avenue, looking East toward Proposed Firestone Station Area 4-135

Figure 4.4-5 Existing and Proposed Views of Long Beach Avenue, looking South toward 53rd Street Pedestrian Bridge 4-146

Figure 4.4-6. Existing and Proposed Views of Salt Lake Avenue at Huntington Park Community Center, looking South 4-147

Figure 4.4-7. Existing and Proposed Views of Randolph Street at Miles Avenue, looking East.....	4-154
Figure 4.4-8. Existing and Proposed Views of Downey Avenue, looking South.....	4-166
Figure 4.4-9. Existing and Proposed Views of Bellflower Boulevard, looking East from Bellflower Bike Trail.....	4-179
Figure 4.4-10. Existing and Proposed Views at Pioneer Boulevard, looking Southwest toward Proposed Pioneer Station Area	4-180
Figure 4.7-1. Noise Impact Criteria for Transit Projects	4-244
Figure 4.7-2. Noise Monitoring Locations and Existing Noise Levels.....	4-249
Figure 4.7-3. Noise Monitoring Locations and Existing Noise Levels.....	4-250
Figure 4.7-4. Noise Monitoring Locations and Existing Noise Levels.....	4-251
Figure 4.7-5. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (Southeast Los Angeles to Florence)	4-285
Figure 4.7-6. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (Florence to City of Huntington Park)	4-286
Figure 4.7-7. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Huntington Park to City of Cudahy).....	4-287
Figure 4.7-8. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of South Gate)	4-288
Figure 4.7-9. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Paramount to City of Bellflower).....	4-289
Figure 4.7-10. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Bellflower to City of Cerritos).....	4-290
Figure 4.7-11. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Cerritos to City of Artesia)	4-291
Figure 4.7-12. Freight Noise Impacts Remaining After Mitigation, including Soundwalls.....	4-297
Figure 4.7-13. Freight Noise Impacts Remaining After Mitigation, including Soundwalls.....	4-298
Figure 4.7-14. Vibration Impacts Remaining After Mitigation (Southeast Los Angeles).....	4-306
Figure 4.7-15. Vibration Impacts Remaining After Mitigation (City of Huntington Park to City of Bell)	4-307
Figure 4.7-16. Vibration Impacts Remaining After Mitigation (City of Paramount).....	4-308
Figure 4.7-17. Vibration Impacts Remaining After Mitigation (City of Paramount to City of Bellflower).....	4-309
Figure 4.7-18. Vibration Impacts Remaining After Mitigation (City of Bellflower)	4-310
Figure 4.7-19. Vibration Impacts Remaining After Mitigation (City of Bellflower to City of Cerritos).....	4-311
Figure 4.8-1. Drainage Locations.....	4-325
Figure 4.8-2. Drainage Crossing 1 Jurisdictional Delineation	4-329
Figure 4.8-3. Drainage Crossing 2 Jurisdictional Delineation	4-330
Figure 4.8-4. Drainage Crossing 3 Jurisdictional Delineation	4-331

ACRONYMS AND ABBREVIATIONS

Acronyms	Definitions
µm	micrometer
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACGIH	American Conference of Governmental Industrial Hygienists
ACM	asbestos-containing materials
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADL	aerial-deposited lead
APE	Area of Potential Effects
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
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emission Estimator Model
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCTV	closed circuit television
CDC	Centers for Disease Control and Prevention
CDFW	California Department of Fish and Wildlife
CEQ	Council of Environment Quality
CEQA	California Environmental Quality Act

Acronyms	Definitions
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 ₂ e	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
DF	direct fixation
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
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

Acronyms	Definitions
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
GBN	ground-borne noise
GBV	ground-borne vibration
GHG	greenhouse gas
GIS	geographic information system
GO	General Order
GSA	Groundwater Sustainability Agency
GWP	global warming potential
H ₂ S	hydrogen sulfide gas
Hz	hertz
HHS	U.S. Department of Health and Human Services
HUD	Department of Housing and Urban Development
I-	Interstate
IEEE	Institute of Electrical and Electronics Engineers
IGP	Industrial General Permit
in/sec	inches per second
kV	kilovolt
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
LADBS	Los Angeles Department of Building and Safety

Acronyms	Definitions
LADPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LA-NMS	Los Angeles – North Main Street
LAPD	Los Angeles Police Department
LARWQCB	Los Angeles Regional Water Quality Control Board
LAUS	Los Angeles Union Station
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
LEL	lower explosive limit
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
L RTP	long range transportation plan
LRV	light rail vehicle
MDE	maximum design earthquake
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

Acronyms	Definitions
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
MWD	Metropolitan Water District
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
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
OEHHA	California Office of Environmental Health Hazard Assessment
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

Acronyms	Definitions
PCB	polychlorinated biphenyls
pCi/l	picocuries per liter of air pCi/l
PEL	permissible exposure limit
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
PRC	Public Resources Code
PRMMP	Paleontological Resources Mitigation and Monitoring Program
Project	West Santa Ana Branch Transit Corridor Project
RCRA	Resource Conservation and Recovery 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
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
SEL	sound exposure level
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SHPO	State Historic Preservation Office

Acronyms	Definitions
SIP	State Implementation Plan
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO ₂	sulfur dioxide
SR	State Route
SRA	Source Receptor Areas
STEL	short-term exposure limit
SWIS	Solid Waste Information System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TAP	Tunnel Advisory Panel
TAZ	Transportation Analysis Zone
TBM	tunnel boring machine
TC&C	train control and communications
TCE	temporary construction easement
TCP	Traditional Cultural Property
TCR	Tribal Cultural Resource
TLV	threshold limit value
TMDL	total maximum daily load
TOD	transit-oriented development
TPSS	traction power substation
TSB	LACSD Transit Services Bureau
TVA	Threat and Vulnerability Assessment
TWA	time weighted average
U.S.C.	United States Code
UBC	Uniform Building Code
UEL	upper explosive limit
UPRR	Union Pacific Railroad
US-101	U.S. Highway 101
USACE	United States Army Corps of Engineers
USDHHS	United States Department of Health and Human Services

Acronyms	Definitions
USDOT	U.S. Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tanks
VdB	decibel notation
VMT	vehicle miles traveled
VOC	volatile organic compounds
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 West Santa Ana Branch (WSAB) Transit Corridor (Project). 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 Draft 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. The analysis in this 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 Draft EIS/EIR.

The sections in this chapter summarize the analysis included in the impact analysis reports that are included as Appendices A through Q and S through FF of this Draft EIS/EIR and incorporated by reference. Each section of this chapter evaluates a No Build Alternative, four Build Alternatives, two design options, and two maintenance and storage facility (MSF) site options. The No Build Alternative reflects the 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 and Build Alternatives are described in Chapter 2, Alternatives Considered/Project Description. 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. The Metro planning and travel demand modeling process has assumed incremental growth in the WSAB Study Area and surrounding region consistent with this forecast. On September 3, 2020, Connect SoCal (2020-2045 RTP/SCS) was adopted by SCAG after the Draft EIS/EIR modeling and relevant analyses were completed. To maintain consistency with Metro's overall approach to planning, the 2016 and 2020 RTP/SCS socioeconomic data have been compared for the WSAB Study Area. The results of the comparison for future year 2042 show a less than 1 percent difference in the population and employment growth forecasts for Los Angeles (LA) County and for the Study Area (i.e., the area within 2 miles of the Build Alternative alignments). This is within the

range of Metro’s planning and travel demand modeling assumptions. The differences in the growth forecasts for the area are not substantive and would not alter Metro’s planning assumptions.

The Affected Area for each element of the environment is a subset of the Study Area (described in Section 2.3 of the Project Description Chapter). 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 Build Alternatives for that individual element. The Affected Area is defined in the evaluation of each element as an element-specific area surrounding the proposed alignments, stations, parking facilities, traction power substations (TPSSs), and MSF site options. 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 project alignments
Transportation	Traffic Operations: key intersections identified that could be affected by the Project 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 Project
Land Use and Development	Within 50 feet of the Build Alternatives
Community and Neighborhoods	Within 0.25 mile of the proposed alignments, parking facilities, and MSF site options, and 0.5 mile around the proposed station areas
Displacements and Acquisitions	Displacement area: privately held residential, commercial, and industrial properties directly affected by the Build Alternatives Replacement area: cities affected by the Build Alternatives and other nearby cities that may provide replacement site options
Visual Quality and Aesthetics	Localized viewsheds for the Build Alternatives, including adjacent street ROWs that parallel, intersect, or face the Build Alternatives
Air Quality	South Coast Air Basin
Greenhouse Gas Emissions	South Coast Air Basin
Noise and Vibration	Immediate vicinity
Ecosystems and Biological Resources	Within 100 feet of the Build Alternatives
Geotechnical/Subsurface/Seismic	Within 250 feet of the Build Alternatives
Hazards and Hazardous Materials	Within 200 feet of the Build Alternatives; 0.25 mile for schools and landfills
Water Resources	Within 500 feet of the construction footprint

Topic	Geographic Extent
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, which 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 the Project. Where the project is underground or aerial, the architectural APE includes a one-parcel buffer extending out from the direct APE. Where the Project is at-grade, the architectural APE encompasses the same area as the direct APE described below.
Archaeological Resources	The direct APE encompassing the alignment ROWs, as well as all associated elements where construction would occur, including stations, laydown yards, maintenance facilities, and parking lots. Where the Project is at-grade, the direct APE includes the width of the existing railroad ROW. Where the Project is aerial, the direct APE encompasses the width of the proposed ROW. In areas with potential direct ground disturbance, the vertical extent of the direct APE extends approximately 115 feet below the existing ground surface and approximately 90 feet above the existing ground surface.
Paleontological Resources	The ground surface and subsurface within the proposed alignments, stations, MSF site options, 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
Parklands and Community Facilities	Within 0.25 mile of the Build Alternatives
Economic and Fiscal Impacts	Within 0.25 mile of the proposed alignments, parking facilities, and MSF site options, and 0.5 mile around the proposed station areas
Safety and Security	Within 100 feet of the Build Alternatives and within the 2-mile buffer from the project alignments for emergency services
Environmental Justice	Within 0.25 mile of the alignments, parking facilities, and MSF site options, and 0.5 mile of the station areas

Source: Metro 2021aa

Note: APE = Area of Potential Effects; EMI = electromagnetic interference; 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 current impacts of the recent social response to the COVID-19 virus and the resulting decline in travel demand, at this time, it is not possible to predict future changes to the project 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 Build Alternatives. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Land Use Impact Analysis Report* (Metro 2021a) (Appendix E).

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), *Metro Countywide Sustainability Planning Policy & Implementation Plan* (Metro 2012c), *Active Transportation Strategic Plan* (Metro 2016), 2009 LRTP (Metro 2009a), *Sustainable Rail Plan* (Metro 2013b), *Complete Streets Policy* (Metro 2014a), *First/Last Mile Strategic Plan* (Metro 2014b), and *Transit-Oriented Communities Policy* (Metro 2018a). The Project is identified as a financially constrained transit project from the Los Angeles/Orange County boundary toward downtown Los Angeles in the SCAG 2016-2040 RTP/SCS. The Project is also listed as a study in the *2017 Federal Transportation Improvement Program* (SCAG 2016b).

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 Build Alternatives would be located in or adjacent to. These plans include: *City of Los Angeles General Plan Framework* (City of Los Angeles 2001a), *City of Los Angeles Mobility Plan 2035* (City of Los Angeles 2016), *Central City North Community Plan* (City of Los Angeles 2000b), *Central City Community Plan* (City of Los Angeles 2003), *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), *Connect US Action Plan* (Metro 2015b), *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), *Hollydale Village Specific Plan* (City of South Gate 2017b), *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 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).

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 Build Alternatives, including the proposed alignment, stations, parking facilities, TPSSs, and MSF site options as these adjacent areas have been identified to be the area of potential impact. 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 options and 0.5 mile of the station areas are presented in the figures.

To satisfy NEPA requirements, land use effects of the Build Alternatives 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 Build Alternatives are located. The alternatives are evaluated against the existing and planned developments adjacent to and surrounding the Project to evaluate the compatibility of the facilities with neighboring land uses. An adverse effect on land use would 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 Project 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.

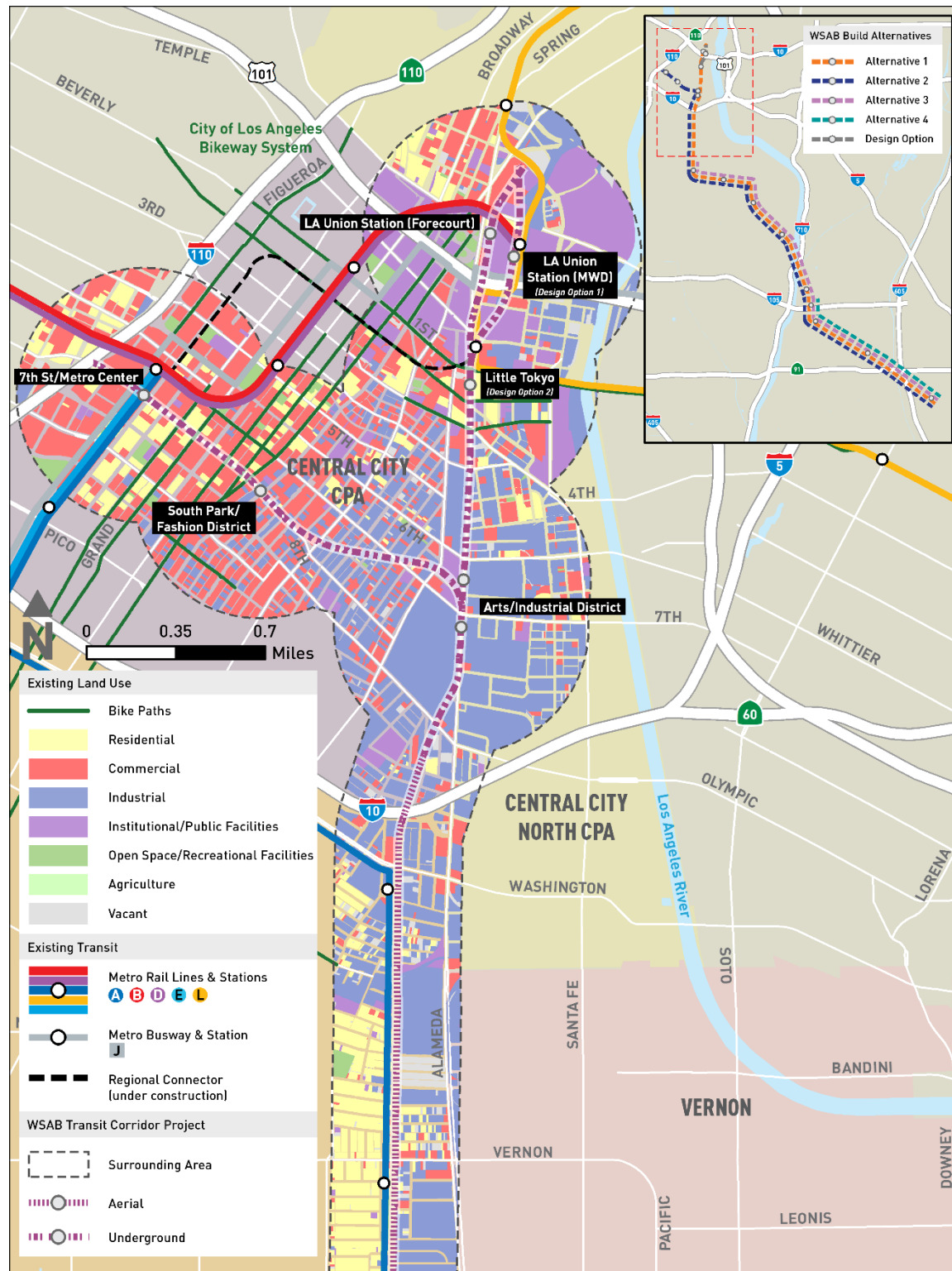
4.1.2 Affected Environment/Existing Conditions

The Build Alternatives would 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 Build Alternatives

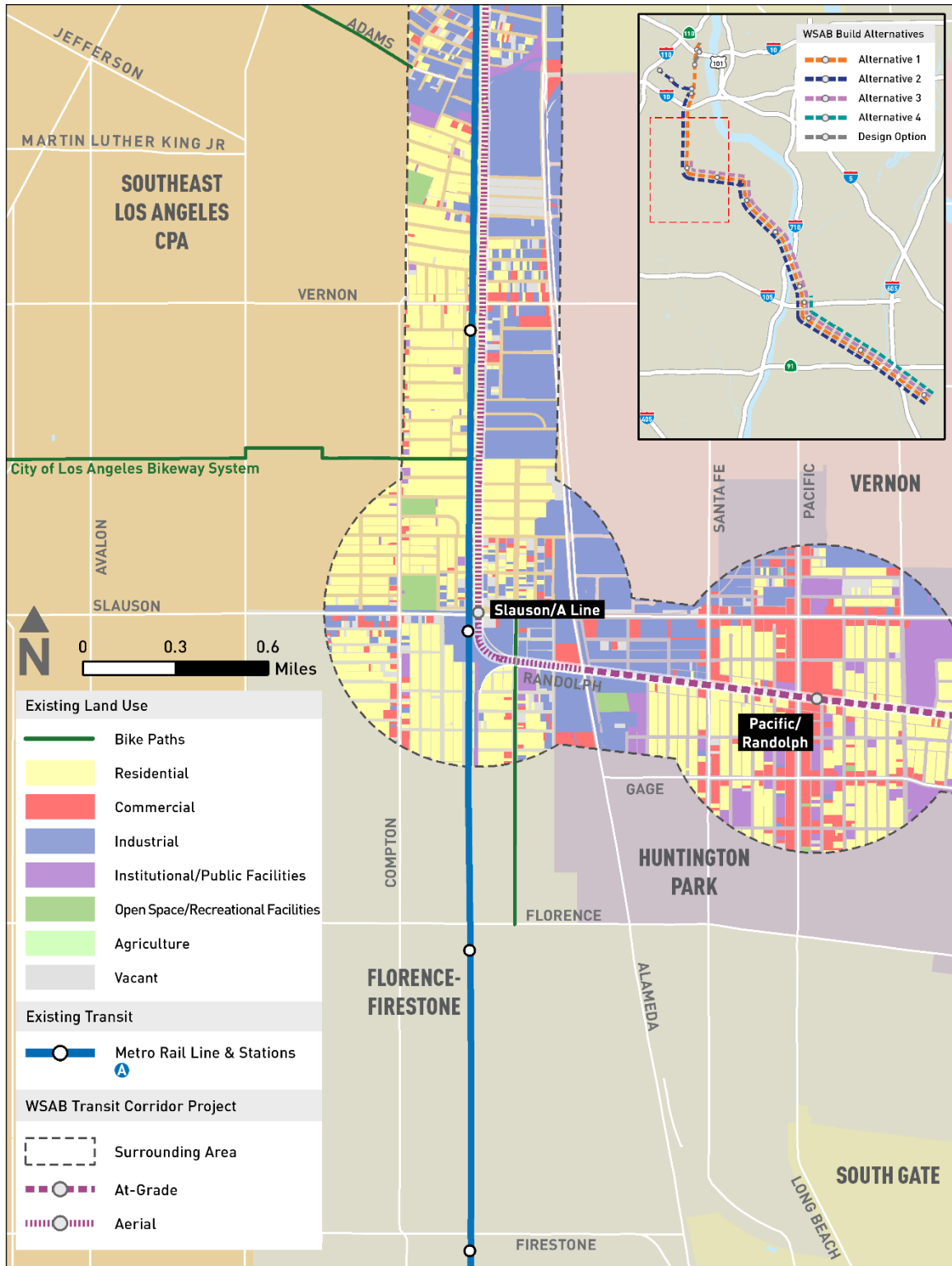
Figure 4.1-1 through Figure 4.1-5 provide an overall context of the land uses within 0.25 mile of the proposed alignment and 0.5 mile of the proposed stations that surround the Affected Area for land use.

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



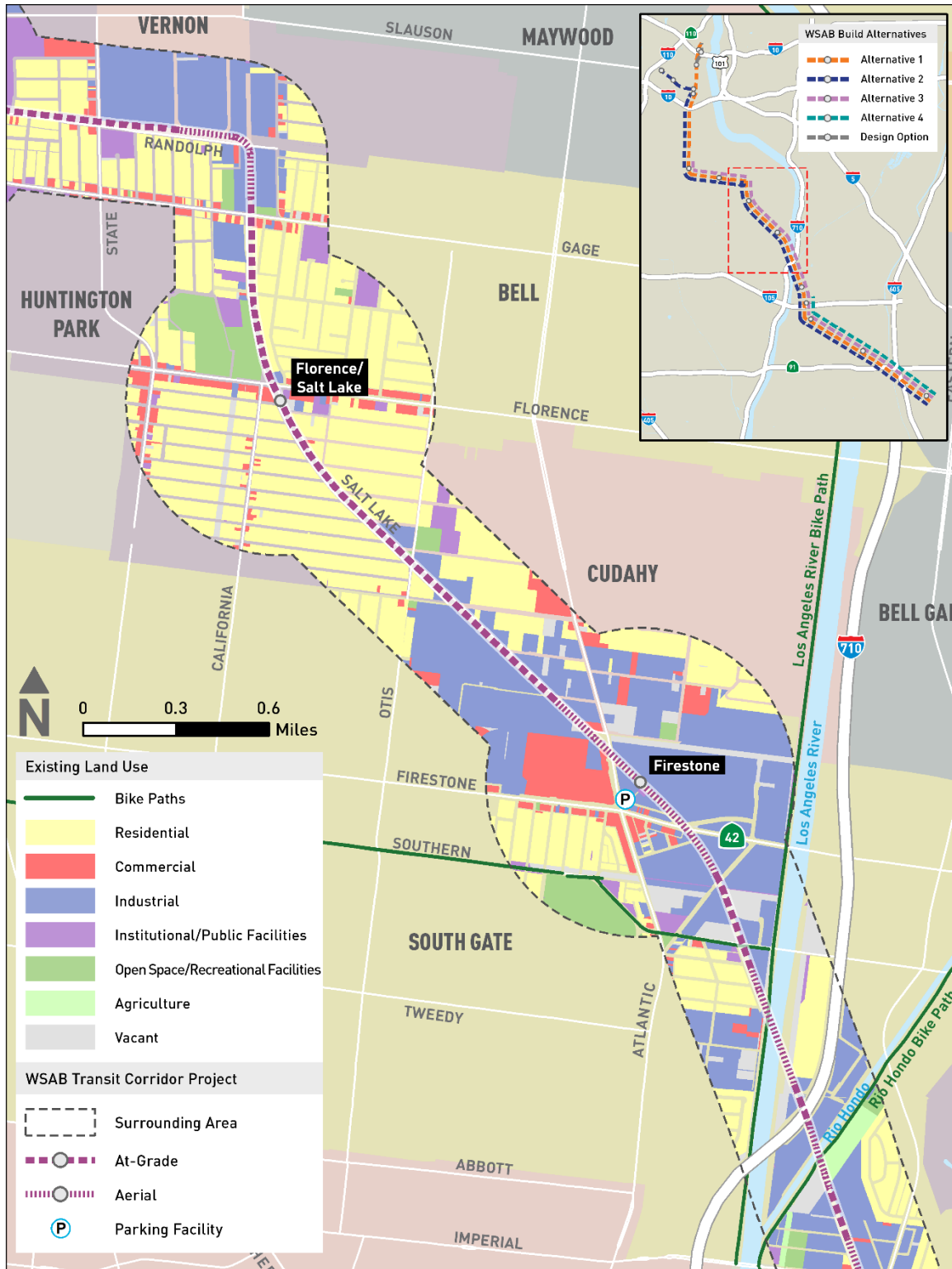
Source: Metro 2021a

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



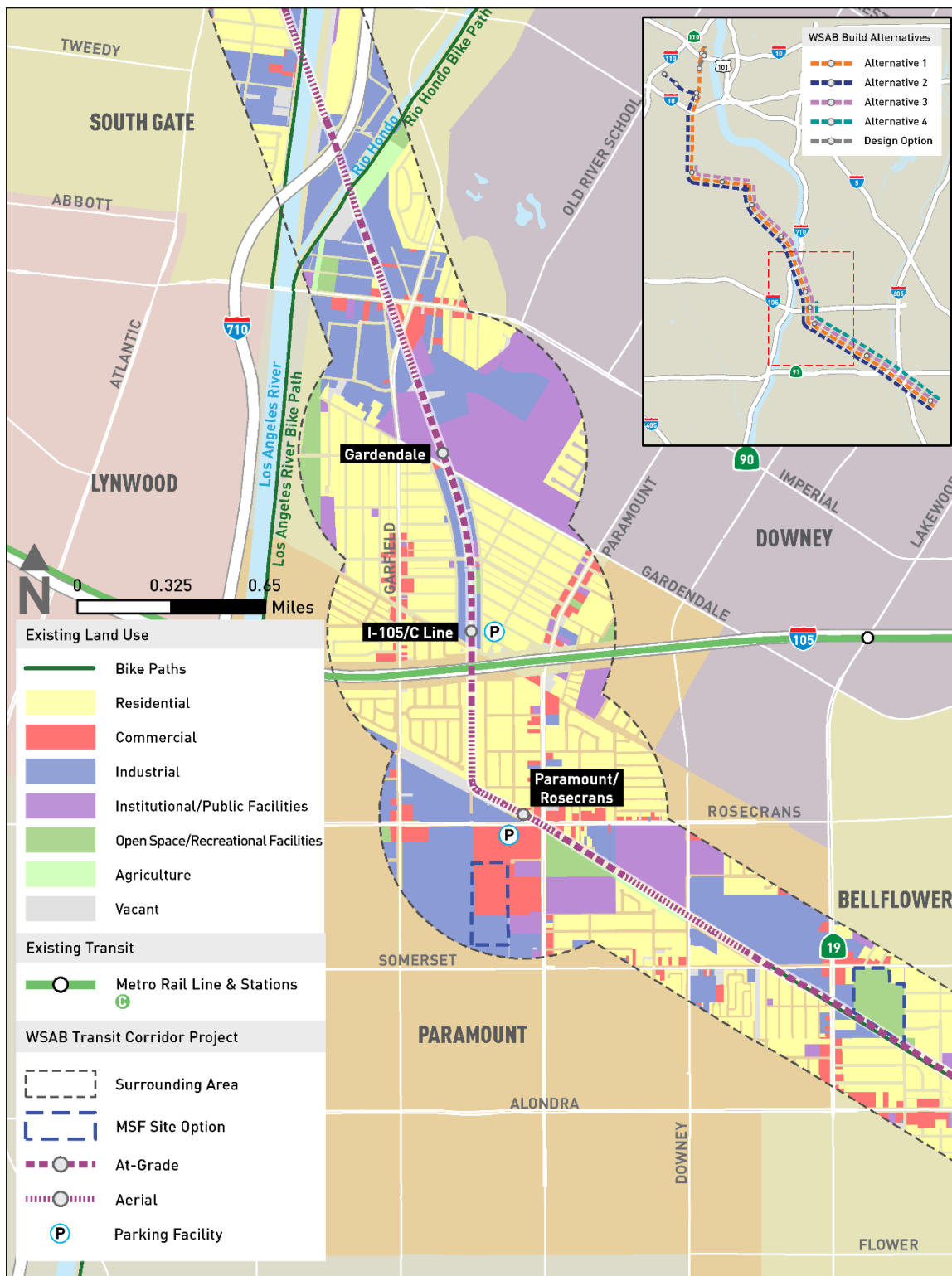
Source: Metro 2021a

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



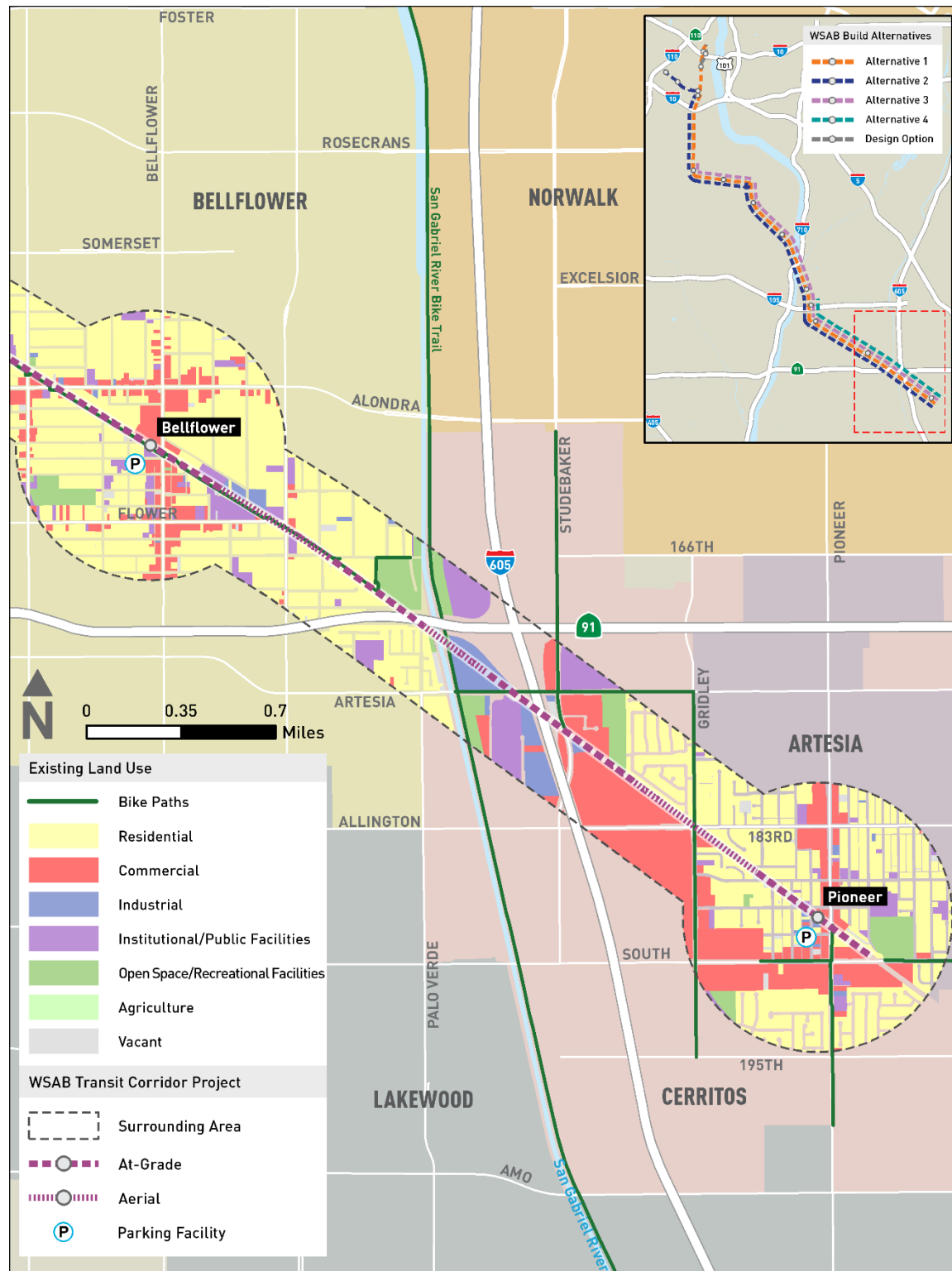
Source: Metro 2021a

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



Source: Metro 2021a

Figure 4.1-5. Existing Land Use within 0.25 Mile of the Alignment and 0.5 Mile of the Proposed Stations (from City of Bellflower to City of Artesia)



Source: Metro 2021a

Table 4.1.1 provides the land use distribution of the Affected Area for land use (50 feet adjacent) and the land uses within 0.25 mile of the alignment and 0.5 mile of the station areas) for each Build Alternative. Residential use is the most prominent land use adjacent to each Build Alternative, with the exception of Alternative 3 in which industrial land use is the most prominent land use.

Table 4.1.1. Land Use Distribution for the Build Alternatives

Land Use	Percent of Land Use (%) ¹							
	Alternative 1 19.3 miles		Alternative 2 19.3 miles		Alternative 3 14.8 miles		Alternative 4 6.6 miles	
	Affected Area ²	Surrounding Area ³	Affected Area ²	Surrounding Area ³	Affected Area ²	Surrounding Area ³	Affected Area ²	Surrounding Area ³
Agriculture	0.4	0.1	0.3	0.1	2.0	2.0	1.8	0.1
Commercial	2.6	7.0	3.8	20.1	6.2	8.2	11.6	9.3
Industrial	13.4	14.9	9.1	10.0	34.5	15.5	12.9	8.0
Institutional/ Public Facilities	6.1	10.5	3.2	2.7	18.1	6.0	1.6	6.9
Open Space/ Recreational Facilities	2.0	1.9	1.5	1.4	9.2	3.1	23.3	3.0
Residential	73.6	63.3	80.9	64.3	23.3	64.3	45.0	71.5
River	0.7	0.5	0.5	0.3	3.0	0.8	0.2	0.4
Vacant	1.2	1.8	0.8	1.0	3.9	1.8	3.5	0.9

Source: Metro 2021a

Notes: ¹ The land use distribution characterizes the land uses within the Affected Area and in the Surrounding Area for each Build Alternative. 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 Build Alternatives.

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

Table 4.1.2 identifies the adjacent and surrounding land uses for each proposed station, including both design options. Surrounding land uses generally include agricultural, 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, river, and vacant uses.

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

	Station Area	Affected Area ¹	Surrounding Area ²
Alternative 1	LA Union Station (Forecourt)	Residential, Institutional/Public Facilities	Residential, Industrial, Commercial, Open Space, Institutional/Public Facilities
	Arts/Industrial District (north of 7th Street)	Industrial, Institutional/Public Facilities	
Alternative 2	7th St/Metro Center	Residential, Commercial	Residential, Industrial, Commercial, Open Space, Institutional/Public Facilities
	South Park/Fashion District	Residential, Commercial	
	Arts/Industrial District (south 7th Street)	Industrial	
Alternative 1, 2, and 3	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	
Alternative 1, 2, 3, and 4	I-105/C Line	Roadway	Residential, Commercial, Industrial, Open Space, Institutional/Public Facilities
	Paramount/Rosecrans	Residential, Commercial, Industrial	
	Bellflower	Commercial	
	Pioneer	Commercial	Residential, Commercial, Open Space, Institutional/Public Facilities, Industrial
Design Options	Design Option 1: LA Union Station (Metropolitan Water District)	Residential, Institutional/Public Facilities	Residential, Industrial, Commercial, Open Space, Institutional/Public Facilities
	Design Option 2: Little Tokyo	Residential, Commercial	

Source: Metro 2021a

Notes: ¹ "Affected Area" is defined as the adjacent area within approximately 50 feet of the Build Alternatives.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 Facilities

Figure 4.1-6 shows the existing land uses within 0.25 mile of the proposed MSF site options. Table 4.1.3 identifies land uses adjacent to the Paramount and Bellflower MSF site options. Surrounding land uses around the Paramount MSF site option generally include residences, commercial, industrial, institutional/public facilities (i.e., places of worship, preschools/daycares, schools), open space/recreational facilities (i.e., parks and recreational facilities), and vacant uses. Surrounding land uses around the Bellflower MSF site option 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 Adjacent to MSF Site Options

MSF Site Option	Land Use	Percent of Land Use (%) ¹	
		Affected Area ²	Surrounding Area ³
Paramount MSF Site Option	Residential	0	8.6
	Commercial ⁴	35.4	19.7
	Industrial ⁴	61.3	55.7
	Institutional/Public Facilities	3.3	9.5
	Open Space/Recreational Facility	0	5.2
	Vacant	0	1.2
Bellflower MSF Site Option	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 2021a

Notes: MSF = maintenance and storage facility

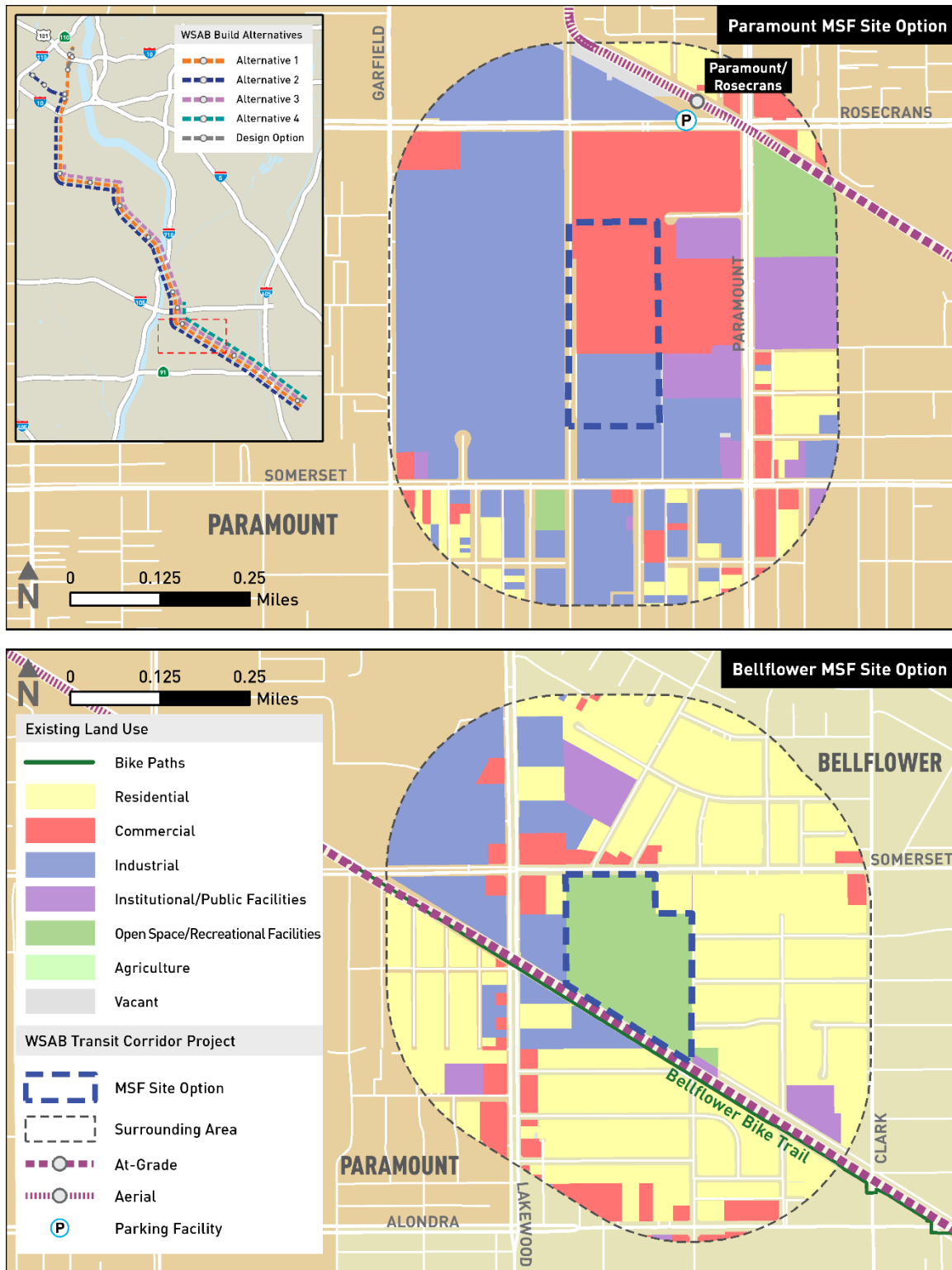
¹ Percent of land use may not equal 100 percent due to rounding.

² "Affected Area" is defined as the adjacent area within approximately 50 feet of the Build Alternatives.

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 option boundary.

Figure 4.1-6. Existing Land Use within 0.25 Mile of the Maintenance and Storage Facility Site Options



Source: Metro 2021a

4.1.3 Environmental Consequences/Environmental Impacts

4.1.3.1 No Build Alternative

Under the No Build Alternative, the Project would not be developed; properties would not be acquired for the Project; and no structures along the project alignment would be demolished. The existing freight tracks within the rail rights-of-way (ROW) would remain undisturbed, and no aerial structures would be built along the public or rail ROWs. Future bike paths identified along the project 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.

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 Build Alternatives 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 Build Alternatives, 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; and
- 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 project 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, better environment, a more efficient transportation system, and sustainable outcomes in the long

run. 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. However, as detailed 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 Alternative would result in a continuation of current development patterns. Since the Project would not be built, future planning of transit-oriented developments (TODs) surrounding the project 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	<ul style="list-style-type: none"> • <i>City of Los Angeles Central City North Community Plan</i> Goal 12 • <i>City of Los Angeles Central City Community Plan</i> Goal 12 • <i>City of Los Angeles Southeast Los Angeles Community Plan</i> Objective 11-2 and Goal 13 • <i>Los Angeles County General Plan</i> Policy M4.1 • <i>City of Huntington Park General Plan</i> Goal 4.0 • <i>City of Cudahy 2040 General Plan Transportation Element</i> Policy CE-3.1 • <i>City of South Gate General Plan 2035 Community Design Element</i> Objective CD 3.1- Policy P.1, <i>Mobility Plan Element</i> Goal ME2, and <i>Healthy Community Element</i> Objective HC2.3-Policy P.1 • <i>Downey Vision 2025 Circulation Element</i> Goal 2.2, Policy 2.2.4, and Program 2.4.1.5 • <i>City of Paramount General Plan</i> Policies 6 and 9 • <i>City of Bellflower General Plan</i> Goal 4 • <i>City of Cerritos General Plan Circulation Element</i> Goal CIR-8 • <i>City of Artesia General Plan Circulation and Mobility Sub-Element</i> Policy Action CIR4.2.4 and Community Goal CIR5; <i>Air Quality and Climate Change Sub-Element</i> Policy Action AQ2.1.1; and <i>Sustainability Element</i> Community Goal SUS5
Increased mobility, transit access, and transit services	<ul style="list-style-type: none"> • <i>City of Los Angeles Mobility Plan 2035</i> Policies 3.5 and 3.7 • <i>City of Los Angeles Central City North Community Plan</i> Goal 10 and Objective 10-1.3 • <i>City of Los Angeles Southeast Los Angeles Community Plan</i> Goal 11 • <i>Los Angeles County General Plan</i> Policy M4.4 • <i>City of Cudahy 2040 General Plan Transportation Element</i> Goal CE-2 • <i>City of South Gate General Plan 2035 Community Design Element</i> Objective CD1.2-Policy P.1, Objective ME2.2-Policies P.1 and P.2 • <i>City of South Gate Gateway District Specific Plan</i> Goal 2

Policy Topic	Plans and Policies
	<ul style="list-style-type: none"> • <i>City of South Gate Hollydale Village Specific Plan</i> Policy 6.2 • <i>City of Paramount General Plan</i> Policy 11 • <i>City of Bellflower General Plan</i> Goal 3 and Policy 3.1 • <i>City of Cerritos General Plan Circulation Element</i> Policies CIR-6.6 and CIR-8.2 • <i>City of Artesia General Plan Circulation and Mobility Sub-Element</i> Policy CIR5.1 and <i>Community Policy</i> CIR6.2, <i>Air Quality and Climate Change Sub-Element</i> Policy Action AQ2.1.6, <i>Sustainability Element</i> Community Policy Action SUS5.1.7
Emissions reductions	<ul style="list-style-type: none"> • <i>City of Cudahy 2040 General Plan Air Quality Element</i> Goal AQE-2 • <i>City of South Gate General Plan 2035 Healthy Community Element</i> Objective HC7.2-Policies P.1 and P.8 • <i>City of Bellflower General Plan</i> Policy 4.1
Policies for compact and denser development, including TODs	<ul style="list-style-type: none"> • <i>City of Los Angeles General Plan</i> Objectives 3.13 and 3.15, Policy 3.15.3 • <i>Los Angeles County General Plan</i> Policies LU4.4 and M5.1, Goal M5 • <i>Florence-Firestone Community Plan</i> Goals R-2 and TD-3, Policies R-2.3 and TD-2.4 • <i>City of Los Angeles Land Use/Transportation Policy</i> • <i>City of Cudahy 2040 General Plan Air Quality Element</i> Policy AQE2.1 • <i>City of South Gate General Plan 2035 Community Design Element</i> Objective CD3.1- Policies P.2, P.4 and P.5 • <i>City of South Gate General Plan 2035 Healthy Community Element</i> Objective HC2.3-Policy P.4 • <i>City of Artesia General Plan Air Quality and Climate Change Sub-Element</i> Policy Action AQ2.2.3

Source: Metro 2021a

Note: TODs = transit-oriented developments

4.1.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Land Use Compatibility

Alignment: Descriptions of the alignment configurations are described in Chapter 2, Alternatives Considered/Project Description. Alternative 1 would be primarily underground between Los Angeles Union Station (LAUS) to a point north of the 14th Street/Long Beach Avenue intersection. Land use in this area is characterized as highly urbanized and developed. Land uses surrounding the at-grade portions of the alignment are urban and suburban in character with surrounding communities developed around the rail ROW. Furthermore, the proposed aerial alignment would not result in land use incompatibility with urban and suburban areas along the alignment. Overall, the alignment would 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 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.

Parking: Existing on-street and off-street parking would need to be removed/relocated in several areas along the proposed alignment. This would include the removal/relocation of several on-street parking spaces along Alameda Street between Bay Street and Newton Street, along Long

Beach Avenue between 24th Street and 41st Place and several off-street parking spaces, such as at an industrial property at the southeast corner of 6th Street/Alameda Street. Existing on-street and off-street parking would need to be removed/relocated in several areas along the rail ROWs (i.e., along Randolph Street, within the rail ROW along Randolph Street and Salt Lake Avenue, the northeast corner of Randolph Street/Pacific Boulevard intersection, the southwest and southeast corners of the Florence Avenue/Salt Lake Avenue intersection, and Main Street grade crossing). The removal of on- and off-street parking spaces may result in an increased demand for on-street parking that could affect parking in the surrounding streets. However, the removal/relocation of parking spaces and the loss of parking is not anticipated to impair the function of the affected private properties, and access to the surrounding uses would remain. Changes to parking would be compatible with the surrounding land uses and consistent with local land use policies and zoning code requirements. Additionally, the removal of parking within the rail ROW would not result in an incompatible land use as the rail ROW would continue to be used as a rail corridor. Furthermore, the Project would improve overall transit connectivity by providing alternate means of access to communities surrounding the alignment. Therefore, no adverse effects regarding land use compatibility would occur.

Parking facilities proposed at the Firestone, Interstate (I-) 105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations would provide ingress and egress and pedestrian walkways connecting the parking facilities to the proposed stations. The parking facility sites would 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 would be generally compatible with the surrounding land uses.

Stations: Proposed underground stations (i.e., LAUS and Arts/Industrial District) and at-grade stations (i.e., Pacific/Randolph, Florence/Salt Lake, Gardendale, I-105/C Line, Bellflower, and Pioneer) would include station entrances designed and integrated with the surrounding uses. Aerial stations (i.e., Slauson/A Line, Firestone, and Paramount/ Rosecrans) would be situated on an aerial structure over the public and/or rail ROWs. The stations would not change or impair the function of the surrounding land uses, and access to the surrounding uses would 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 would add vibrancy to the area. The proposed 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 proposed 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 would remain available. The proposed stations would be designed and integrated with the surrounding uses and be compatible with the surrounding land uses.

Freight Track Relocation: Alternative 1 would require the relocation of existing freight tracks south of Slauson Avenue and where the aerial structure curves from the La Habra Branch ROW to the San Pedro Subdivision ROW to accommodate the proposed aerial structures. Alternative 1 would also require the relocation of portions of the Union Pacific Railroad freight tracks to accommodate for dual tracks. Active freight service in the existing rail ROWs north of Somerset Boulevard would be maintained. Although freight tracks would be relocated, existing track sidings and spurs, and active freight service would be maintained within the rail ROWs and would not change the function of the rail ROW. The aerial

structures in and adjacent to the rail ROWs would 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 would occur.

Street Closures: The proposed aerial structure north of the I-10 freeway would result in permanent street closures at Long Beach Avenue north of 14th Street, and at 14th Street west of Long Beach Avenue. In addition, 188th Street between Corby Avenue and Pioneer Boulevard and 187th Street and Corby Avenue in Artesia would be permanently closed to build a parking structure, accommodate traffic flow, and reduce cut-through traffic. Access to the surrounding uses would be maintained by re-routing traffic to adjacent streets, and permanent access disruptions to existing land uses on either side of the alignment would not occur. The proposed street closures would not conflict with the surrounding land uses and would not physically divide an established community since the surrounding land uses would remain accessible.

Barriers: Physical barriers (e.g., fencing, walls) would be located along sections of the proposed 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 would be located along the rear of adjacent properties, existing barriers, such as fencing, currently separate adjacent land uses from the alignment. Portions of the alignment structures would 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 (specifically, Randolph Street between Holmes Avenue and Wilmington Avenue, Flora Vista Street between Cornuta Avenue and Flower Street, and Flora Vista Street between Woodruff Avenue and California Avenue). Alternative 1 would also introduce vehicle-turning restrictions at five streets that intersect with Randolph Street (Wilmington Avenue, Regent Street, Albany Street, Rugby Avenue, and Rita Avenue) that could create barriers to an established community. Alternative 1 would additionally add turning restrictions for trucks at two intersections along Randolph Street: Alameda Avenue East and Pacific Boulevard.

Barriers introduced along the proposed alignment would follow the Metro Rail Design Criteria (MRDC) guidance or equivalent criteria¹. Access to surrounding uses would 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 would also be maintained, and permanent disruptions to access would not occur, thereby maintaining connectivity through the community. Barriers and vehicle-turning restrictions would not change or impair the function of the surrounding land uses, conflict with the surrounding land uses, or physically divide an established community.

Pedestrian Bridges: The existing pedestrian bridge on Long Beach Avenue at 53rd Street in the City of Los Angeles would remain at its existing location and accessible to pedestrians. The Arthur Avenue pedestrian bridge in the City of Paramount, which is currently closed off to pedestrians, would be reconstructed as part of Alternative 1 and would allow pedestrian access to the north and south sides of the I-105 freeway. The existing pedestrian bridge between Paramount High School and Paramount Park in the City of Paramount would be demolished and replaced with a pedestrian undercrossing or pedestrian tunnel allowing

¹ 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.

undisturbed access to Paramount High School and Paramount Park. Changes to the pedestrian bridges would 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 would be required. Additional information on acquisitions is provided in Section 4.3, Acquisitions and Displacements. Alternative 1 would require partial property acquisitions of existing Los Angeles Department of Water and Power (LADWP) properties in the City of Paramount that parallel the PEROW, contain transmission towers, the Paramount Bike Trail, and are used as a nursery. The partial acquisition of the LADWP properties would not interfere with the use of the transmission towers and transmission lines, and the nursery would continue to operate on the remaining portions of the properties. As a result, the acquisition of these properties would not conflict with the current land uses on the site as current operations would be maintained. Metro's role in the ownership of these parcels would be limited to that of a property owner, and the parcels would be subject to the land use controls of the local jurisdictions. Although Metro transportation projects are not required to adhere to local land use regulations, Metro would comply with local policies and regulations regarding such improvements. Thus, property acquisitions would 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 are proposed 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 are not proposed on residential sites. Metro would require partial acquisition of the identified properties once the TPSS locations are finalized. The TPSS sites would be enclosed by a barrier and would not adversely affect circulation patterns, preclude access to the remainder of the potential site and adjacent properties, or affect continued use of the potential sites and adjacent properties for their designated purposes. Although Metro transportation projects are not required to adhere to local land use regulations, Metro would comply with local policies and regulations regarding such improvements. Therefore, no adverse effects regarding land use compatibility would occur.

Bicycle Trails: Alternative 1 would be adjacent to the Paramount Bike Trail and Bellflower Bike Trail, located parallel along and partially within the PEROW. Operation of Alternative 1 within segments of the PEROW extending south from the intersection of Rosecrans Avenue and Paramount Boulevard to Lakewood Boulevard may not have sufficient room to accommodate the project alignment and operate the Paramount Bike Trail safely, which may require a realignment of the Paramount Bike Trail. Specifically, the Paramount Bike Trail segment between Somerset Boulevard and Lakewood Boulevard is located within the PEROW. Alternative 1 would 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. The relocation of this segment of the Paramount Bike Trail would require users of the bike trail to cross the railroad tracks at Lakewood Boulevard to access the bike trail across the street.

Alternative 1 would also require the removal of an approximately 930-foot-long segment of the existing Paramount Bike Trail near Somerset Boulevard to accommodate the track alignment; however, the segment close to Lakewood Boulevard would remain. This segment of the existing bike trail is located at the end of the Paramount Bike Trail.

Additionally, Alternative 1 would 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 would be realigned, the bike trail would remain within the PEROW and the function of the bike trail would be maintained. The bike trail and bus stop would continue to be available for use by the community. Nonetheless, implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Changes to the existing trails would 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 would occur.

Summary: Alternative 1 would 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, Alternative 1 would serve the residents, visitors, and employees of the surrounding community and cities. Under NEPA, Alternative 1 would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Alternative 1 would 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 Project another mode of transportation to access regional destinations and employment areas; and would reduce overall air quality emissions and traffic congestion. Alternative 1 would be consistent with SCAG 2016-2040 RTP/SCS Policy 1 as the Project would provide reliable, fixed-guideway transit service that would increase mobility and connectivity for historically underserved, transit-dependent, and environmental justice communities. Alternative 1 would also 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 would result in cleaner air, a better environment, a more efficient transportation system, and sustainable outcomes in the long run. Under NEPA, Alternative 1 would 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

Alternative 1 would 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.

Alternative 1 would connect with local transit lines and bicycle facilities; integrate safety measures for transit users and bicyclists; improve and provide greater transit opportunities to residents, visitors, and employees; and connect with local transit lines and bicycle facilities. Additionally, the station areas would be designed to be pedestrian and bicycle friendly.

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail would 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, would be implemented to maintain connectivity. Alternative 1 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, Alternative 1 would result in an inconsistency with the current local plans and an adverse effect would occur.

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. As part of this effort, Metro, as appropriate, would 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 would remain for Alternative 1 related to consistency with local land use plans.

4.1.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Land Use Compatibility

Similar to Alternative 1, Alternative 2 would be primarily underground from 7th Street/Metro Center to a point north of the 14th Street/Long Beach Avenue intersection with land uses characterized as highly urbanized and developed. Alternative 2 would not change or impair the function of the surrounding uses or physically divide an established community. Alternative 2 proposed underground stations (i.e., 7th Street/Metro Center, South Park/Fashion District, and Arts/Industrial District) would include station entrances designed and integrated with the surrounding uses. Several on- and off-street parking spaces would also be removed. Neither the stations nor parking removal would introduce any physical barriers or change or impair the function of the surrounding uses; and access to the surrounding community would also remain available.

Alternative 2 would include the same aerial and at-grade stations, structures, and effects from the alignment (i.e., parking, stations, freight track relocation, street closures, barriers, pedestrian bridges, TPSSs, property acquisitions, and bike trails) as those described for Alternative 1.

Therefore, the impact conclusions for Alternative 1 are applicable to Alternative 2.

Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), described in Section 4.1.4, would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Under NEPA, Alternative 2 would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Similar to Alternative 1, Alternative 2 would be consistent with and support SCAG 2016-2040 RTP/SCS Policy 1, Policy 6, and Policy 7. Under NEPA, Alternative 2 would 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

Alternative 2 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit as Alternative 1. Under NEPA, Alternative 2 could preempt the future development and implementation of planned bike paths identified for the Cities of Cudahy, Huntington Park, South Gate, and Bell as discussed under Alternative 1 and result in adverse effects. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), described in Section 4.1.4, would be required. 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.

Alternative 2 would connect with local transit lines and bicycle facilities; integrate safety measures for transit users and bicyclists; improve and provide greater transit opportunities to residents, visitors, and employees; and connect with local transit lines and bicycle facilities. Additionally, the station areas would be designed to be pedestrian and bicycle friendly.

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail would not result in adverse physical effects or prevent access to existing bike facilities. Mitigation Measure LU-1 (Consistency with Bike Plans) would be implemented to maintain connectivity. Alternative 2 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, Alternative 2 would result in an inconsistency with the current local plans and an adverse effect would occur.

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. As part of this effort, Metro, as appropriate, would 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 would remain for Alternative 2 related to consistency with local land use plans.

4.1.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Land Use Compatibility

Alternative 3 does not include an underground alignment. Alternative 3 would include the same aerial and at-grade stations and structures, and effects from the alignment, as those described for Alternatives 1 and 2, with these effects beginning at the tail tracks for the Slauson/A Line Station, located just north of Slauson Avenue in the Florence-Firestone community of unincorporated LA County at 55th Street in the City of Los Angeles. This is a shorter aerial alignment segment than Alternatives 1 and 2, where the northernmost aerial alignment begins at 14th Street/Long Beach Avenue. Therefore, the impact conclusions for Alternatives 1 and 2 are applicable to Alternative 3. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be effective to demonstrate that modifications to

the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Under NEPA, Alternative 3 would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Similar to Alternatives 1 and 2, Alternative 3 would be consistent with and support SCAG 2016-2040 RTP/SCS Policy 1, Policy 6, and Policy 7. Under NEPA, Alternative 3 would 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

Alternative 3 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified in Alternatives 1 and 2. Under NEPA, Alternative 3 could preempt the future development and implementation of planned bike paths identified for the Cities of Cudahy, Huntington Park, South Gate, and Bell, as discussed under Alternatives 1 and 2.

Alternative 3 would connect with local transit lines and bicycle facilities; integrate safety measures for transit users and bicyclists; improve and provide greater transit opportunities to residents, visitors, and employees; and connect with local transit lines and bicycle facilities. Additionally, the station areas would be designed to be pedestrian and bicycle friendly.

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail would not result in adverse physical effects or prevent access to existing bike facilities. Mitigation Measure LU-1 (Consistency with Bike Plans) would be implemented to maintain connectivity. Alternative 3 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, Alternative 3 would result in an inconsistency with the current local plans and an adverse effect would occur.

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. As part of this effort, Metro, as appropriate, would 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 would remain for Alternative 3 related to consistency with local land use plans.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Land Use Compatibility

Alternative 4 does not include an underground alignment. Alternative 4 would include the same aerial and at-grade stations and structures, and effects from the alignment, as those described for Alternatives 1, 2, and 3, with these effects beginning at the tail tracks for the

I-105/C Line Station at Main Street in the City of South Gate. This is a shorter segment of aerial alignment than Alternatives 1, 2, and 3. Therefore, the impact conclusions for Alternatives 1, 2, and 3 are applicable to Alternative 4. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Under NEPA, Alternative 4 would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Similar to Alternatives 1, 2, and 3, Alternative 4 would be consistent with and support SCAG 2016-2040 RTP/SCS Policy 1, Policy 6, and Policy 7. Under NEPA, Alternative 4 would 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

Alternative 4 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified in Alternatives 1, 2, and 3 for the Cities of South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia.

Alternative 4 would connect with local transit lines and bicycle facilities; integrate safety measures for transit users and bicyclists; improve and provide greater transit opportunities to residents, visitors, and employees; and connect with local transit lines and bicycle facilities. Additionally, the station areas would be designed to be pedestrian and bicycle friendly.

Realignment of segments of the Paramount Bike Trail and Bellflower Bike Trail would not result in adverse physical effects or prevent access to existing bike facilities. Mitigation Measure LU-1 (Consistency with Bike Plans) would be implemented to maintain connectivity. Alternative 4 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, Alternative 4 would result in an inconsistency with the current local plans and an adverse effect would occur.

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. As part of this effort, Metro, as appropriate, would 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 would remain for Alternative 4 related to consistency with local land use plans.

4.1.3.5 Design Options—Alternative 1

Land Use Compatibility

Design Option 1: LAUS at the Metropolitan Water District (MWD): Design Option 1 would be an underground station and would not change or impair the function of street ROWs, public facilities, and industrial uses. The proposed station entrance would be at-grade, integrated into LAUS, and compatible with its use as a major transit station. No physical barriers would be introduced, and land use compatibility issues would not occur for this design option. Under NEPA, Design Option 1 would not result in adverse effects related to land use compatibility.

Design Option 2: Add Little Tokyo Station: Design Option 2 would be an additional underground station and would not change or impair the function of street ROWs or surrounding land uses. The proposed station entrance would be at-grade and would not introduce physical barriers or land use compatibility issues. Under NEPA, Design Option 2 would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would be consistent with applicable SCAG 2016-2040 RTP/SCS policies and would provide jurisdictions with opportunities to develop compact communities around a public transit system; be 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, Design Options 1 and 2 would be consistent with regional land use plans, policies, and regulations. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to consistency with regional land use plans.

Consistency with Local Land Use Plans, Policies, and Regulations

Design Option 1: LAUS at MWD: Design Option 1 would be consistent with applicable land use plans, goals, objectives, and policies of regional agencies and local jurisdictions; would provide high-frequency transit service to residents, visitors, and employees of the community; and would promote use of public transit. The station would be designed following MRDC guidance or equivalent criteria and would be convenient, attractive, safe, clearly identifiable, and have user-friendly design amenities. Under NEPA, Design Option 1 would not result in adverse effects related to consistency with local land use plans, policies, and regulations.

Design Option 2: Add Little Tokyo Station: Design Option 2 would provide a direct connection to the Regional Connector Station in the Little Tokyo community, creating a high-frequency transit service for residents, visitors, and employees of the Little Tokyo community and increased use of public transit. Design Option 2 would be consistent with applicable land use plans, goals, objectives, and policies of regional agencies and local jurisdictions. Under NEPA, Design Option 2 would not result in adverse effects related to consistency with local land use plans, policies, and regulations.

4.1.3.6 Maintenance and Storage Facility Site Options

Land Use Compatibility

Paramount MSF Site Option: The Paramount MSF site option would follow MRDC guidance or equivalent criteria and would include barriers around the perimeter of the site to minimize potential adverse effects to surrounding land uses. All functions of the proposed MSF would be located within the facility and would not involve any roadway/intersection closures or turning restrictions that would restrict access to residential neighborhoods or community facilities. Although the MSF site option may potentially close All America City Way along the west side of the site and install security barriers along the perimeter, the MSF site option, including the lead tracks, would not involve roadway/intersection closures or turning restrictions that would restrict access to residential neighborhoods or community facilities. The lead tracks for the MSF site option would be located within the San Pedro Subdivision ROW and would parallel the existing freight rail within the rail ROW. Thus, no residential properties or community facilities would be isolated. Metro would comply with local policies and regulations regarding off-site improvements. The Paramount MSF site option, including the lead tracks, would 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. Under NEPA, the Paramount MSF site option would not result in adverse effects related to land use compatibility.

Bellflower MSF Site Option: The Bellflower MSF site option would be located on a site currently designated as an open space/recreational use and is currently leased from the City of Bellflower to a private party. The site is currently operating as a recreational commercial business (the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX). The MSF site option is bounded by Somerset Boulevard to the north and multi-family residential uses north of Somerset Boulevard, single family residential uses to the east, a dog park at the southeasterly 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 Bellflower MSF site option, including the lead tracks, would be similar to the Paramount MSF site option. The existing walls and fencing along the perimeter of the MSF site option are likely to remain with implementation of the MSF site option. If these barriers are removed, other types of security barriers would be installed along the perimeter of the site following MRDC guidance or equivalent criteria and would not physically divide the surrounding community.

Metro would comply with local policies and regulations regarding off-site improvements. The Bellflower MSF site option, including the lead tracks, would 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 proposed Bellflower MSF site option. This segment of the PEROW may not have sufficient room to accommodate the MSF site option lead tracks, light rail transit (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. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Thus, as all functions of the MSF would be located within the facility and the lead tracks would be located within the PEROW, the Bellflower MSF site option would not conflict with and would not change or impair the function of the surrounding land uses. Similarly, the Bellflower MSF site option would not create any new land use incompatibilities in the surrounding area or physically divide an established community. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to land use compatibility.

Consistency with Regional Land Use Plans, Policies, and Regulations

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options would be an integral part of the Project's infrastructure and would support the maintenance, operations, and storage activities for the proposed LRT system. Therefore, both site options would improve the regional transportation system and support SCAG mobility goals by providing a reliable, alternative mode of transportation to the region. As such, the proposed MSF site options would support SCAG regional growth policies. Under NEPA, the Paramount and Bellflower MSF site options would not result in adverse effects related to consistency with regional land use plans.

Consistency with Local Land Use Plans, Policies, and Regulations

Paramount MSF Site Option: The Paramount MSF site option is part of the Project's infrastructure and would support the proposed LRT system and be consistent with applicable goals and policies of the City of Paramount General Plan (City of Paramount 2007). This MSF site option would support the expansion, availability, and use of public transportation in the cities in which the alignment would traverse. Under NEPA, the Paramount MSF site option would not result in adverse effects related to consistency with local land use plans, policies, and regulations.

Bellflower MSF Site Option: The Bellflower MSF site option is part of the infrastructure for the Project and would support the proposed LRT system and be consistent with applicable goals and policies of the City of Bellflower General Plan (City of Bellflower 1994). The site is currently designated as Open Space and is currently owned and leased by the city to a private party for use as a recreational commercial business (Hollywood Sports Paintball and Airsoft 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 coordinate with the city. Based on this coordination it is anticipated that the city would amend the General Plan so that the MSF facility use would be consistent with an appropriate city land use designation. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to consistency with local land use plans, policies, and regulations.

The Bellflower MSF site option would 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 would be maintained, changes to the Paramount Bike Trail and Bellflower Bike Trail would not physically divide the community, affect the character of the existing bike trails, and would not

result in inconsistencies with the *Bellflower-Paramount Active Transportation Plan*. Therefore, no adverse effect would occur.

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 in its entirety would be implemented for Alternatives 1, 2, and 3 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). Only the Paramount and Bellflower Bike Trail and the City of South Gate bike plan component of the mitigation measure would be applicable for Alternative 4.

LU-1: Consistency with Bike Plans. During the planning process and prior to construction, Metro would prepare amended language for each affected bicycle plan demonstrating that existing, planned, and modified bicycle facilities would be connected during project operation. This language would be subject to the approval of the Cities of Huntington Park, South Gate, Bell, Paramount, and Bellflower, as applicable. Metro would 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 would 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)

4.1.5 California Environmental Quality Act Determination

4.1.5.1 Would the Project physically divide an established community?

No Project Alternative

Under the No Project Alternative, the Build Alternatives would not be constructed and the existing land uses would remain unchanged; no properties would be acquired for the Build Alternatives; no structures along the project 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 parallel 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 could divide an established community if physical barriers are introduced that would affect access between existing communities and neighborhoods in the Affected Area for land use. Generally, existing development has been built around the rail ROW, which physically separates the neighborhoods and communities within the Affected Area for land use. Alternative 1 would introduce safety barriers along the alignment and stations to hinder residents and workers from illegally crossing the rail tracks and these safety barriers are not expected to physically divide an established community because safe access and crossings throughout the community would be maintained at intersections and via crosswalks. Further, proposed street closures (Long Beach Avenue north of 14th Street, 14th Street west of Long Beach Avenue, Newton Street west of Long Beach Boulevard, and both 188th and 187th Streets in Artesia) and turning restrictions at streets that intersect with Randolph Street (Wilmington Avenue, Regent Street, Albany Street, Rugby Avenue, and Rita Avenue) would not result in permanent access disruptions to existing land uses on either side of the project alignment as access to the surrounding uses would continue to be available through routing of traffic to adjacent streets.

The existing pedestrian bridge on Long Beach Avenue at 53rd Street in the City of Los Angeles would remain at its existing location and accessible to pedestrians. The existing Arthur Avenue pedestrian bridge at the I-105 freeway would be rebuilt to maintain the pedestrian connection across I-105, and the pedestrian bridge between Paramount High School and Paramount Park would be replaced with a pedestrian undercrossing or pedestrian tunnel to maintain pedestrian access. Parking facilities would operate entirely on-site and would not physically divide the surrounding community.

Alternative 1 is not expected to introduce physical barriers or generate permanent access disruptions to existing land uses on either side of the proposed alignment, and access to the surrounding community would remain available. Therefore, Alternative 1 would not divide an established community, impacts would be less than significant, and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Impacts resulting from Alternative 2 would be the same as Alternative 1. Alternative 2 would not introduce physical barriers or generate permanent access disruptions to existing land uses on either side of the project alignment, and access to the surrounding community would remain available. Therefore, Alternative 2 would not divide an established community; impacts would be less than significant; and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Impacts resulting from Alternative 3 would be the same as Alternatives 1 and 2, but with impacts beginning at its northern terminus at the Slauson/A Line Station in the City of Los Angeles/Florence-Firestone community of LA County rather than in downtown Los Angeles. Alternative 3 would not introduce physical barriers or generate permanent access disruptions to existing land uses on either side of the project alignment, and access to the surrounding community would remain available. Therefore, Alternative 3 would not divide an established community; impacts would be less than significant; and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Impacts resulting from Alternative 4 would be the same as Alternatives 1, 2, and 3 beginning at its northern terminus at the I-105/C Line Station in the City of South Gate. Alternative 4 would not introduce physical barriers or generate permanent access disruptions to existing land uses on either side of the project alignment, and access to the surrounding community would remain available. Therefore, Alternative 4 would not divide an established community; impacts would be less than significant; and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would be constructed underground, with station entrances located at-grade and integrated with the surrounding community and area. No physical barriers would be introduced. Therefore, Design Option 1 and Design Option 2 would not physically divide an established community; impacts would be less than significant, and mitigation would not be required.

Maintenance and Storage Facility Site Options

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options, including the lead tracks for each option, would be designed following MRDC guidance or equivalent criteria and would include barriers around the perimeter of the site with all functions of the proposed MSF located within the facility. The MSF site options, including the lead tracks, would not involve roadway/intersection closures or turning restrictions that would restrict access to residential neighborhoods or community assets. The lead tracks for the Paramount MSF site option would be within the San Pedro Subdivision ROW, and the lead tracks for the Bellflower MSF site option would be within the PEROW. Therefore, the Paramount MSF site option and Bellflower MSF site option would not physically divide an established community; impacts would be less than significant; and mitigation would not be required.

4.1.5.2 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 and would not conflict with applicable land use plans, policies, or regulations. However, the No Project Alternative 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. Bike paths proposed 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would be generally consistent with the applicable land use plans, goals, objectives, and policies of regional agencies and local jurisdictions. Alternative 1 would 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, Alternative 1 could preempt future development and implementation of planned bike paths identified for the Cities of Cudahy, Huntington Park, South Gate, and Bell, as there would be inadequate space to accommodate the planned bicycle paths, project tracks, and relocated freight tracks. Alternative 1 would 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 would 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 would occur.

Metro continues to coordinate with jurisdictions and local agencies so that Alternative 1 would 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, Metro would 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, would 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, Alternative 1 may still preempt future development and the implementation of the planned bike paths. Therefore, even with implementation of mitigation, Alternative 1 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.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified for Alternative 1. As with Alternative 1, Alternative 2 could preempt the future development and implementation of planned bike paths identified for the Cities of Cudahy, Huntington Park, South Gate, and Bell. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be required. 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. Similar to Alternative 1, Alternative 2 may still preempt future development and implementation of the future bike paths. Therefore, even with implementation of mitigation, Alternative 2 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.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit as Alternatives 1 and 2. As with Alternatives 1 and 2, Alternative 3 could preempt the future development and implementation of planned bike paths identified for the Cities of Cudahy, Huntington Park, South Gate, and Bell. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be required. 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. Similar to Alternatives 1 and 2, Alternative 3 may still preempt future development and implementation of the future bike paths. Therefore, even with implementation of mitigation, Alternative 3 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.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternatives 1, 2 and 3, Alternative 4 would be consistent with the same applicable goals, objectives, and policies related to alternative transportation, public transportation, and future growth in transit identified in the general plans, specific plans, master plans, and bicycle master plans for the Cities of South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia. As with Alternatives 1, 2, and 3, Alternative 4 could preempt the future development and implementation of the planned bike path in the City of South Gate. Alternative 4 would also require the realignment of existing segments of the Paramount Bike Trail and Bellflower Bike Trail as discussed for Alternatives 1, 2, and 3. Implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) would be required. However, because the process to amend the bike plan is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. Similar to Alternatives 1, 2, and 3, Alternative 4 may still preempt future development and implementation of the future bike path. Therefore, even with implementation of mitigation, Alternative 4 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.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: Design Option 1 would be consistent with applicable City of Los Angeles land use plans and policies; would provide high-frequency transit service to residents, visitors, and employees of the community; and would promote use of public transit. The station would be designed following MRDC guidance or equivalent criteria and would be convenient, attractive, safe, clearly identifiable, and have user-friendly design amenities. Therefore, impacts would be less than significant and mitigation would not be required.

Design Option 2: Add Little Tokyo Station: Design Option 2 would provide a direct connection to the Regional Connector Station in the Little Tokyo community, creating a high-frequency transit service for residents, visitors, and employees of the Little Tokyo community and

increased use of public transit. Design Option 2 would be consistent with the applicable local land use policies and regulations. Therefore, impacts would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option: The Paramount MSF site option is part of the infrastructure for the Project and would support the maintenance, operations, and storage activities for the LRT. The Paramount MSF site option would improve the regional transportation system and support SCAG mobility goals by providing a reliable, alternative mode of transportation to the region. The Paramount MSF site option would also support the expansion, availability, and use of public transportation in the cities, consistent with applicable goals and policies of the *City of Paramount General Plan* (City of Paramount 2007). Therefore, impacts would be less than significant and mitigation would not be required.

Bellflower MSF Site Option: The Bellflower MSF site option is part of the infrastructure for the Project, would support the proposed LRT system, and would support SCAG mobility goals and be consistent with applicable goals and policies of the City of Bellflower General Plan (City of Bellflower 1994).

Section 4.1.3.7 discusses the realignment of the segment of the Bellflower Bike Trail located within the PEROW. The Bellflower MSF site option would 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 would be maintained, changes to the Paramount Bike Trail and Bellflower Bike Trail would not physically divide the community, affect the character of the existing bike trails, and would not result in inconsistencies with the *Bellflower-Paramount Active Transportation Plan*. Therefore, with implementation of mitigation, impacts for the Bellflower MSF site option as it relates to the land use of the site would 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 and Build Alternatives, including design options and MSF site options 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 2021n) (Appendix G). Discussion of CEQA thresholds related to physically dividing an established community is provided in Section 4.1, Land Use.

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

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 proposed alignments, parking facilities, and MSF site options, and 0.5 mile around the proposed station areas 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 based on data 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 proposed parking facilities, at-grade crossings, turning restrictions, street closures, vehicle delays, safety barriers, and sound walls would impede access and mobility in the affected communities. The provision of pedestrian facilities, such as sidewalks and underpasses, were also considered when determining the Project's effect on access and mobility. Adverse effects on community stability would occur if the Project 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; or
- Alter the demographics of the affected communities.

This analysis relies on the analysis of several other environmental topics, including Transportation (Chapter 3), Land Use (Section 4.1), Acquisitions and Displacements (Section 4.3), Visual and Aesthetics (Section 4.4), Air Quality (Section 4.5), Noise (Section 4.7), and Parklands and Community Facilities (Section 4.16).

To satisfy CEQA requirements, communities and neighborhoods impacts 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 for each Build Alternative includes the following established communities² in which the alignment would traverse through or be adjacent to; these communities are 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 the land uses for each community:

- **Alternatives 1 and 2:** Los Angeles (including the Central City, Central City North, and Southeast Los Angeles Community Plan Areas), the unincorporated Florence-Firestone of LA County, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos
- **Alternative 3:** Los Angeles (including the Southeast Los Angeles Community Plan Area), unincorporated Florence-Firestone of LA County, Vernon, Huntington Park, Bell, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos
- **Alternative 4:** South Gate, Paramount, Bellflower, Artesia, and Cerritos

² For purposes of this analysis, the Central City, Central City North, and 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 Project Alignment



Source: Prepared for Metro in 2020

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 build-out year in population, housing, and employment for the Build Alternatives 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 of the Build Alternatives (2017-2042)

Build Alternative	Population	Housing	Employment
Los Angeles County	12.0%	12.0%	17.0%
Alternative 1	59.9%	66.4%	32.4%
Alternative 2	74.9%	84.5%	24.7%
Alternative 3	59.2%	62.0%	22.4%
Alternative 4	62.2%	65.9%	19.9%

Source: Metro 2021n

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

	Station Area	Population	Housing	Employment
	Los Angeles County	12.0%	12.0%	17.0%
Alternative 1	LAUS (Forecourt) Station	68.3%	53.1%	16.8%
	Arts/Industrial District Station	232.0%	84.8%	74.1%
Alternative 2	7th St/Metro Center Station	107.7%	91.1%	8.3%
	South Park/Fashion District Station	128.6%	96.0%	27.1%
	Arts/Industrial District Station	226.2%	83.9%	80.1%
Alternatives 1, 2, and 3	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%
Alternatives 1, 2, 3 and 4	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%
Design Options (Alternative 1)	LAUS (MWD)	68.3%	53.1%	16.8%
	Little Tokyo Station	189.8%	114.7%	35.1%

Source: Metro 2021n

Notes: LAUS = Los Angeles Union Station; MWD = Metropolitan Water District

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 Project would have an adverse effect on community stability if it would cause residents to move out of their communities. 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 Central City North (72.6 percent), Central City (67.4 percent), and 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), Vernon (19.5 percent), and Central City (14.7 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.

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 (97.3 percent), Cudahy (96.2 percent), and South Gate (95.5 percent). Cerritos (60.5 percent) and Artesia (39.8 percent) have the largest number of Asian residents. Central City (19.8 percent) and Southeast Los Angeles (17.5 percent) have 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) and Central City North (34.1 percent).

4.2.3 Environmental Consequences/Environmental Impacts

4.2.3.1 No Build Alternative

The transportation projects under the No Build Alternative 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 Build Alternatives would not be developed. Under NEPA, the No Build Alternative would not adversely affect community access, mobility, community character, and cohesion; and adversely affect the stability of the communities within the Affected Area for communities.

4.2.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Access and Mobility

Table 4.2.3 summarizes the project 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 proposed sidewalks, pedestrian underpasses, safety barriers, and sound walls to affect access and mobility are discussed below. Additional details regarding access and mobility are provided in Chapter 3, Transportation.

Parking: Alternative 1 would provide an alternative mode of transportation with improved access and mobility in which pedestrian activities surrounding the proposed stations could increase. Parking facilities are proposed in South Gate, Paramount, Bellflower, and Artesia. Although no parking facilities are proposed in Cerritos, the proposed parking facility at Pioneer Station would be adjacent to this community. These proposed parking facilities would provide better access to the transit line to residents that live farther from the proposed stations. The proposed parking facility at the I-105/C Line Station in South Gate would further improve access to the regional transportation system as residents in the surrounding area would have access to both the proposed transit line and the Metro C (Green) Line. At this station, the Project would construct a new Metro C (Green) Line Station platform within the median of the I-105 freeway. While some of the proposed parking facilities are located adjacent to residential neighborhoods, none of the proposed facilities would 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 would increase.

Street Closures: Alternative 1 would result in permanent street closures at Long Beach Avenue north of 14th Street and at 14th Street west of Long Beach Avenue in the Central City community to accommodate the transition from an underground alignment to an aerial alignment. Access to industrial properties that are not acquired would be maintained through traffic routing within the surrounding local streets (i.e., Olympic Boulevard, 15th Street, Hooper Avenue, Compton Avenue, McGarry Street, and Alameda Street), located within one to three blocks from the proposed street closures. For example, motorists could access properties on the west side of the alignment via 15th Street or Olympic Boulevard and turn onto Hooper Avenue. Motorists could access properties on the east side of the alignment via 15th Street or Olympic Boulevard and turn onto Long Beach Avenue, McGarry Street, or Alameda Street. Although pedestrians and bicyclists could also be affected by the street closures, the street closures are located in an industrial area, and no residential neighborhoods or community assets would be adversely affected. In addition, 188th Street between Corby Avenue and Pioneer Boulevard and 187th Street and Corby Avenue in Artesia would be permanently closed to build a parking structure, accommodate traffic flow, and reduce cut-through traffic. However, vehicle, pedestrian, and bicycle access to the surrounding properties would be maintained through the surrounding streets (i.e., Pioneer Street, South Street, and Corby Avenue), which are one or two blocks (or less than 500 feet) from the proposed street closure. Therefore, street closures would not adversely affect access to and from the surrounding communities.

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

	Community	Proposed Station(s)	Proposed Parking Lot	Parking Lot Adjacent to Residential	Street Closures	At-Grade Grade Crossings	Intersections Adversely Affected by Project ¹	Turning Restrictions	Access and Mobility Disrupted by Project? ²
Alternative 1	Central City North	LAUS (Forecourt); Arts/Industrial District Design Options 1 and 2; LAUS (MWD); Little Tokyo	—	—	0	0	0	0	No
	Central City	Design Option 2: Little Tokyo (Optional); Arts/Industrial District	—	—	2 ³	0	0	0	No
Alternative 2	Central City	7th St/Metro Center; South Park/Fashion District; Arts/Industrial District	—	—	2 ³	0	0	0	No
	Central City North	Arts/Industrial District	—	—	0	0	0	0	No
Alternatives 1, 2, and 3	Southeast Los Angeles	Slauson/A Line	—	—	0	0	0	0	No
	Florence-Firestone	Slauson/A Line	—	—	0	0	0	1 ⁴	No
	Huntington Park	Pacific/Randolph; Florence/Salt Lake	—	—	0	13 ⁵	10	7 ⁴	No
	Bell	No station; alignment only	—	—	0	2 ⁶	2	0	No
	Vernon	No station; alignment only	—	—	0	1 ⁷	0	0	No
	Cudahy	No station; alignment only	—	—	0	4 ⁸	0	0	No

4 Affected Environment and Environmental Consequences

	Community	Proposed Station(s)	Proposed Parking Lot	Parking Lot Adjacent to Residential	Street Closures	At-Grade Grade Crossings	Intersections Adversely Affected by Project ¹	Turning Restrictions	Access and Mobility Disrupted by Project? ²
Alternatives 1, 2, 3, and 4	South Gate	Firestone	600 spaces	No	0	8 ⁹	0	0	No
	South Gate	I-105/C Line	326 spaces	Yes	0	8 ⁹	0	0	No
	Downey	Gardendale	—	—	0	1 ¹⁰	0	0	No
	Paramount	Paramount/Rosecrans	490 spaces	No	0	2 ¹¹	0	0	No
	Bellflower	Bellflower	263 spaces	Yes	0	3 ¹¹	0	0	No
	Cerritos	No station; alignment only	—	—	0	4 ¹²	0	0	No
	Artesia	Pioneer	1,100 spaces	Yes	2	3 ¹³	0	0	No

Source: Metro 2021n

Notes: — = Not Available/Not Applicable; LAUS = Los Angeles Union Station; MWD = Metropolitan Water District

¹ Metro 2021s.

² Access includes vehicular, pedestrian, and bicycle.

³ The two street closures under Alternative 1 are at the same locations as Alternative 2.

⁴ One turning restriction is shared with Florence/Firestone and Huntington Park since it is located at the boundary of these two communities.

⁵ One at-grade grade crossing is shared with Vernon; two are shared with Bell; and two are shared with Cudahy since the grade crossings are located at the Huntington Park/Vernon, Huntington Park/Bell, and Huntington Park/Cudahy city boundaries, respectively.

⁶ The two at-grade grade crossings are shared with Huntington Park as it is located at the Huntington Park/Bell city boundary.

⁷ At-grade grade crossing is shared with Huntington Park since it is located at the Huntington Park/Vernon city boundary.

⁸ Three at-grade grade crossing are shared with Huntington Park and/or South Gate. These grade crossings are located at the Huntington Park/Cudahy, Huntington Park/Cudahy/South Gate, and Cudahy/South Gate city boundaries.

⁹ Three at-grade grade crossings are shared with Huntington Park, Cudahy, and/or Downey. These grade crossings are located at the Huntington Park/Cudahy/South Gate, South Gate/Cudahy, and South Gate/Downey city boundaries. One at-grade grade crossing is located on a private roadway of industrial properties.

¹⁰ At-grade crossing is shared with South Gate since it is located at the South Gate/Downey city boundary.

¹¹ One at-grade grade crossing is located at the Paramount/Bellflower city boundary.

¹² One at-grade grade crossing is located on a private driveway of an industrial property, and one is located at the Artesia/Cerritos city boundary.

¹³ One at-grade grade crossing is shared with Cerritos since it is located at the Artesia/City of Cerritos city boundary.

Vehicle Delays at Intersections and Turning Restrictions: Alternative 1 would result in adverse effects at 12 intersections after mitigation, and turning restrictions would occur at 5 streets that intersect with Randolph Street (i.e., Wilmington Avenue, Regent Street, Albany Street, Rugby Avenue, and Rita Avenue) that would prevent vehicles from turning left and from crossing Randolph Street. Truck turning restrictions would exist at both the Randolph Street/Alameda Avenue East and Randolph Avenue/Pacific Boulevard intersections. Alternative 1 could result in operational changes to the lengths of vehicle queues from nearby intersections back to train crossings and result in vehicle delays. The result could be vehicles stopped on the tracks, unless other measures are taken, such as placing signs to indicate that stopping on the tracks is not permitted.

To minimize the potential for vehicles queuing onto at-grade crossings, project measures TR PM-1 through TR PM-9, described in Chapter 3, Section 3.5.1 of the Transportation Chapter, would be implemented that would include existing at-grade crossing improvements, traffic signal installations, lane modifications, and street closures to enhance the safety and operations of traffic operations with Alternative 1 in place. With these design features, the vehicles in the queue would be prevented from stopping on the tracks, eliminating potential conflicts from queues on Alternative 1. Mitigation Measures TRA-1 through TRA-19, which are specific intersection improvements described in Chapter 3, Section 3.5.1.2 of the Transportation Chapter, would be implemented; however, adverse impacts would remain for several intersections even with the implementation of these mitigation measures. Nonetheless, the vehicle delays would be minimized with the project measures and mitigation measures, and access to community assets or residential neighborhoods would be maintained.

Access to the streets with turning restrictions would still be maintained through traffic routing within the surrounding local streets. Motorists would be required to proceed to the next cross street with a grade crossing (one to two blocks away) and make a U-turn to access the opposite side of Randolph Street and the cross streets with turning restrictions. The proposed turning restrictions along Randolph Street would not adversely affect access and mobility of pedestrians and bicyclists as community assets and residential neighborhoods are generally south of Randolph Street. At Rugby Avenue, residential neighborhoods are situated to the north and south of Randolph Street. Motorists, pedestrians, and bicyclists could still use other grade crossings to access the uses on the opposite side of the street. Similarly, residential uses on the south side of Randolph Street at Rita Avenue could access the commercial development and residential neighborhood north of Randolph Street via existing grade crossings. The existing grade crossing on Frontage Road in South Gate would be closed; however, this grade crossing is located on a private industrial property and does not provide access to any community assets or residential neighborhoods.

At-Grade Grade Crossings: Approximately 9 new at-grade grade crossings are proposed from Somerset Boulevard (Paramount) to the southern terminus in Artesia, and existing grade crossings (active and inactive) throughout the project corridor would be improved. Depending on the location of the existing and new grade crossings, vehicle and pedestrian crossing gates, new or restriped pedestrian crosswalks, new traffic signals, and/or raised medians would be installed to increase safety and improve access and mobility at the grade crossings. Such safety measures are not considered community barriers but may create physical barriers along the alignment to prevent pedestrians from unsafely crossing the railroad tracks mid-block and at grade crossings. Existing pedestrian crossings would remain available at intersections with grade crossings. In addition, new pedestrian crosswalks would be installed on Salt Lake Avenue, on the south side of the Florence/Salt Lake Station, Century Boulevard, Pacific Avenue, and on the west side of the Bellflower Station.

Sidewalks, Pedestrian Underpasses, Safety Barriers, and Sound Walls: Other project components that may affect access and mobility include a new sidewalk, a pedestrian underpass, and safety barriers and sound walls. A sidewalk on the south side of the I-105 freeway between the San Pedro Subdivision ROW and the Arthur Avenue pedestrian bridge would be added to allow residents southeast of the San Pedro Subdivision ROW in the Paramount community easier access to the new Metro C (Green) Line Station at the I-105 freeway median and the I-105/C Line Station. The existing pedestrian bridge over the PEROW between Paramount Park and Paramount High School would be demolished and replaced with an undercrossing, which would connect Paramount Park and Paramount High School.

Alternative 1 would include installation of safety barriers along at-grade portions of the project alignment that parallel street right-of-way or sound walls (see Mitigation Measure NOI-1 [Soundwalls]), both of which would prevent informal crossings of railroad tracks and would avoid potential conflicts between pedestrians and LRT vehicles. Residents within the Affected Area for communities would continue to use the existing grade crossings to access adjacent neighborhoods and nearby community facilities.

Summary: While increased vehicle delays at intersections, turning movement restrictions, street closures, and installation of safety barriers or sound walls would occur under Alternative 1, the physical layout of the affected communities would remain similar to existing conditions and would not impede community access and mobility. Alternative 1 would shift some access and mobility patterns in the Affected Area for communities, resulting in different community access routes when compared to those under existing conditions. Access to the surrounding residential neighborhoods, businesses, and community assets would remain. Under NEPA, Alternative 1 would not result in adverse effects related to community access and mobility.

Community Character and Cohesion

The Project has the potential to affect community character and cohesion as it has the potential to affect access to community facilities; permanently displace residences and community assets; increase noise levels; alter visual character; change the types of land uses that could be built around the proposed stations; and increase population surrounding the proposed stations. Table 4.2.4 identifies and summarizes how project-related changes in noise levels, changes in the access to community facilities, acquisition and displacement, and changes in visual character have the potential to affect community character and cohesion as a result of the Build Alternatives within the Affected Area for communities. The potential for land use and demographic changes to affect community character and cohesion are discussed further below.

Acquisition and Displacement: Alternative 1 would require permanent partial or full property acquisitions to accommodate underground easements for the subterranean portion of the alignment, aerial easements for aerial structures, grade separations, track alignments, TPSS, stations, and parking facilities. As summarized in Table 4.2.4, Alternative 1 would require partial or full acquisition of several commercial and residential properties, as well as the partial acquisition of a school property's corner. The acquisition of commercial and residential properties may result in the displacement of several businesses and residents. However, these acquisitions and displacements would not affect the overall function of community assets or adjacent and surrounding uses, and no community assets would be displaced. Residential neighborhoods and community assets would not be isolated, and residential neighborhoods and community assets would be maintained.

Table 4.2.4. Build Alternatives Effects on Community Character and Cohesion

Alternative	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
1	Central City North	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground. 	<ul style="list-style-type: none"> Alternative 1: None Design Option 1: LAUS (MWD) Station entrance would displace an existing refreshment/snack store in the concourse area of LAUS. 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground.
	Central City	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground.
2	Central City	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground. 	<ul style="list-style-type: none"> 7th St/Metro Center Station entrance would be located within building on a commercial property at southwest corner of 8th St/Flower St. South Park/Fashion District Station entrances would be located within buildings on commercial properties at southwest corner of 8th St/Main St and northeast corner of 8th St/Los Angeles St. 	<ul style="list-style-type: none"> No adverse effect; project alignment would be underground.
1 and 2	Southeast Los Angeles	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> 22nd St to 24th St 27th St to 40th Pl 41st Pl to 46th St 47th St to 55th St <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> 22nd St to 24th St 42nd St to Vernon Ave Southwest of Vernon Ave north of 46th St 	<ul style="list-style-type: none"> No adverse effect; project alignment would be elevated. 	<ul style="list-style-type: none"> Partial acquisition of vacant commercial property at northwest corner of Long Beach Ave/52nd St for TPSS. 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.

Alternative	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
1, 2, and 3	Southeast Los Angeles	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> 55th St to 57th St <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project alignment would be elevated. 	<ul style="list-style-type: none"> Full acquisitions of 2 single-family and 4 multifamily units to accommodate straddle bent for aerial structure. Displacement of 17 residents. Partial acquisitions of 2 multifamily residential properties to accommodate straddle bent for aerial structure. Displacement of 6 residents. 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Florence-Firestone	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> West of Holmes Ave and south of San Pedro Subdivision ROW East and west of Holmes Ave <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> West of Holmes Ave and south of San Pedro Subdivision ROW East and west of Holmes Ave 	<ul style="list-style-type: none"> No adverse effect; project alignment would be elevated. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Huntington Park	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Cottage St to Bissell St Gage Ave Live Oak St to Santa Ana St <p>Residual Impacts with Mitigation</p>	<ul style="list-style-type: none"> New safety barrier or sound walls 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 	<ul style="list-style-type: none"> At commercial property at northeast corner of Pacific Blvd/Randolph St, approximately 24 parking spaces and some landscaping would be affected due to installation of TPSS. At commercial development adjacent to Florence/Salt Lake Station, approximately 11 parking spaces and landscaping would be removed to install TPSS, but commercial uses would remain. 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.

Alternative	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
		<ul style="list-style-type: none"> Cottage St to State St Gage Ave Hill St to Santa Ana St 	<p>Huntington Park High School.</p> <ul style="list-style-type: none"> Grade crossing improvements at Randolph St and Salt Lake Ave (street markings, pedestrian and vehicular crossing gates, and curb cuts) would provide safe access to schools and facilitate access to Salt Lake Park. 	<ul style="list-style-type: none"> Partial acquisition of 2 multifamily residential properties on State St, south of Randolph St, for grade-crossing improvements; a portion of the front yard at two residential properties. Displacement of 8 residents. At commercial property at southwest corner of State St/Randolph St, approximately 3 parking spaces and landscaping would be affected due to grade crossing improvements. At San Antonio Elementary School, a strip of landscaping and approximately 15 parking spaces on the property would be affected by grade crossing improvements. 	
	Bell	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Gage Ave to Florence Ave <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Gage Ave to Florence Ave 	<ul style="list-style-type: none"> Residents could no longer informally cross San Pedro Subdivision ROW at mid-block to access Salt Lake Park due to safety barrier or sound walls along rail ROW. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Vernon	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Cudahy	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Live Oak St to Cecilia St <p>Residual Impacts with Mitigation</p>	<ul style="list-style-type: none"> Residents southeast of Salt Lake Park could no longer informally cross San Pedro Subdivision ROW at mid-block to access Salt Lake Park. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.

Alternative	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
		<ul style="list-style-type: none"> ▪ Santa Ana St to Cecilia St 	<ul style="list-style-type: none"> ▪ Existing grade crossing at Salt Lake Ave/Florence Ave improved to facilitate access of Salt Lake Park. 		
	South Gate	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> ▪ Firestone Blvd ▪ McCallum Ave to Wood Ave ▪ Mobile home community between Los Angeles River and I-710 freeway ▪ Roosevelt Ave to Main St <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> ▪ Firestone Blvd ▪ McCallum Ave to Wood Ave ▪ Mobile home community between Los Angeles River and I-710 freeway 	<ul style="list-style-type: none"> ▪ No adverse effects 	<ul style="list-style-type: none"> ▪ None 	<ul style="list-style-type: none"> ▪ No adverse effect; project components consistent with visual character of community.
	Downey	<ul style="list-style-type: none"> ▪ None 	<ul style="list-style-type: none"> ▪ No adverse effects 	<ul style="list-style-type: none"> ▪ None 	<ul style="list-style-type: none"> ▪ No adverse effect; project components consistent with visual character of community.

Alternative	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
1, 2, 3, and 4	South Gate	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Main St to Century Blvd <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Main St to Century Blvd Nevada Ave 	<ul style="list-style-type: none"> No adverse effects 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Paramount	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Century Blvd to Lakewood Blvd <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Century Blvd to Laredo Ave Rosecrans Ave to east of Orizaba Ave Jetmore Ave to Downey Ave North of Somerset Blvd to Lakewood Blvd 	<ul style="list-style-type: none"> Realignment of Paramount Bike Trail would not disrupt operation and access of the bike trail. Realignment of the Paramount Bike Trail is not expected to divide or affect the character of the bike trail. 	<ul style="list-style-type: none"> Commercial property at northwest corner of Rosecrans Ave/Paramount Blvd to be acquired for the relocation of freight track. Partial acquisition of 4 multifamily units to accommodate project alignment, grade crossing, retaining walls, and aerial structures. Displacement of 16 residents. 	<ul style="list-style-type: none"> 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.
	Bellflower	<p>Unmitigated Impact</p> <ul style="list-style-type: none"> Lakewood Blvd to San Gabriel River <p>Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Mobile home community east of Lakewood Blvd Hegel St to Los Angeles St 	<ul style="list-style-type: none"> East of Bellflower Blvd, relocation of the Bellflower Bike Trail would allow users to access the bike trail without having to cross the proposed LRT tracks. Operation of and access to the Bellflower Bike Trail would remain. Residents in the southerly portion of the city would no 	<ul style="list-style-type: none"> At multifamily residential on east side of Bellflower Blvd, north of project alignment, partial acquisition of 10 multifamily residential units for grade-crossing improvements. Displacement of 16 residents. Auto business on west side of Bellflower Blvd, north of project alignment to be acquired for Bellflower Station parking facility. 	<ul style="list-style-type: none"> “Belle” public art cow statue in PEROW would be removed but would not detract from or conflict with visual character of the PEROW.

4 Affected Environment and Environmental Consequences

Alternative	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
		<ul style="list-style-type: none"> Orchard Ave to San Gabriel River 	<p>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.</p>		
	Cerritos	<p>Unmitigated Impact and Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Studebaker Rd Eric Ave to Gridley Rd/183rd St 	<ul style="list-style-type: none"> No adverse effects; no direct access to community facilities are available within the PEROW. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.
	Artesia	<p>Unmitigated Impact and Residual Impacts with Mitigation</p> <ul style="list-style-type: none"> Gridley Rd/183rd St to Pioneer Blvd 	<ul style="list-style-type: none"> No adverse effects; no direct access to community facilities area available within the PEROW. 	<ul style="list-style-type: none"> Property acquisition to accommodate proposed parking facility at Pioneer Station include commercial and residential properties along Corby Ave, 188th St, and Pioneer St south of project alignment. Full acquisition of 2 single-family residential units. Displacement of 8 residents. 	<ul style="list-style-type: none"> No adverse effect; project components consistent with visual character of community.

Source: Metro 2021n

Notes: ¹ Metro 2021j

² Unmitigated impact are impacts that would occur without mitigation. Residual impacts are impacts that would still occur with the implementation of mitigation.

³ Metro 2021m

LAUS = Los Angeles Union Station; LRT = light rail transit; MWD = Metropolitan Water District; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TPSS = traction power substation

Access to Community Facilities: Alternative 1 would relocate the Paramount Bike Trail and Bellflower Bike Trail, as described in Table 4.2.4, to allow for the use of the pedestrian and bicycle paths without having to cross the proposed tracks. The Paramount Bike Trail and Bellflower Bike Trail in Paramount and Bellflower would not be permanently removed.

With the installation of security barriers and/or sound walls along the PEROW (see Mitigation Measure NOI-1 [Soundwalls]), some residents in the southerly portion of Bellflower would 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 would 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. Thus, property displacement and acquisition, the realignment of the Bellflower Bike Trail, and the discontinued use of the PEROW as an informal equestrian trail would not change the character and cohesion of the communities in the Affected Area and Alternative 1 would not result in adverse effects.

Noise: As presented in Table 4.2.4, Alternative 1 would result in adverse noise effects in several residential neighborhoods. However, Mitigation Measures NOI-1 through NOI-7, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, gate-down-bell-stop variance, TPSS noise reduction, and freight track relocation soundwalls (see Section 4.7.4.2 of the Noise and Vibration Section), would be implemented to reduce noise levels to the extent feasible in which residual adverse noise effects could still occur in some communities. However, based on the community stability of the affected communities and reductions to the noise levels, such residual impacts are not anticipated to create a shift in the community that would result in an adverse effect to the cohesion of the communities. The anticipated changes in noise levels for Alternative 1 are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Visual Character: Alternative 1 would 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. Proposed station entrances would be integrated with the existing land uses and would be consistent and compatible with the existing transportation corridor. Alternative 1 would 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 would not be visually compatible with the surrounding residential area. Alternative 1 would 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, would be implemented so that views of the storage tracks north of Somerset Boulevard remain obstructed and that “Belle” would be relocated, respectively. In addition, segments of the alignment located to the rear of residences, community facilities, and industrial buildings would not be affected by the changes to the visual character within the rail ROW. As such, Alternative 1 would 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: Alternative 1 could indirectly affect growth and development in the Affected Area for communities by providing opportunities for TODs around proposed stations. However, these changes would be consistent with the goals, policies, and objectives of the affected local jurisdictions; and new development around the proposed stations would be solely at the discretion and approval of the affected communities. Such development would not be part of the Project and would 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 would be addressed and mitigated by restrictions imposed by local jurisdictions. As the potential land use changes would be consistent with the goals, policies, and objectives of the affected local jurisdictions and new development around the proposed stations would 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 proposed stations is projected to grow and would 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 several different ethnic and racial groups and locally identified cultural communities (i.e., El Pueblo de Los Angeles historic district and Little Tokyo in Los Angeles, and International Cultural District of Artesia, also known as "Little India"). Alternative 1 would increase connectivity to these districts.

Summary: Overall, Alternative 1 would not include components that may directly or indirectly affect community character and cohesion. Property acquisition and displacement of businesses and residents would not affect the overall function of community assets or adjacent and surrounding uses, and no community assets would be displaced. Access to community facilities would be maintained. Additionally, changes in noise levels, visual character (with implementation of Mitigation Measures VA-1 and VA-2), land use, and demographics would not adversely affect community character and cohesion. The cohesion of ethnic and racial groups within the Affected Area for communities and would not substantially change existing growth and development patterns. Development in the proposed station areas is anticipated to be consistent with the affected jurisdictions' General Plan land use designations. Under NEPA, Alternative 1 would not result in adverse effects related to community character and cohesion.

Community Stability

Approximately 87 percent of the residents living in the Alternative 1 affected communities have resided in the same residence for one year or more, which can indicate a strong cohesive community. Residential property acquisition and residential displacements would not alter the stability of the communities in the Affected Area for communities. Alternative 1 would increase the connection among the communities in the Affected Area for communities by providing additional transit services, which would benefit the existing residents of the communities, and could help support the stability of the communities in the Affected Area. Under NEPA, Alternative 1 would not result in adverse effects related to community stability.

4.2.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 would have the same alignment as Alternative 1 south of Bay Street; therefore, the effects and impact conclusions described for Alternative 1 south of Bay Street in Section 4.2.3.2 would also apply to Alternative 2. As such, the sections that follow summarize the effects assessment for the segment of Alternative 2 north of Bay Street.

Access and Mobility

As shown in Table 4.2.3, Alternative 2 would introduce two stations in the Center City community (i.e., 7th Street/Metro Center Station and South Park/Fashion District Station) and one station along the Center City North/Center City boundaries (i.e., Arts/Industrial District). The station entrances for these three stations would be located on surface parking lots or industrial, commercial, and/or public facility properties. The stations would not impede access and mobility of motorists, pedestrians, and bicyclists to residential neighborhoods and community assets. Instead, Alternative 2 would improve access and mobility by providing the affected communities with an alternative mode of transportation to automobiles. Pedestrian activities in the neighborhoods surrounding the proposed stations and regional and local access to and from the communities in the Affected Area for communities would increase. Additionally, Alternative 2 would not require street closures or turning restrictions north and west of Bay Street. South of Bay Street, the effects on access and mobility from parking, vehicle delays, turning restrictions, at-grade crossings, the proposed sidewalk on the south side of I-105, the pedestrian underpass in Paramount, safety barriers, and sound walls would be the same as Alternative 1. Under NEPA, Alternative 2 would not result in adverse effects related to community access and mobility.

Community Character and Cohesion

Acquisition and Displacement: Alternative 2 would require partial or full acquisition of surface parking lots, as well as commercial and industrial structures, for permanent underground easements for the underground portion of the project alignment and for station entrances north of Bay Street in Los Angeles. No residential properties or community assets would be displaced. Residential neighborhoods and community assets would not be isolated, and residential neighborhoods and community assets would be maintained.

Access to Community Facilities: Alternative 2 would have the same effect on the community facilities as Alternative 1, including access to the Paramount and Bellflower Bike Trails and the informal use of PEROW as an equestrian trail. The proposed changes would not alter the character and cohesion of the communities, and Alternative 2 would not result in adverse effects.

Noise: As presented in Table 4.2.4, Alternative 2 would result in the same adverse noise effects as Alternative 1. Similarly, noise mitigation measures (NOI-1 through NOI-7, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, gate-down-bell-stop variance, TPSS noise reduction, and freight track relocation soundwalls) would be implemented to reduce noise levels to the extent feasible in which residual adverse noise effects could still occur in some communities. The anticipated changes in noise levels are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Visual Character: Alternative 2 would include the removal of the landscaping and decorative wall on the north side of Somerset Boulevard and the “Belle” public art statue, would implement Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2

(Relocation of “Belle”), and no adverse effects on visual character would occur. Overall, changes to the visual character are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Land Use: Changes in land use would be similar to Alternative 1. TOD opportunities would be consistent with the goals, policies, and objectives of the affected local jurisdictions, and new development around the proposed stations would be solely at the discretion and approval of the affected communities. Any potential adverse indirect land use effects would be addressed and mitigated by restrictions imposed by local jurisdictions. The area surrounding the project alignment and station areas would remain accessible, and the overall functionality of the uses adjacent to and surrounding the project alignment and station entrances would not be adversely affected. Alternative 2 would be primarily underground north and west of Bay Street and would not alter the community layout north and west of Bay Street. As with Alternative 1, the physical layout of the affected communities would remain similar to existing conditions. As the potential land use changes would be consistent with the goals, policies, and objectives of the affected local jurisdictions and new development around the proposed stations would 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: Changes to demographics from Alternative 2 would be similar to Alternative 1 and would be consistent with growth projections adopted by SCAG. Alternative 2 would not include components that may directly or indirectly affect the cohesion of ethnic and racial groups within the Affected Area for communities and would not substantially change existing growth and development patterns. Development in the proposed station areas is anticipated to be consistent with the affected jurisdictions’ General Plan and land use designations. Alternative 2 would not change demographics in a manner that would adversely affect community character and cohesion.

Summary: Under NEPA, Alternative 2 would not result in adverse effects related to community character and cohesion.

Community Stability

Approximately 86 percent of the residents living in the Alternative 2 affected communities have resided in the same residence after one year, which can indicate a strong cohesive community. Similar to Alternative 1, residential property acquisition and residential displacements would not alter the stability of the communities in the Affected Area for communities. Alternative 2 would increase connection among the communities and could help support the stability of the communities in the Affected Area for communities. Under NEPA, Alternative 2 would not result in adverse effects related to community stability.

4.2.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have a shorter alignment than Alternatives 1 and 2 and would have the same alignment, components, effects, and impact conclusions as Alternatives 1 and 2 south of 55th Street/Long Beach Avenue.

Access and Mobility

As presented in Table 4.2.3, and similar to Alternatives 1 and 2, vehicle, pedestrian, and bicycle access to the area surrounding Alternative 3 (the communities of Southeast Los Angeles,

Florence-Firestone, Huntington Park, Bell, Vernon, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia) would be maintained through the surrounding streets that are one to three blocks away from the proposed street closures and turning restrictions. Alternative 3 would have the same alignment and components (including parking facilities, a sidewalk on the south side of I-105, and a pedestrian underpass in Paramount), vehicle delays, street closures, turning restrictions, at-grade-crossing modifications, new at-grade crossings, safety barriers, and sound walls as Alternatives 1 and 2 south of 55th Street/Long Beach Avenue. Alternative 3 would adversely affect the same 12 intersections as Alternatives 1 and 2 but would not involve any street closures or turning restrictions north and west of Bay Street as Alternative 3 would be located south of this area. Under NEPA, Alternative 3 would not result in adverse effects related to community access and mobility.

Community Character and Cohesion

Acquisition and Displacement: Alternative 3 would acquire and displace the same properties as Alternatives 1 and 2 south of 55th Street/Long Beach Avenue. No community assets would be displaced; property acquisition and displacement would not affect the overall function of community assets or adjacent and surrounding uses; and changes to residential properties would not cause residential neighborhoods and community assets to become isolated. As with Alternatives 1 and 2, acquisition and displacement would not adversely affect community character and cohesion.

Access to Community Facilities: Alternative 3 would have the same effect on the community facilities as Alternatives 1 and 2 south of 55th Street/Long Beach Avenue, including access to the Paramount and Bellflower Bike Trails and the informal use of PEROW as an equestrian trail. The proposed changes would not alter the character and cohesion of the communities, and Alternative 3 would not result in adverse effects.

Noise: As presented in Table 4.2.4, Alternative 3 would result in the same adverse noise and visual effects as Alternatives 1 and 2 south of 55th Street/Long Beach Avenue. Similarly, noise mitigation measures (NOI-1 through NOI-7, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, gate-down-bell-stop variance, TPSS noise reduction, and freight track relocation soundwalls) would be implemented to reduce noise levels to the extent feasible in which residual adverse noise effects could still occur in some communities. The anticipated changes in noise levels are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Visual Character: Alternative 3 would include the removal of the landscaping and decorative wall on the north side of Somerset Boulevard and the “Belle” public art statue, would implement Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”), and no adverse effects on visual character would occur. Overall, changes to visual character are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Land Use: Changes in land use would be similar to Alternatives 1 and 2. TOD opportunities would be consistent with the goals, policies, and objectives of the affected local jurisdictions, and new development around the proposed stations would be solely at the discretion and approval of the affected communities. Any potential adverse indirect land use effects would be addressed and mitigated by restrictions imposed by local jurisdictions. Similar to Alternatives 1 and 2, the physical layout of the affected communities would remain similar to

existing conditions. Potential land use changes under Alternative 3 would not result in adverse effects related to community character and cohesion.

Demographics: Changes to demographics from Alternative 3 would be similar to Alternatives 1 and 2 and would be consistent with growth projections adopted by SCAG. Alternative 3 would not include components that may directly or indirectly affect the cohesion of ethnic and racial groups within the Affected Area for communities and would not substantially change existing growth and development patterns. Development in the proposed station areas is anticipated to be consistent with the affected jurisdictions' General Plan and land use designations. Alternative 3 would not change demographics in a manner that would adversely affect community character and cohesion.

Community Stability

Approximately 89 percent of the residents living in the Alternative 3 affected communities have resided in the same residence after one year, which can indicate a strong cohesive community. Similar to Alternatives 1 and 2, residential property acquisition and residential displacements would not alter the stability of the communities in the Affected Area for communities. Alternative 3 would increase connection among the communities and could help support the stability of the communities in the Affected Area for communities. Under NEPA, Alternative 3 would not result in adverse effects related to community stability.

Summary: Under NEPA, Alternative 3 would not result in adverse effects related to community character and cohesion.

4.2.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3 and would result in the same effects as those alternatives south of Main Street/San Pedro Subdivision ROW (Table 4.2.3, Table 4.2.4, and Section 4.2.3.2).

Access and Mobility

Alternative 4 would traverse through South Gate, Paramount, Bellflower, Cerritos, and Artesia. As presented in Table 4.2.3, Alternative 4 would not adversely affect any intersections and would not result in any turning restrictions but would result in two street closures (at 188th Street between Corby Avenue and Pioneer Boulevard and 187th Street between Corby Avenue (East) and Corby Avenue (West)). Vehicle, pedestrian, and bicycle access to the surrounding area would be maintained through the surrounding streets that are within one to three blocks from the proposed street closures. Under NEPA, Alternative 4 would not result in adverse effects related to community access and mobility. The effects on access and mobility from parking, at-grade crossings, a sidewalk on the south side of I-15, a pedestrian underpass in Paramount, safety barriers, and sound walls would be the same as Alternatives 1, 2, and 3.

Community Character and Cohesion

Acquisition and Displacement: Alternative 4 would acquire and displace the same properties as Alternatives 1, 2, and 3 south of Main Street/San Pedro Subdivision ROW (Table 4.2.4). No community assets would be displaced; property acquisition and displacement would not affect the overall function of community assets or adjacent and surrounding uses; and changes to residential properties would not cause residential neighborhoods and community assets to become isolated. As with Alternatives 1, 2 and 3, acquisition and displacement would not adversely affect community character and cohesion.

Access to Community Facilities: Alternative 4 would have the same effect on community facilities as Alternatives 1, 2, and 3 south of Main Street/San Pedro Subdivision ROW, including access to the Paramount and Bellflower Bike Trails and the informal use of PEROW as an equestrian trail. The proposed changes would not alter the character and cohesion of the communities, and Alternative 4 would not result in adverse effects.

Noise: Alternative 4 would result in the same adverse noise effects as Alternatives 1, 2, and 3 south of Main Street/San Pedro Subdivision ROW. Similarly, noise mitigation measures (NOI-1 through NOI-7, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, gate-down-bell-stop variance, TPSS noise reduction, and freight track relocation soundwalls) would be implemented to reduce noise levels to the extent feasible in which residual adverse noise effects could still occur in some communities. The anticipated changes in noise levels are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Visual Character: Alternative 4 would include the removal of the landscaping and decorative wall on the north side of Somerset Boulevard and the “Belle” public art statue, would implement Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”), and no adverse effects on visual character would occur. Overall, changes to the visual character are not expected to adversely affect the character and cohesion of the communities within the Affected Area for communities.

Land Use: Changes in land use would be similar to Alternatives 1, 2, and 3. TOD opportunities would be consistent with the goals, policies, and objectives of the affected local jurisdictions, and new development around the proposed stations would be solely at the discretion and approval of the affected communities. Any potential adverse indirect land use effects would be addressed and mitigated by restrictions imposed by local jurisdictions. Similar to Alternatives 1, 2, and 3, the physical layout of the affected communities would remain similar to existing conditions. Potential land use changes under Alternative 4 would not result in adverse effects related to community character and cohesion.

Demographics: Changes to demographics from Alternative 4 would be similar to Alternatives 1, 2, and 3 and would be consistent with growth projections adopted by SCAG. Alternative 4 would not include components that may directly or indirectly affect the cohesion of ethnic and racial groups within the Affected Area for communities and would not substantially change existing growth and development patterns. Development in the proposed station areas is anticipated to be consistent with the affected jurisdictions’ General Plan and land use designations. Alternative 4 would not change demographics in a manner that would adversely affect community character and cohesion.

Summary: Under NEPA, Alternative 4 would not result in adverse effects related to community character and cohesion.

Community Stability

Approximately 88 percent of the residents living in the Alternative 4 affected communities have resided in the same residence after one year, which can indicate a strong cohesive community. Similar to Alternatives 1, 2, and 3, residential property acquisition and residential displacements would not alter the stability of the communities in the Affected Area for communities. Alternative 4 would increase connection among the communities and

could help support the stability of the communities in the Affected Area for communities. Under NEPA, Alternative 4 would not result in adverse effects related to community stability.

4.2.3.6 Design Options—Alternative 1

Access and Mobility

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Option 1 would be located underground with a station entrance at-grade with the surrounding uses at the concourse area inside the LAUS building. Design Option 2 would be primarily underground with two station entrances at-grade with the surrounding uses. One station entrance would be on the easterly side yard of a commercial property and another station entrance would be on a surface parking lot of a LADWP Materials Testing Laboratory. No parking facilities, at-grade crossings, street closures, turning restrictions, or physical barriers are proposed for Design Options 1 and 2 that would impede access or mobility to the surrounding community. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to community access and mobility.

Community Character and Cohesion

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Option 1 would displace a commercial business at LAUS, but neither Design Option 1 nor Design Option 2 would displace or isolate any residential properties or community assets. The physical layout of Central City North and Central City would remain similar to existing conditions. Access to community facilities and residential properties would remain. Design Options 1 and 2 are not expected to change the visual character, noise, and land use of Central City North and Central City as the design options would primarily be underground and would be located at or near a site that is used as a transit stop for various regional and local rail and bus lines. The station entrances would be consistent with the scale, massing, and character of the surrounding area and would fit with the visual character of the Affected Area for communities. Residential uses near the station entrances would not experience adverse noise effects. Potential TOD developments in the station areas would be solely at the discretion and approval of the affected communities, would undergo separate environmental review, and would be responsible for confirming that these plans are consistent with General Plan goals, policies, and objectives.

Design Options 1 and 2 do not include components that may directly or indirectly affect the cohesion of ethnic and racial groups within the Affected Area for communities and are not expected to substantially change existing growth and development patterns. Any development that could result in the area surrounding this design option is anticipated to be consistent with the affected jurisdiction (i.e., City of Los Angeles) General Plan goals, policies, objectives, and land use designations. Changes in population, households, and employment as a result of these new developments are anticipated to be consistent with the SCAG-adopted growth projections as these growth projections are based on the General Plan land use designations of local jurisdictions. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to community character and cohesion.

Community Stability

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would increase connection among the communities in the Affected Area for communities by providing additional transit services and are not expected to cause residents to move out of their communities. Design Options 1 and 2 would not directly generate residents. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to community stability.

4.2.3.7 Maintenance Storage Facility Site Options

Access and Mobility

Paramount MSF Site Option: The Paramount MSF site option would be located in an area with primarily industrial and commercial uses, including the Paramount Swap Meet, Paramount Drive-in Theatre and its associated parking, and industrial uses. The Paramount MSF site option does not contain residences. Our Lady of the Rosary Church and School adjoins the MSF site to the east, with Paramount Park, Paramount Park Middle School, and Paramount High School located farther east along Paramount Boulevard. Security barriers would be installed along the perimeter of the site, which would not create a physical barrier to an established community because the barrier would be around the perimeter of the site only and would not obstruct or close public street rights-of-way. However, the security barriers along the perimeter of the Paramount MSF site option would close a portion of All America City Way that is located within the MSF site option. This private road currently allows motorists along public street ROWs (i.e., Paramount Boulevard and Somerset Boulevard) to access the parking facilities for the existing uses. If this MSF site option is selected, these uses would no longer be located on the site and All America City Way would no longer be needed to connect the public street ROWs to the parking facilities associated with these uses. Bianchi Way, north of the MSF site option, would continue to connect Rosecrans Avenue to a portion of All America City Way.

The grade crossing at the intersection of Rosecrans Avenue and the San Pedro Subdivision ROW would be modified to accommodate two LRT tracks that would provide access for light rail vehicles to and from the Paramount MSF site. These lead tracks would not require roadway or intersection closures or turning restrictions that would restrict access to residential neighborhoods or community assets and are not expected to adversely affect any of the nearby street intersections. Thus, no residential properties or community assets would be isolated. Under NEPA, the Paramount MSF site option would not result in adverse effects related to community access and mobility.

Bellflower MSF Site Option: The Bellflower MSF site option is located south of Somerset Boulevard in Bellflower, and the site is currently leased by Bellflower to the owners of a privately owned recreational business. The Bellflower MSF site option is surrounded by single- and multifamily residences, mobile home communities, and industrial and commercial businesses. Security barriers would be installed along the perimeter of the Bellflower MSF site option. The MSF site option would not involve any roadway/intersection closures or turning restrictions that would restrict access to nearby residential neighborhoods or community assets. Pedestrian and vehicular access to nearby residential neighborhoods and mobile home communities would be maintained. Additionally, operation of the MSF is not expected to adversely affect any of the nearby street intersections. The lead tracks proposed within the PEROW on the south side of the MSF site option would not impede access to the Bellflower

Bike Trail because the bike trail would be located south of the proposed lead and LRT tracks. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to community access and mobility.

Community Character and Cohesion

Paramount MSF Site Option: No residences or community assets are located on the Paramount MSF site option site, and this option would not permanently displace community assets. No residential or community assets would be affected to accommodate the MSF lead tracks. The acquisition of five commercial properties, which are not identified as community assets, would not result in the isolation of this residential neighborhood. The physical layout of the residential neighborhood and Paramount community would remain similar to existing conditions.

The Paramount MSF site option would not adversely affect the visual character of the surrounding area and would not result in adverse noise effects at the surrounding uses. The Paramount MSF site option would be consistent with the industrial and commercial uses on the site and in the surrounding area. The Paramount MSF site option would not directly induce population or housing growth as it would be a maintenance and industrial-focused use. It would not directly or indirectly affect the ethnic and racial groups within Paramount. Any increase in employment associated with the proposed MSF site option would be consistent with the SCAG growth projections for Paramount and is not expected to induce substantial unplanned population growth since it is anticipated that employment would be primarily filled by residents of the LA County region. Under NEPA, the anticipated changes associated with the Paramount MSF site option would not result in adverse effects related to community character and cohesion of the Paramount community.

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

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

The Bellflower MSF site option would 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 would be a maintenance and industrial-focused use and would be consistent with the industrial uses adjacent to the west. Any increase in employment associated with the proposed MSF site option would be consistent with the SCAG growth projections for Bellflower. The potential increase in employment is not expected to induce substantial unplanned population growth since it is anticipated that employment would be primarily filled by residents of the LA County region. Under NEPA, the anticipated changes associated with the Bellflower MSF site option would not result in adverse effects related to community character and cohesion of the Bellflower community.

Community Stability

Paramount MSF Site Option: Approximately 88 percent of Paramount residents have resided in the same house after one year. The Paramount MSF site option would not require acquisitions for residential properties and would not alter the stability of Paramount. Under NEPA, the Paramount MSF site option would not result in adverse effects related to community stability.

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

4.2.4 Project Measures and Mitigation Measures

4.2.4.1 Project Measures

There are no project measures required by law or permit related to communities and neighborhoods.

4.2.4.2 Mitigation Measures

The following mitigation measures would apply to Alternatives 1, 2, 3, and 4. Refer to Mitigation Measures TRA-1 through TRA-19, which are specific intersection improvements described in Chapter 3, Section 3.5.1.2 of the Transportation Chapter, for the descriptions of intersection lane reconfigurations that would address intersection impacts identified in the Build Alternatives. These mitigation measures may not fully mitigate impacts at all intersections. 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 would address visual impacts by preserving screening elements and relocating public art. Mitigation Measures NOI-1 through NOI-7, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, gate-down-bell-stop variance, TPSS noise reduction, and freight track relocation soundwalls (see Section 4.7.4.2 of the Noise and Vibration Section), would reduce noise levels from the LRT, ancillary facilities, and freight, where noise impacts could occur in communities.

4.2.5 California Environmental Quality Act Determination

4.2.5.1 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 Build Alternatives 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. Additionally, the future planning for TODs around the project station areas 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would not directly result in population growth within surrounding communities. Alternative 1 could indirectly affect growth and development in the Affected Area for communities by providing opportunities for TODs around the proposed stations. However, this development would be subject to approval by the city and to all applicable requirements and regulations of the affected city; is anticipated to be consistent with the SCAG growth projections; and is not expected to induce growth beyond that already anticipated in the adopted growth projections for the region and in local community plans. Alternative 1 would 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 Alternative 1 is not expected to induce substantial population growth in the Affected Area for communities beyond adopted growth projections; impacts would be less than significant; and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, Alternative 2 could indirectly affect growth and development in the Affected Area for communities through TOD opportunities, although development would be subject to approval of applicable jurisdictions and is anticipated to be consistent with the SCAG growth projections. Alternative 2 is not expected to induce growth in the Affected Area for communities beyond that already anticipated in the adopted growth projections for the region and in local community plans; impacts would be less than significant; and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to Alternatives 1 and 2, Alternative 3 could indirectly affect growth and development in the Affected Area for communities through TOD opportunities. However, Alternative 3 is not expected to induce growth beyond that already anticipated in the adopted growth projections for the region and in local community plans; impacts would be less than significant; and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternatives 1, 2, and 3, Alternative 4 could indirectly affect growth and development in the Affected Area for communities through TOD opportunities. However, Alternative 4 is not expected to induce growth beyond that already anticipated in the adopted growth projections for the region and in local community plans; impacts would be less than significant; and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would be primarily underground with at-grade station entrances. The station entrances are intended to increase the overall accessibility and mobility of persons within the Affected Area for communities and would not directly result in population growth within surrounding communities.

New development would be subject to approval by the city and subject to all applicable requirements and regulations of the affected city and is anticipated to be consistent with the SCAG growth projections. Therefore, Design Options 1 and 2 are not expected to induce

substantial population growth in the Affected Area for communities; impacts would be less than significant; and mitigation would not be required.

Maintenance and Storage Facility Site Options

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options would not directly induce population or housing growth. The potential increase in employment is not expected to induce substantial unplanned population growth and would be consistent with the SCAG growth projections for Paramount and Bellflower. Therefore, impacts would be less than significant and mitigation would not be required.

4.3 Acquisitions and Displacements

This section summarizes the acquisitions and displacements required for the No Build and Build Alternatives, including design options and MSF site options. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Displacements and Acquisitions Impact Analysis Report* (Metro 2021m) (Appendix H).

4.3.1 Regulatory Setting and Methodology

4.3.1.1 Regulatory Setting

Property acquisitions and displacements, including the relocation of residents, 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 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 General Plan Housing Element 2013-2021* (City of Los Angeles 2013), *City of Vernon General Plan Housing Element 2014-2021* (City of Vernon 2017), *Florence-Firestone Community Plan* (Los Angeles County 2019), *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 would result in the purchase of an entire property and would 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 would result in the purchase of a portion of the property and would occur if the Build Alternative requires only a limited portion of the property, leaving the remainder of the site economically viable. Under a partial acquisition, the property owner would retain the remaining portion of the property. Metro would purchase a “fee interest” for those identified areas and would become owner for that portion of the property (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. Temporary construction easements would revert to their former use after construction activities have been completed. Permanent underground/subsurface easements would be required for tunneling for a subway and underground utilities. 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 Build Alternatives acquire a parcel, or portion thereof, that is occupied by a structure. The displacement area includes privately held residential, commercial, and industrial properties (parcels) directly affected by the Build Alternatives. “Replacement” refers to the movement (or relocation) of affected businesses and residences into suitable replacement sites.³ The replacement area includes the cities affected by the Build Alternatives 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 Build Alternatives’ rail centerline 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 Build Alternatives would affect existing properties and identifying such properties where the current use would not be possible if the Build Alternatives were constructed. Full or partial acquisitions and the number and type of displacements were identified to analyze potential effects related to displacement and acquisition on residential properties. The evaluation of effects on commercial and industrial properties consists of direct physical effects

³ Title 49 CFR 24.2 (a)(9)

on structures and effects that may disrupt the businesses' ability to conduct their primary function after project implementation (i.e., 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 Build Alternatives' 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. For purposes of the “gap analysis,” a “surplus” identifies a larger number of available replacement sites than required to accommodate and a “deficit” identified an insufficient number of replacement sites. A “suitable” replacement site would 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 Build Alternatives would 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. 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 details the land uses along the project alignment.

4.3.3 Environmental Consequences/Environmental Impacts

4.3.3.1 No Build Alternative

The projects associated with the No Build Alternative would continue to be built, and acquisitions and/or displacements may be required to support these projects. These acquisitions could include full acquisitions, partial acquisitions, permanent easements, and/or temporary construction 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 Alternative 1: Los Angeles Union Station to Pioneer Station

Acquisitions

Alternative 1 would require full and partial acquisitions, as shown in Table 4.3.1.. Full acquisitions would 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 for permanent underground easements would be required to accommodate tunneling for underground alignments and underground TPSS sites, in addition to station entrances, grade crossings and separations, freight track relocation, and other ancillary facilities (e.g., vents/switches/egress, train control house, radio house, and TPSSs). Property acquisitions would primarily affect commercial and industrial areas, although several residential properties would also be affected. Alternative 1 would affect 220 parcels and require 37 full property acquisitions and 254 partial acquisitions.

Table 4.3.1 summarizes the number of affected parcels and permanent acquisitions by Build Alternative, including design options and MSF site options. Table 4.3.2 presents permanent acquisitions by jurisdiction. Details on temporary construction easements (TCEs) are presented in Section 4.19, Construction Impacts and are not presented in the following permanent property acquisition tables. Each identified parcel may include more than one permanent partial acquisition and TCEs.

Table 4.3.1. Summary of Permanent Property Acquisitions by Build Alternative

Build Alternative	Affected Parcels ¹	Full Acquisitions	Partial Acquisitions	Affected Area (sq ft) ²
Alternative 1	220	37	254	1,570,000
Alternative 2	283	38	309	1,688,200
Alternative 3	172	25	188	1,291,300
Alternative 4	59	17	54	681,200
Design Option 1	12	0	20	249,600
Design Option 2	4	1	8	23,900
Paramount MSF Site Option	43	3	44	1,052,800
Bellflower MSF Site Option	2	2	0	934,500

Source: Metro 2021m

Notes: MSF = maintenance and storage facility; sq ft = square feet

¹ Parcels are identified by parcel boundaries and 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 Affected Area rounded to nearest hundred.

Table 4.3.2. Permanent Property Acquisitions by Jurisdiction and Build Alternatives

	Build Alternative/Jurisdiction	Affected Parcels ¹	Full Acquisitions	Partial Acquisitions	Affected Area (sq ft) ²
Alternatives 1, 2, 3	Los Angeles				
	Alternative 1	61	14	82	282,000
	Alternative 2	124	15	137	399,200
	Alternative 3	13	2	16	2,300
	Vernon	3	0	4	6,200
	Unincorporated LA County	1	0	1	100
	Huntington Park	43	2	47	52,000
	Cudahy	8	1	7	4,600
	Downey	2	0	4	3,800
South Gate	48	5	59	699,100	
Alternative 4	South Gate	5	2	4	158,100

	Build Alternative/Jurisdiction	Affected Parcels ¹	Full Acquisitions	Partial Acquisitions	Affected Area (sq ft) ²
Alternatives 1, 2, 3, 4	Paramount	36	3	42	283,800
	Bellflower	5	1	6	134,900
	Artesia	13	11	2	104,400
Design Options (Alternative 1 Only)	Los Angeles (Design Option 1)	12	0	20	249,600
	Los Angeles (Design Option 2)	4	1	8	23,900
MSF Site Options	Paramount (Paramount MSF)	43	3	44	1,052,800
	Bellflower (Bellflower MSF)	2	2	0	934,500

Source: Metro 2021m

Notes: MSF = maintenance and storage facility; sq ft = square feet

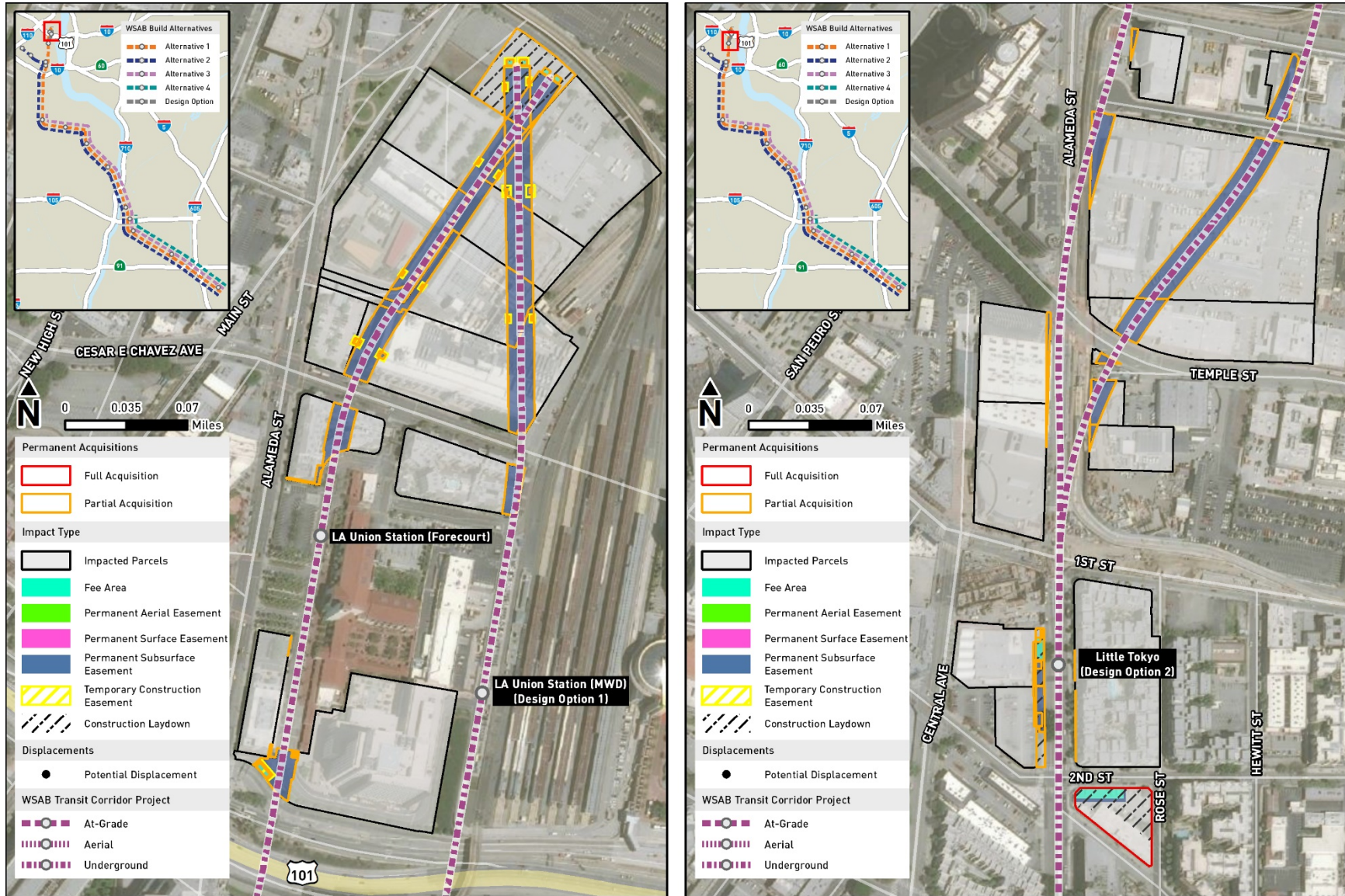
¹ Parcels are identified by parcel boundaries and APN. "Affected Parcels" is not a total sum of the permanent full and partial acquisitions. More than one permanent partial acquisition may occur on a single parcel and each permanent partial acquisition is counted.

² Affected Area rounded to nearest hundred.

Alternative 1 would also acquire portions of rail ROWs owned by the Union Pacific Railroad (UPRR), BNSF Railway, and the Ports of Los Angeles and Long Beach, including the portions of the PEROW, La Habra Subdivision, and San Pedro Subdivision. It is understood the freight tracks in the rail ROWs are active and would remain active during operation of the Project. Acquisition of portions of the rail ROW would allow the Project to realign the freight tracks to accommodate the Project tracks and allow continued operation of the freight tracks and spurs along the rail ROW.

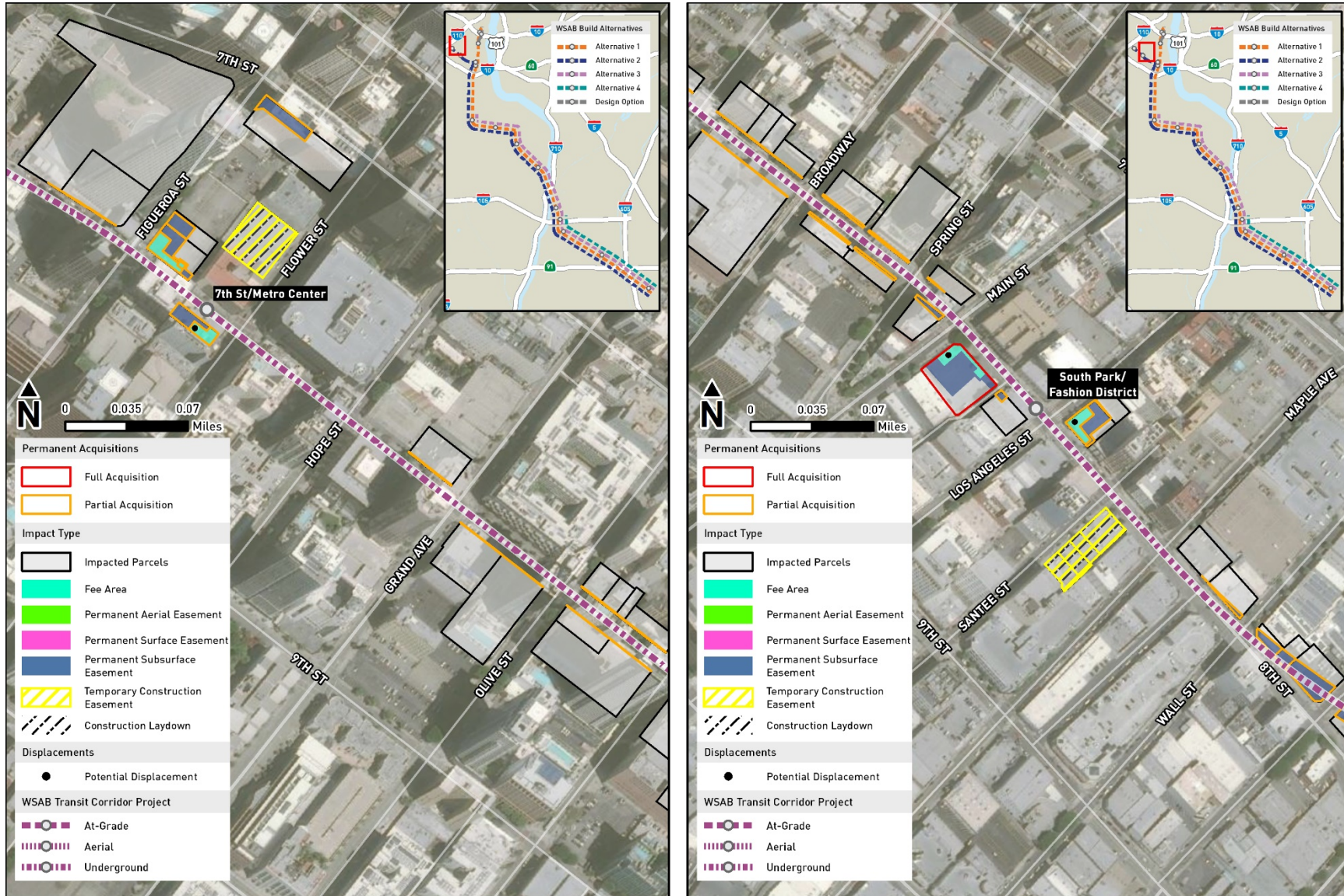
Figure 4.3-1 through Figure 4.3-17 show the permanent and temporary property acquisitions along the project corridor for the Build Alternatives, design options, and MSF site options.

Figure 4.3-1. Property Acquisitions for the Build Alternatives



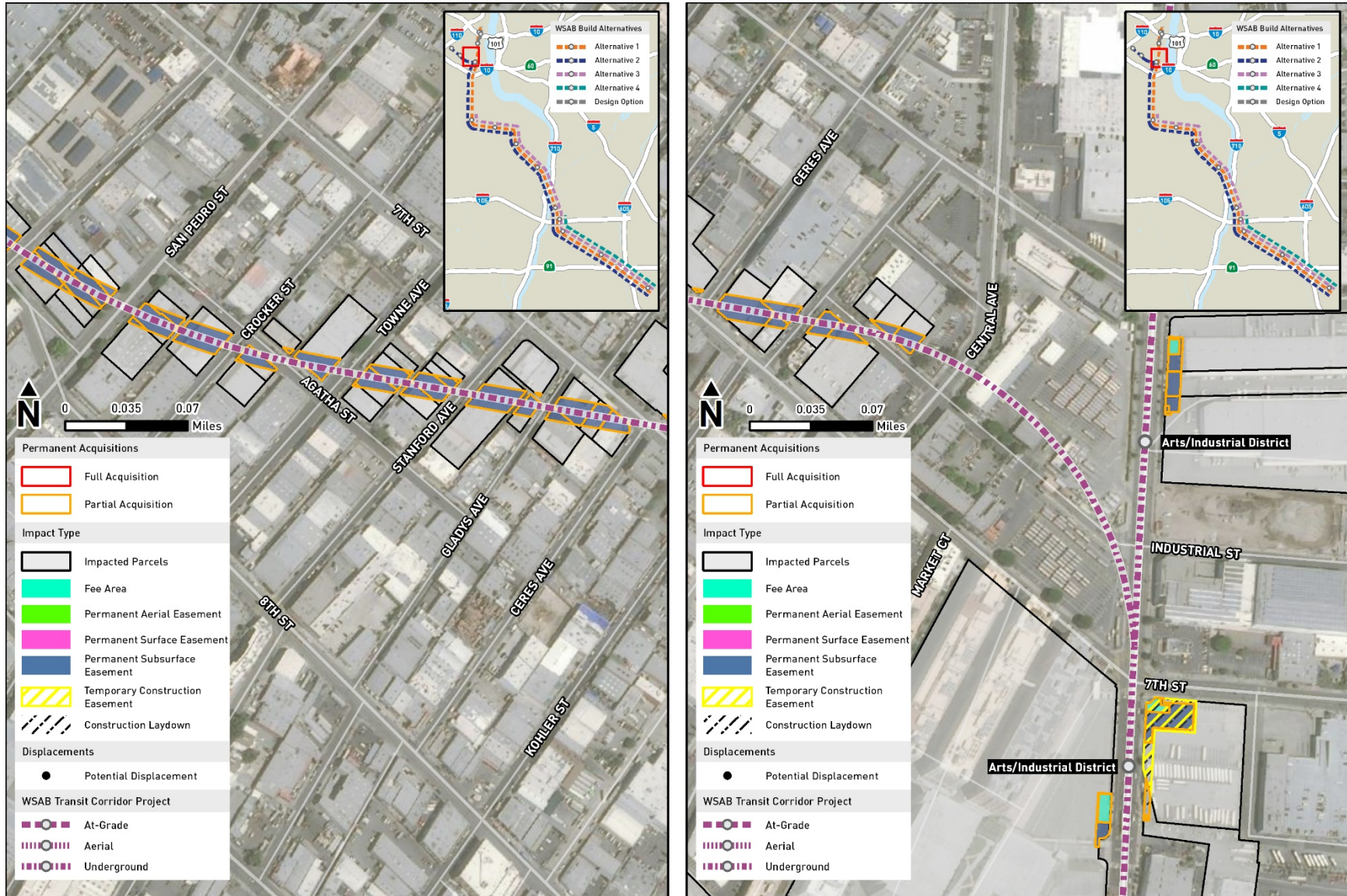
Source: Metro 2021m

Figure 4.3-2. Property Acquisitions for the Build Alternatives



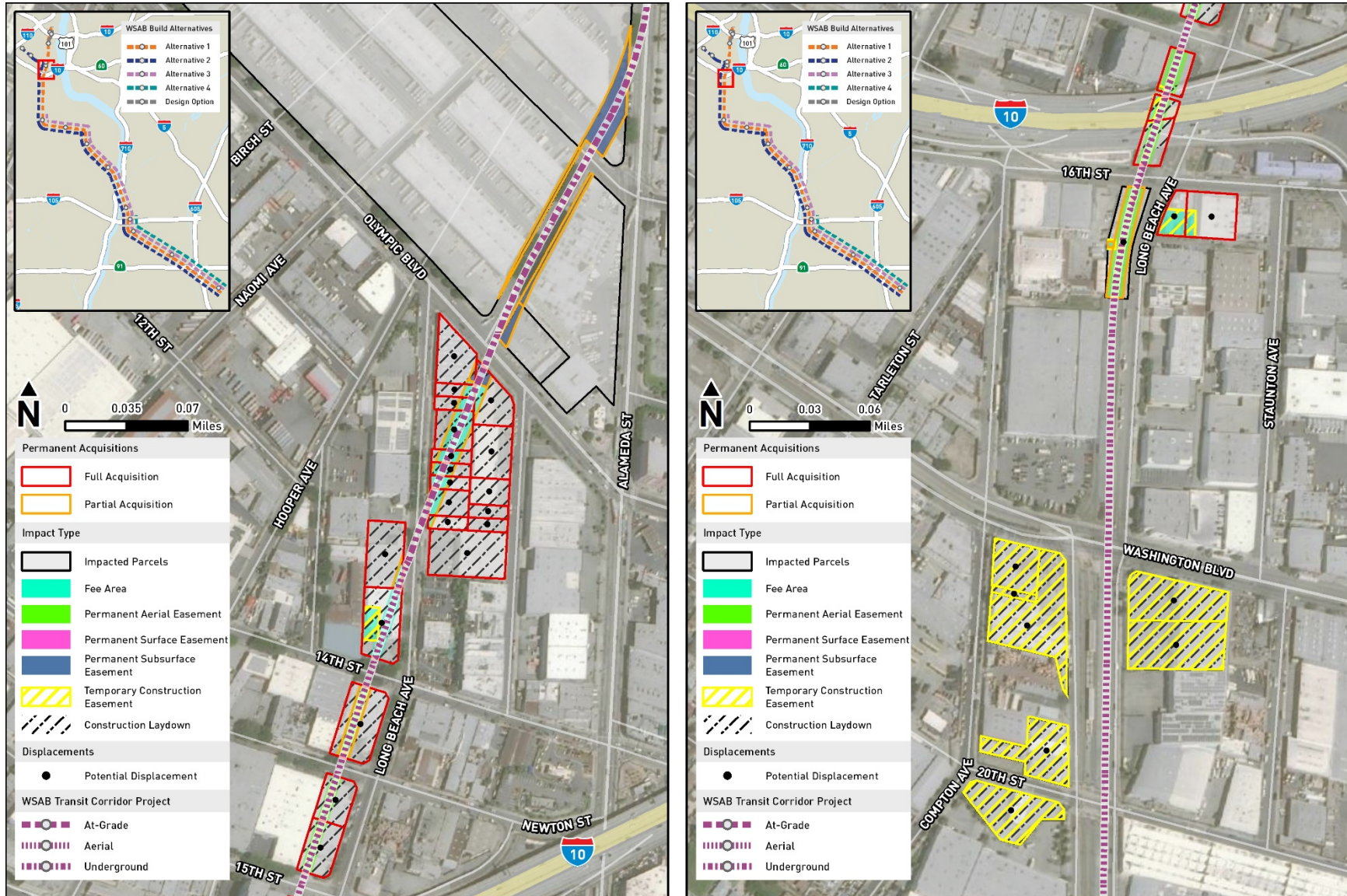
Source: Metro 2021m

Figure 4.3-3. Property Acquisitions for the Build Alternatives



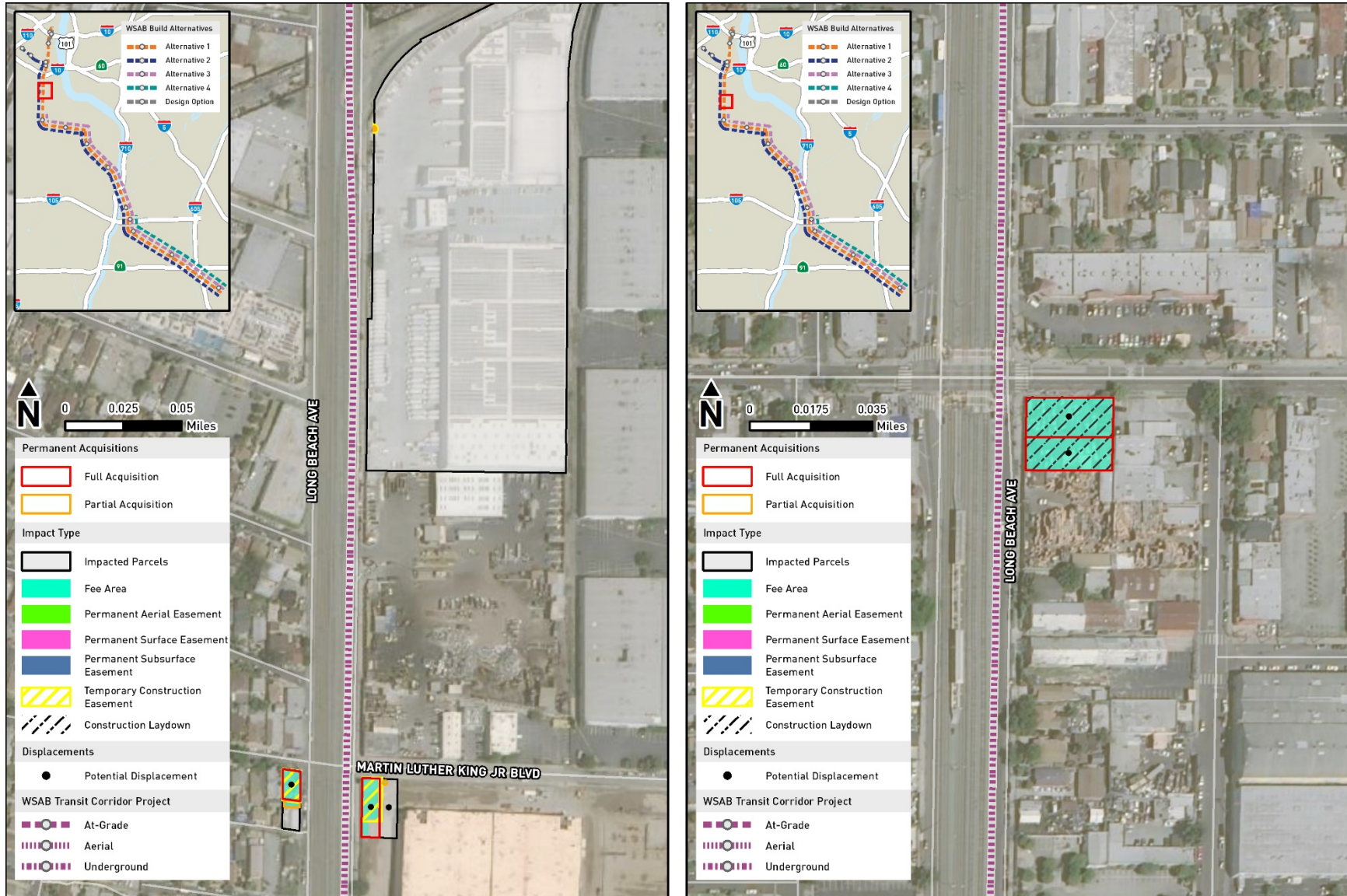
Source: Metro 2021m

Figure 4.3-4. Property Acquisitions for the Build Alternatives



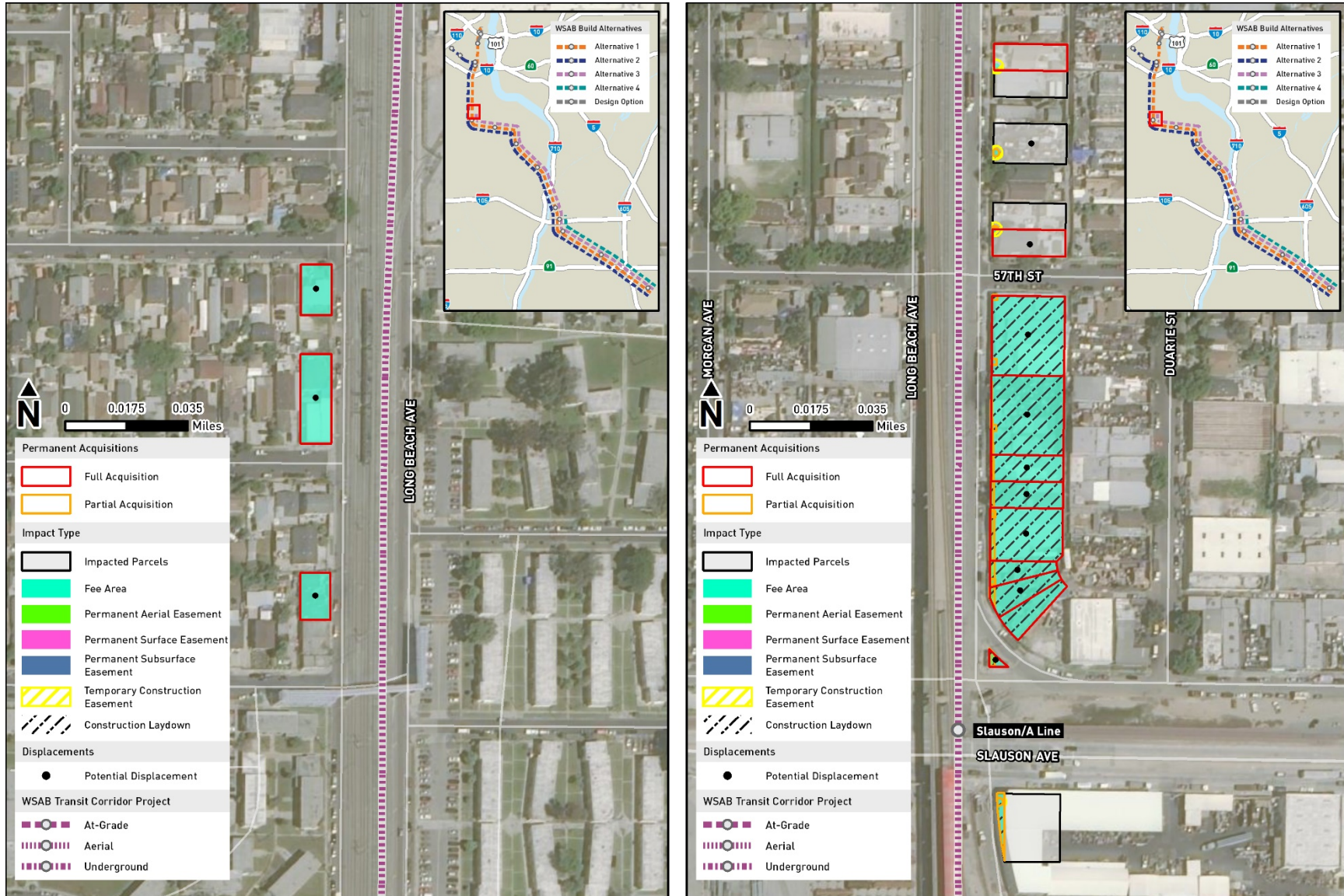
Source: Metro 2021m

Figure 4.3-5. Property Acquisitions for the Build Alternatives



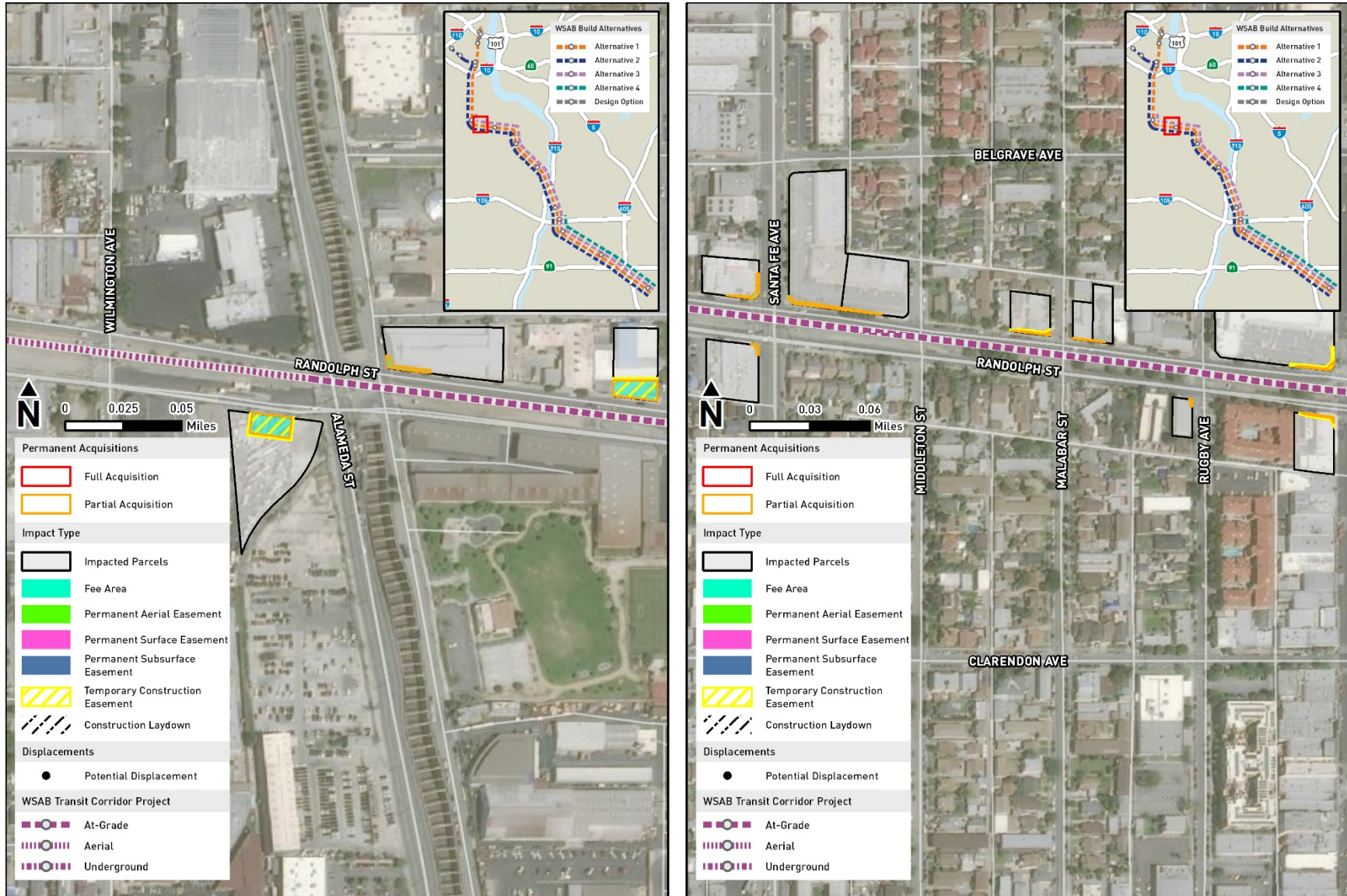
Source: Metro 2021m

Figure 4.3-6. Property Acquisitions for the Build Alternatives



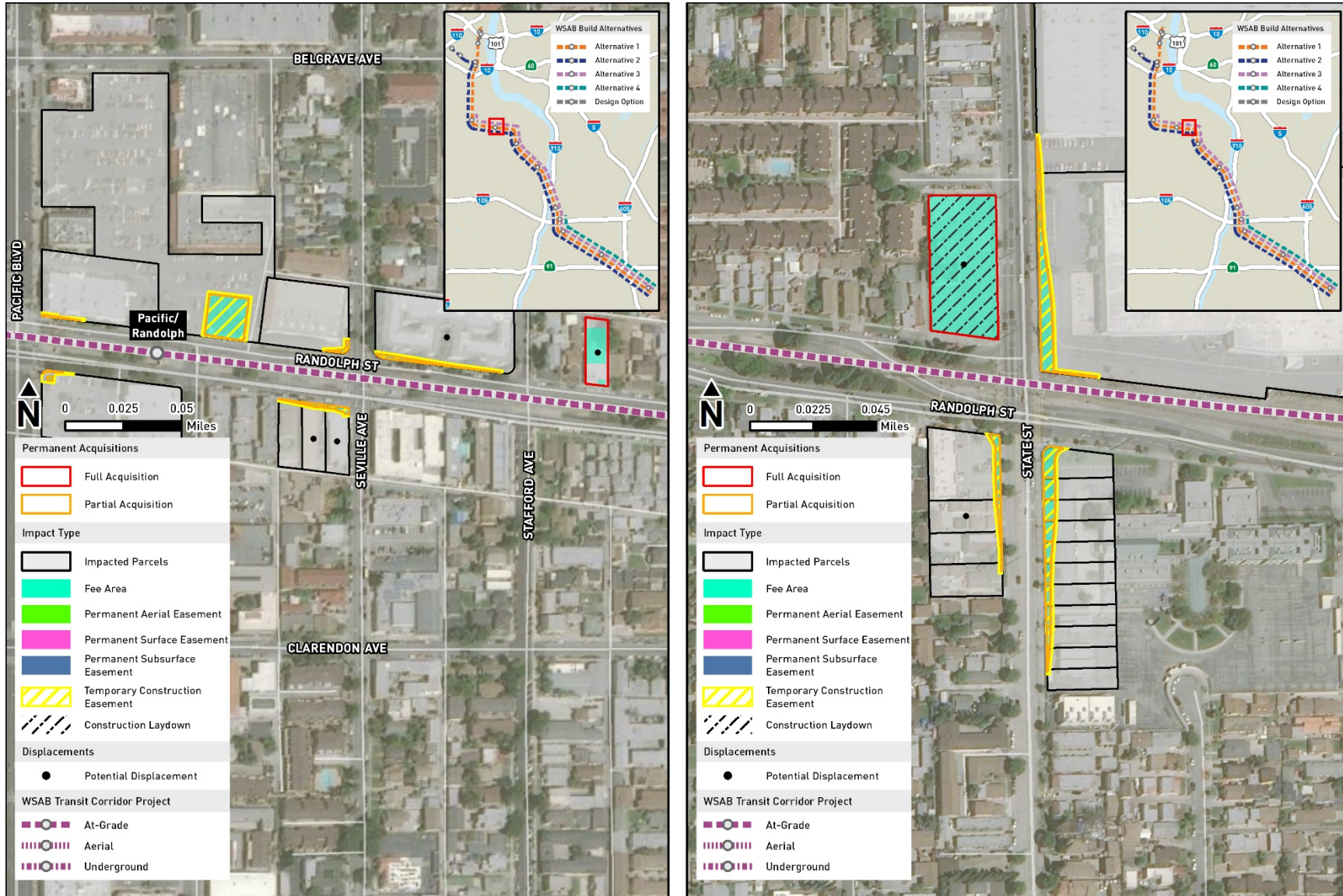
Source: Metro 2021m

Figure 4.3-7. Property Acquisitions for the Build Alternatives



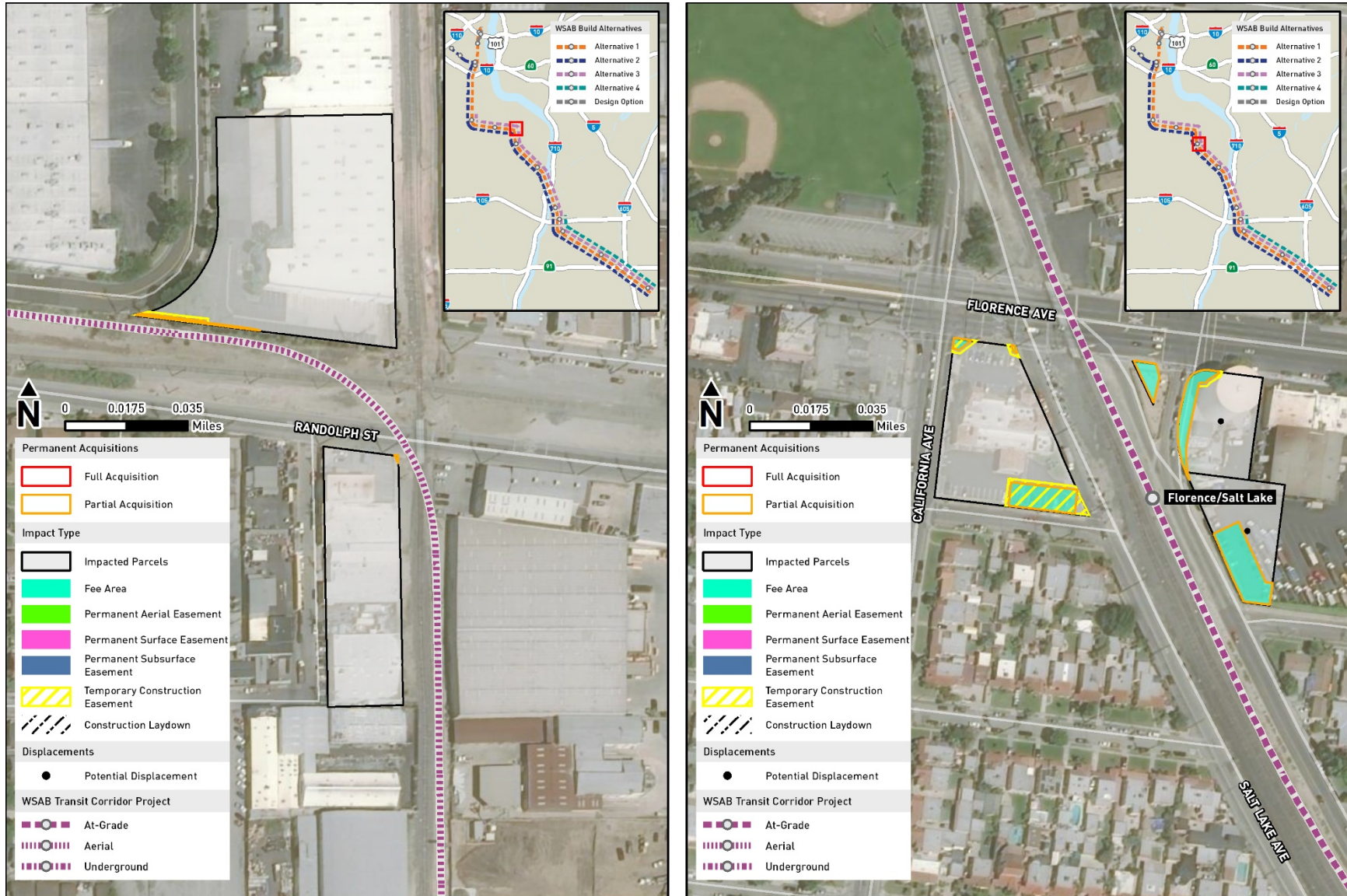
Source: Metro 2021m

Figure 4.3-8. Property Acquisitions for the Build Alternatives



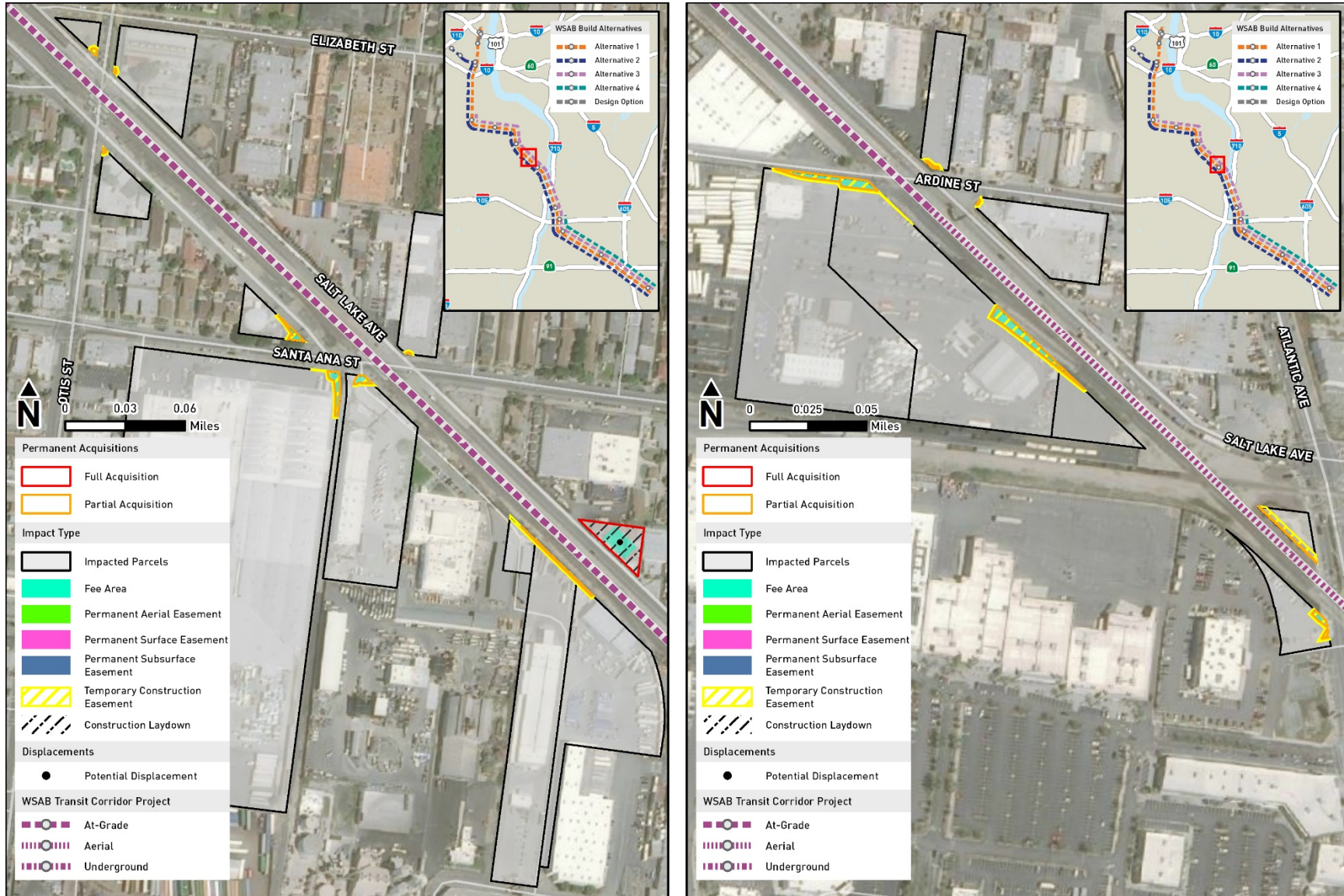
Source: Metro 2021m

Figure 4.3-9. Property Acquisitions for the Build Alternatives



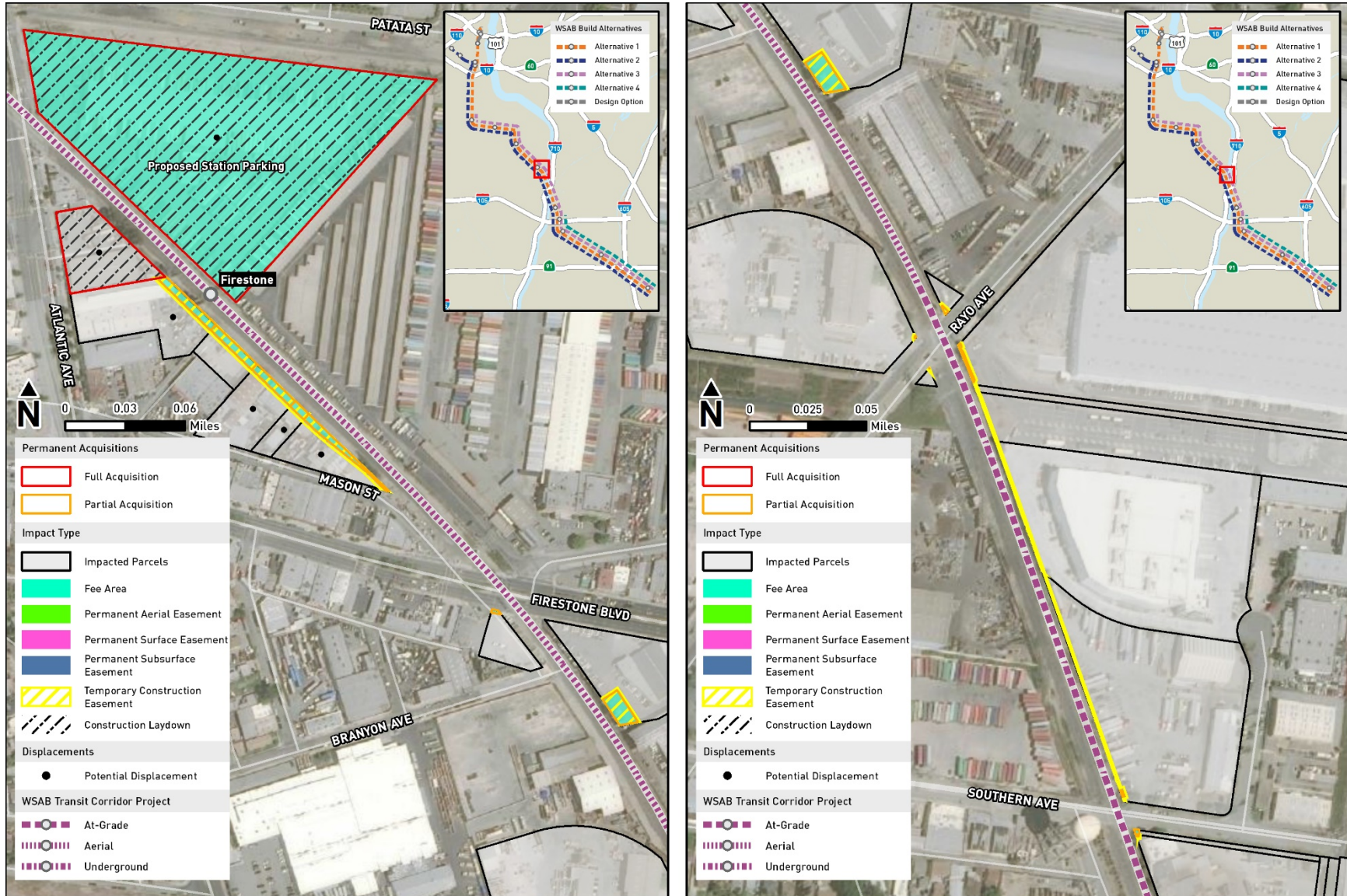
Source: Metro 2021m

Figure 4.3-10. Property Acquisitions for the Build Alternatives



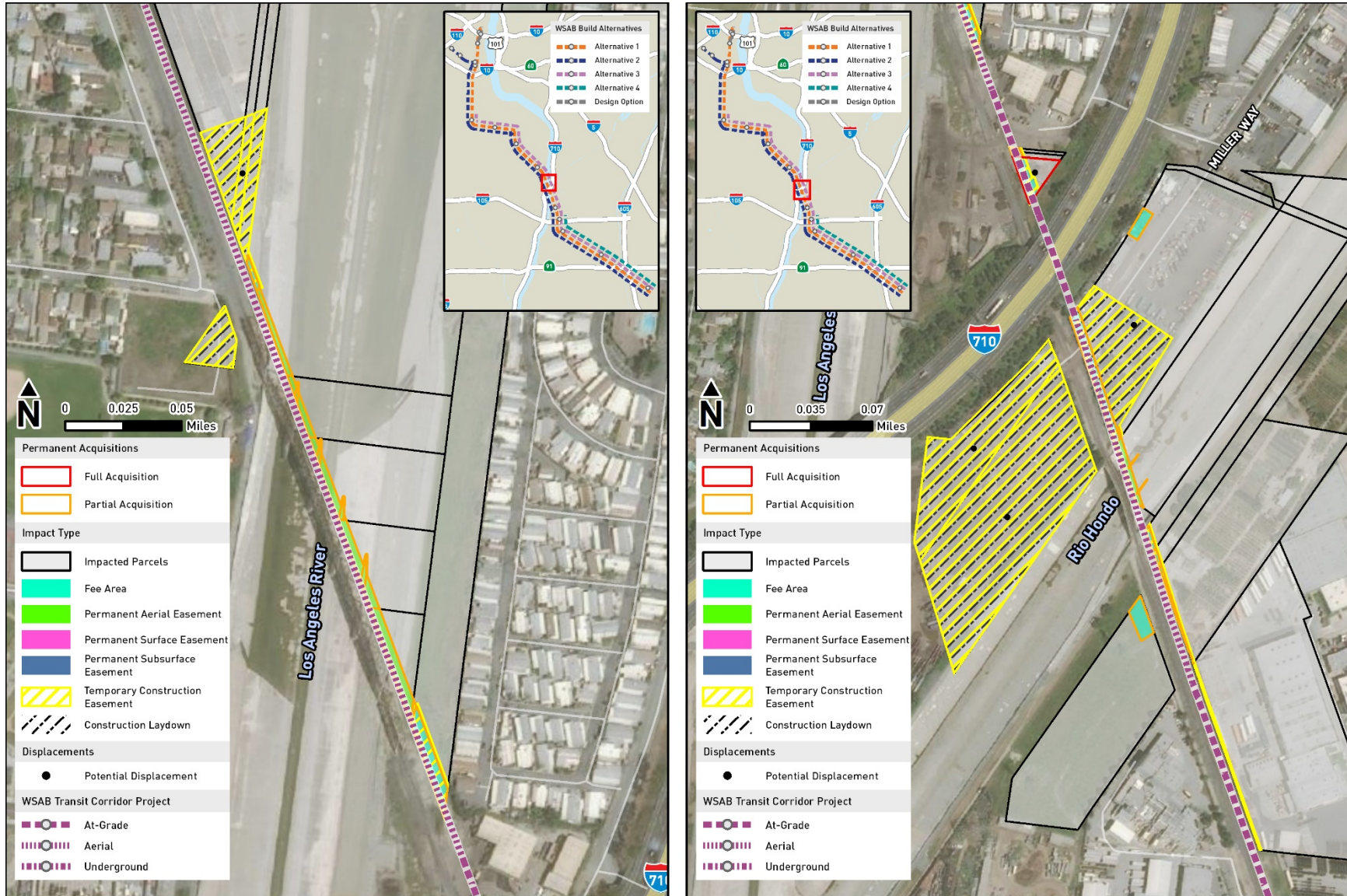
Source: Metro 2021m

Figure 4.3-11. Property Acquisitions for the Build Alternatives



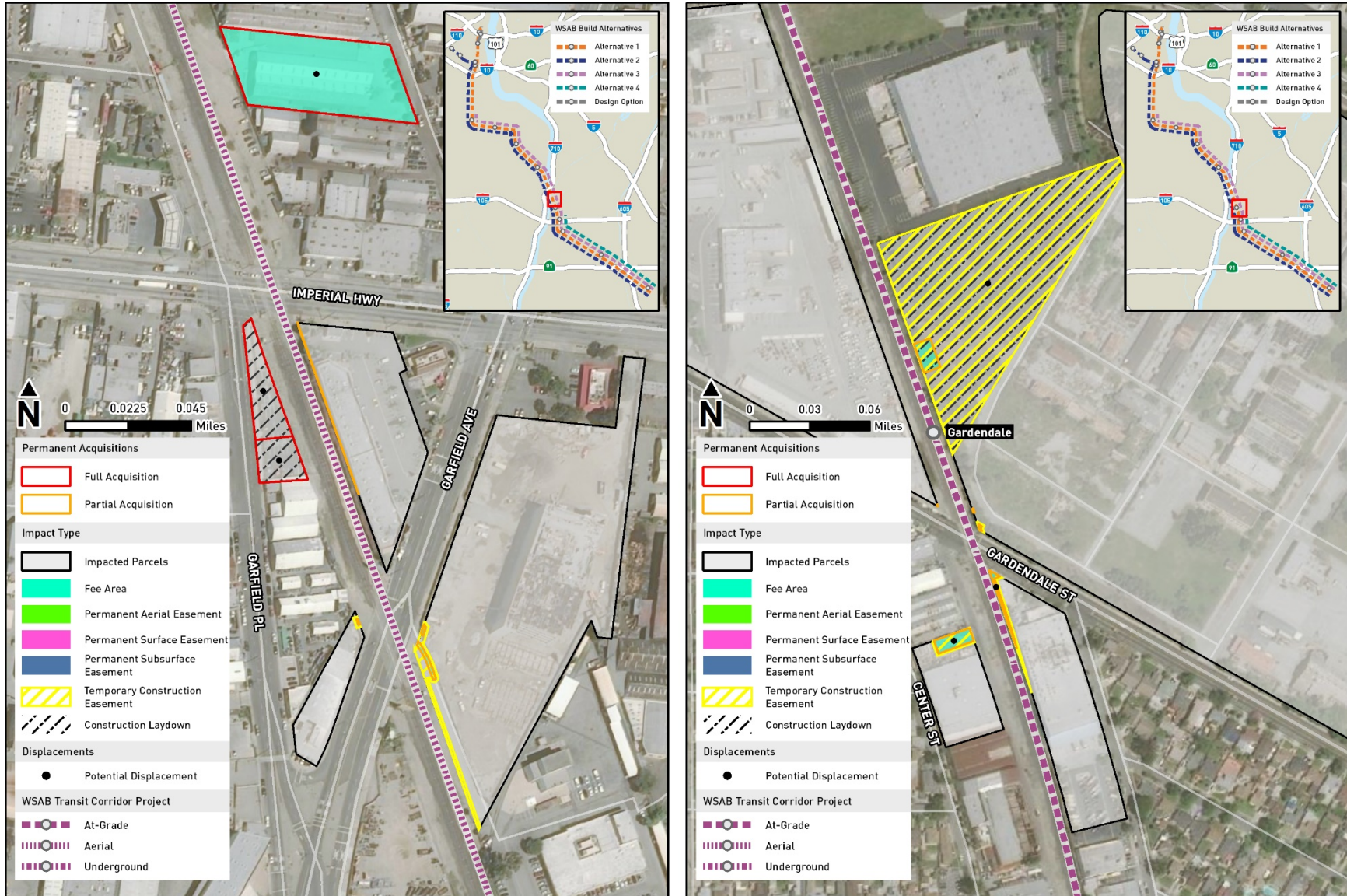
Source: Metro 2021m

Figure 4.3-12. Property Acquisitions for the Build Alternatives



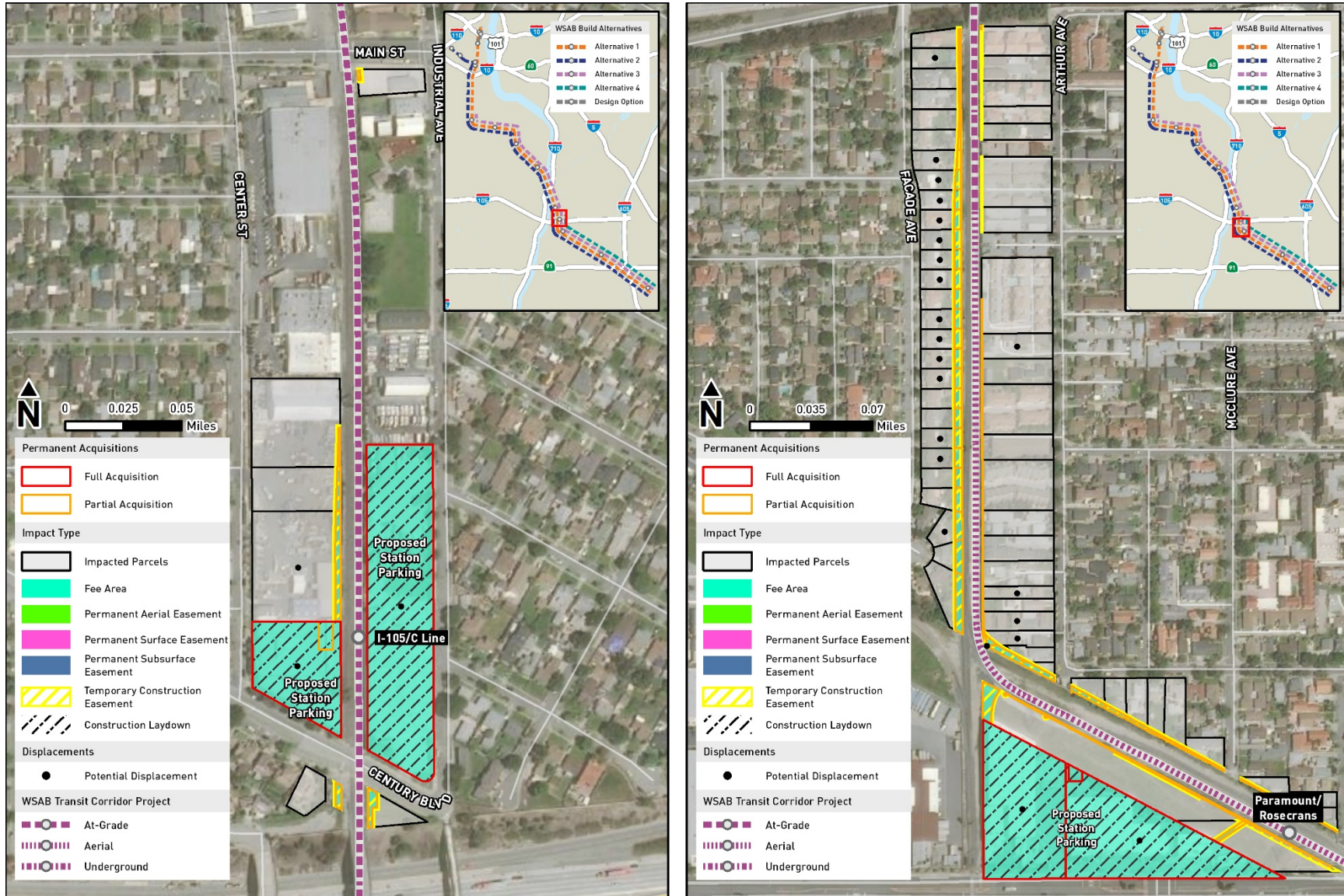
Source: Metro 2021m

Figure 4.3-13. Property Acquisitions for the Build Alternatives



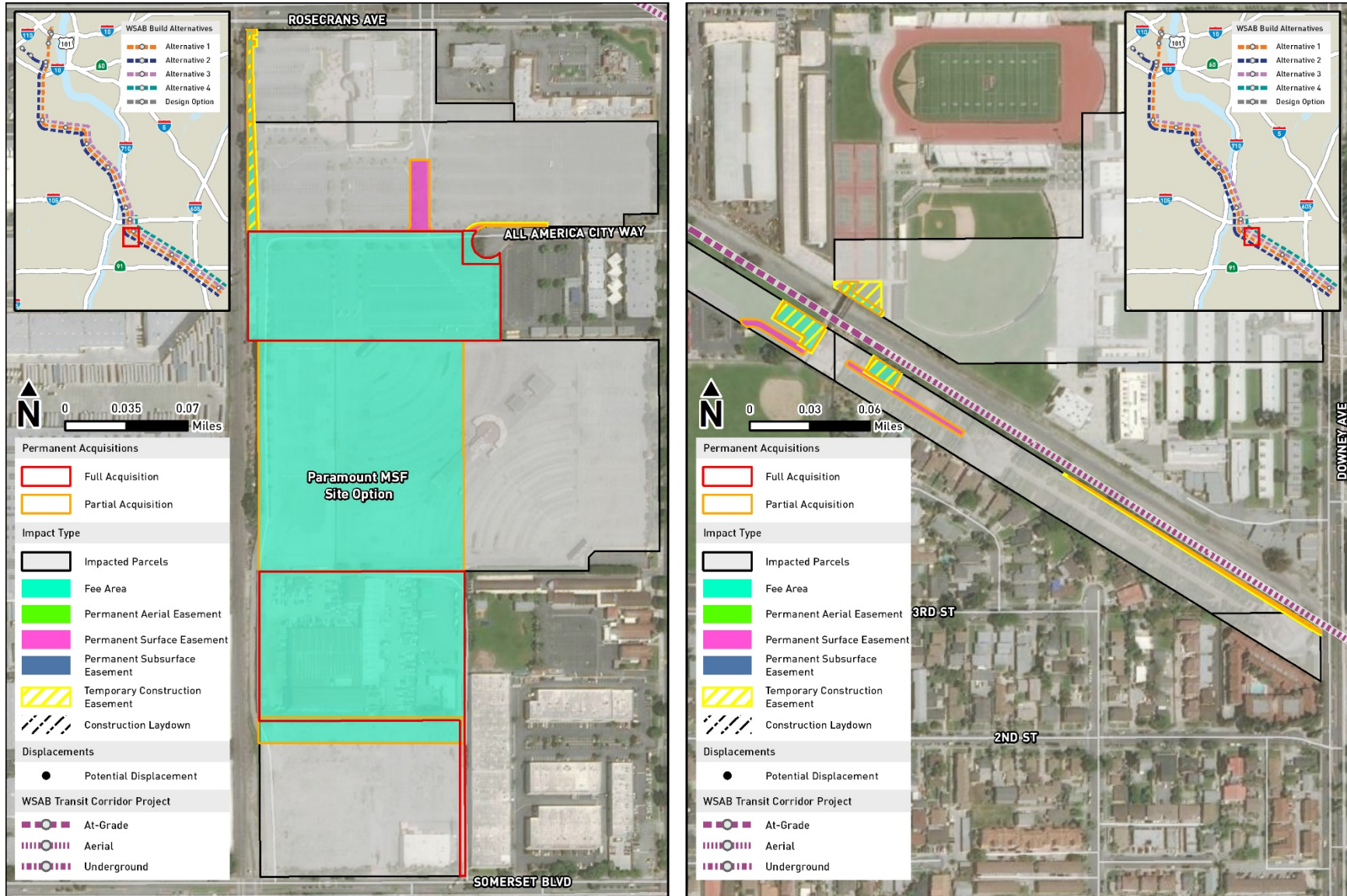
Source: Metro 2021m

Figure 4.3-14. Property Acquisitions for the Build Alternatives



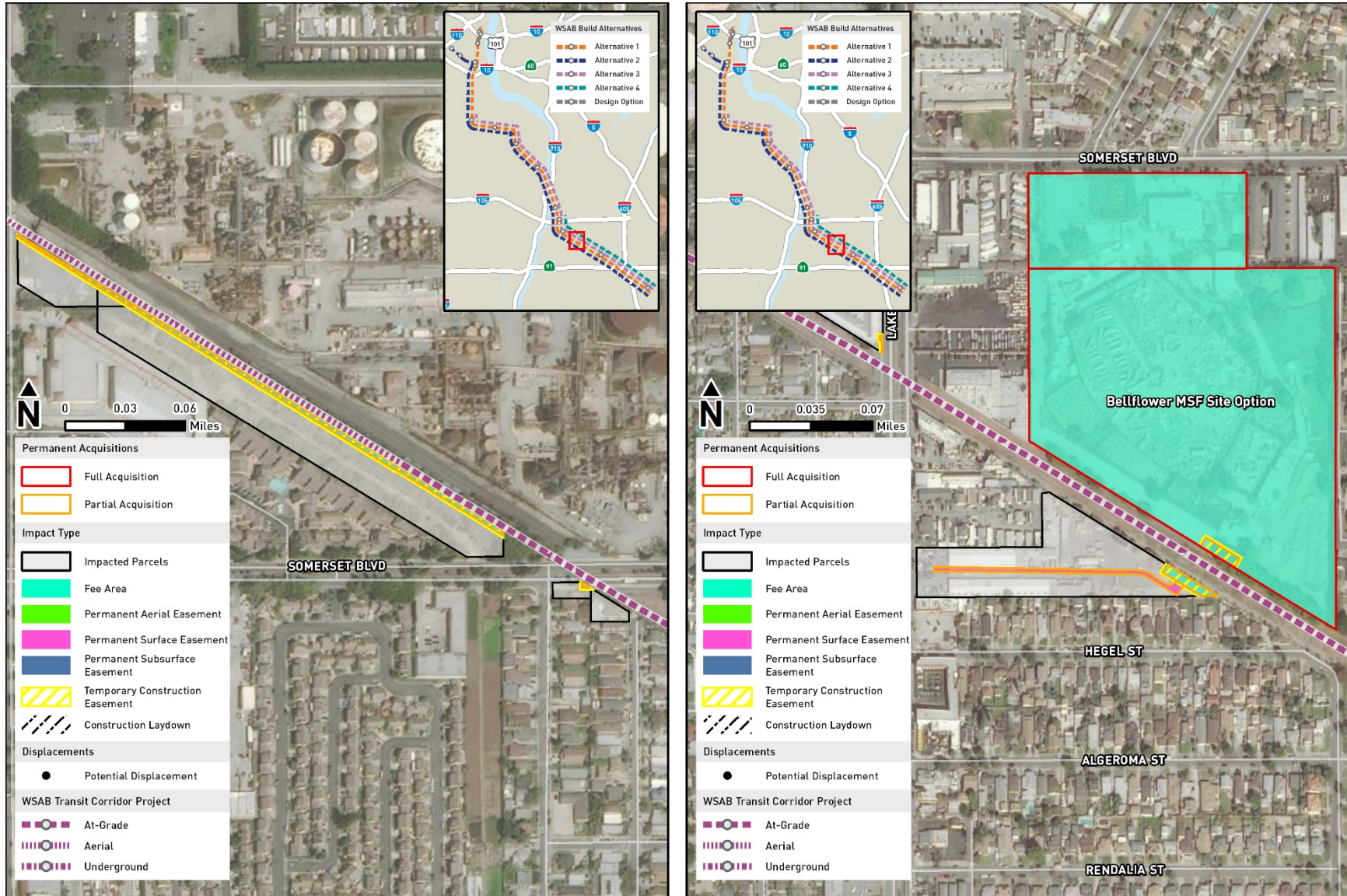
Source: Metro 2021m

Figure 4.3-15. Property Acquisitions for the Build Alternatives



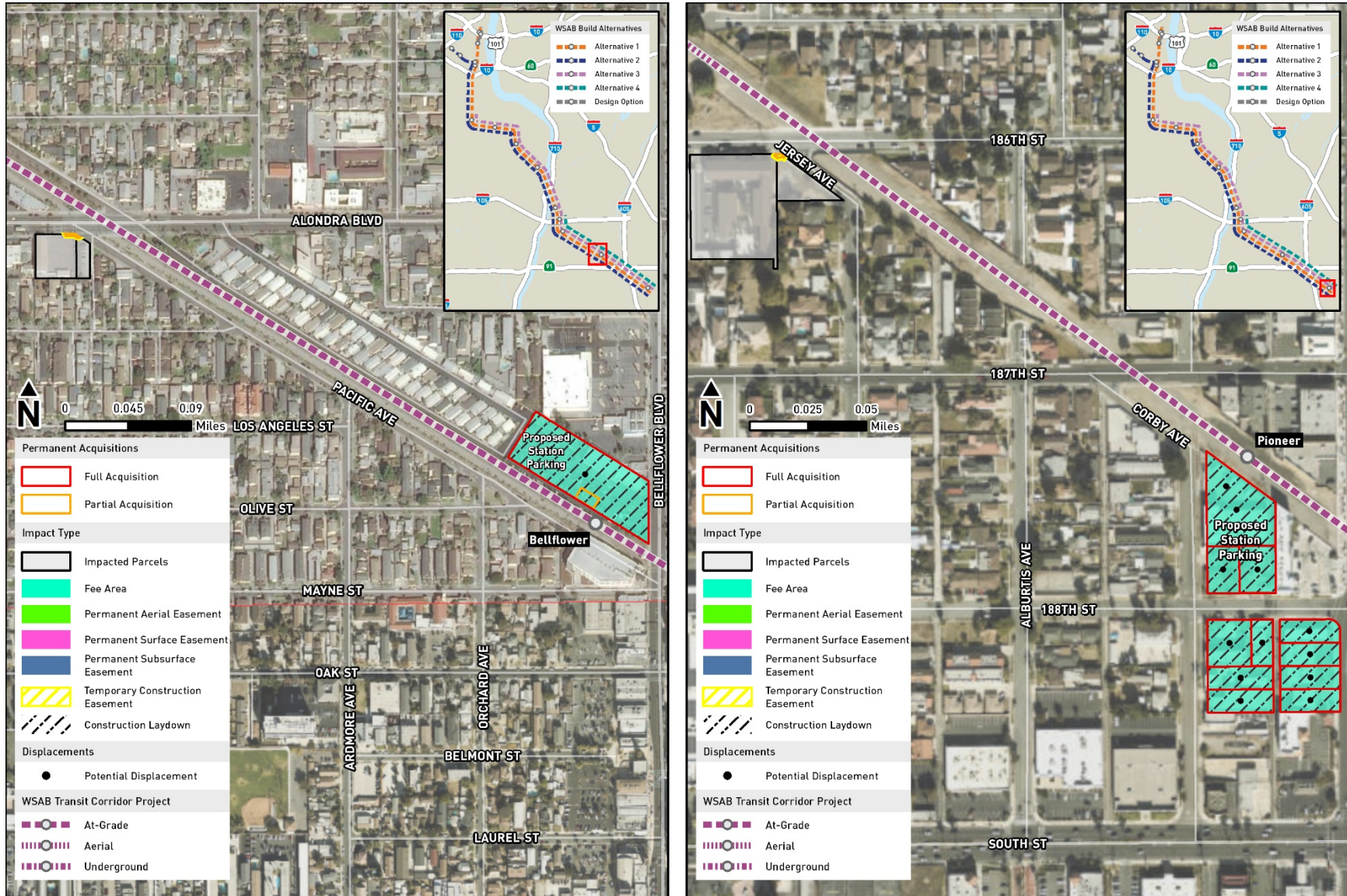
Source: Metro 2021m

Figure 4.3-16. Property Acquisitions for the Build Alternatives



Source: Metro 2021m

Figure 4.3-17. Property Acquisitions for the Build Alternatives



Source: Metro 2021m

Displacements

Business Displacements: Business displacements would be required to accommodate project-related facilities, including aerial structures, stations, TPSS sites, and grade crossings. For relocated businesses, jobs would also be relocated and would not be permanently displaced. However, permanent job loss could still occur as a result of the relocation. Table 4.3.3 and Table 4.3.4 summarize the number of potential businesses and employees that would be displaced by alternative and by jurisdiction. Alternative 1 would displace approximately 89 businesses and approximately 601 employees.

Table 4.3.3. Permanent Business and Employee Displacements by Build Alternative

Build Alternatives ¹	Business Displacement								Estimated Employees Displaced ²
	Auto Services	Retail	Office	Food Service/ Restaurant	Industrial	Plant Nursery	Sports Center	Total	
Alternative 1	16	29	14	6	23	1	0	89	601
Alternative 2	16	44	14	10	23	1	0	108	687
Alternative 3	15	17	12	6	14	1	0	65	352
Alternative 4	4	8	3	0	3	0	0	18	115
Design Option 1	0	0	0	0	0	0	0	0	0
Design Option 2	0	0	1	0	0	0	0	1	23
Paramount MSF Site Option	0	4	1	0	0	0	0	5	113
Bellflower MSF Site Option	0	0	0	0	0	0	2	2	75

Source: Metro 2021m

Notes: ¹ Businesses displaced for the City of Paramount and the City of Bellflower do not include businesses affected by the Paramount MSF site option and Bellflower MSF site option. The properties affected by the MSF site options are listed separately from the cities.

² Estimated number of displaced employees is based on research using RefUSA and CoStar's Tenant module. Employee counts for business records missing this information were estimated by referencing similarly sized businesses in the area where employee count data was available.

MSF = maintenance and storage facility

Table 4.3.4. Permanent Business and Employee Displacements by Jurisdiction and Build Alternatives

	Build Alternative	Business Displacement								Estimated Employees Displaced ²
		Auto Services	Retail	Office	Food Service/ Restaurant	Industrial	Plant Nursery	Sports Center	Total	
Alternative 1, 2, 3¹	Los Angeles									
	Alternative 1	5	13	3	0	12	0	0	33	278
	Alternative 2	5	28	3	4	12	0	0	52	365
	Alternative 3	4	1	1	0	3	0	0	9	30
	Huntington Park	0	3	4	2	1	0	0	10	60
	Cudahy	0	0	0	0	1	0	0	1	7
	South Gate	7	5	4	4	8	1	0	29	159
Alternative 4¹	South Gate	0	0	0	0	2	0	0	2	18
Alternative 1, 2, 3, and 4¹	Paramount	1	0	0	0	1	0	0	2	57
	Bellflower	1	0	0	0	0	0	0	1	10
	Artesia	2	8	3	0	0	0	0	13	30
Design Options	Los Angeles (Design Option 1)	0	0	0	0	0	0	0	0	0
	Los Angeles (Design Option 2)	0	0	1	0	0	0	0	1	23
MSF Site Options	Paramount (Paramount MSF Site Option)	0	4	0	0	1	0	0	5	113
	Bellflower (Bellflower MSF Site Option)	0	0	0	0	0	0	2	2	75

Source: Metro 2021m

Notes: ¹ Businesses displaced for the City of Paramount and the City of Bellflower do not include businesses affected by the Paramount MSF site option and Bellflower MSF site option. The properties affected by the MSF site options are listed separately from the cities.

² Estimated number of displaced employees is based on research using RefUSA and CoStar's Tenant module. Employee counts for business records missing this information were estimated by referencing similarly sized businesses in the area where employee count data was available.

MSF = maintenance and storage facility

Residential Displacements: Full acquisitions of residential properties would be required to accommodate the aerial structure columns and parking facilities. Partial acquisitions of residential properties would be required to accommodate grade crossings, aerial crossings, track alignment, and other ancillary facilities. The partial acquisitions would be 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 would be required.

Table 4.3.5 summarizes the number of displaced residential units and occupants by Build Alternative, and Table 4.3.6 provides a summary by jurisdiction. Alternative 1 would require 6 full acquisitions and 15 partial acquisitions of residential properties that would affect a total of 21 residential properties and displace approximately 78 residential occupants.

Table 4.3.5. Permanent Residential Displacements by Build Alternative

		Acquisition Type	Residential Units Displaced			Estimated Occupants Displaced		
			Single-Family	Multi-Family	Total	Single-Family	Multi-Family	Total
Build Alternative	Alternatives 1, 2, 3 ¹	Full	4	2	6	14	8	22
		Partial	5	10	15	17	39	56
	Total		9	12	21	31	47	78
	Alternative 4 ²	Full	2	0	2	8	0	8
		Partial	2	4	6	8	16	24
Total		4	4	8	16	16	32	
Design Options	Design Options 1 and 2	Full/Partial	0	0	0	0	0	0
MSF Site Options	Paramount MSF Site Option	Full	1	0	1	4	0	4
		Partial	3	3	6	12	12	24
	Bellflower MSF Site Option	Full/Partial	0	0	0	0	0	0

Source: Metro 2021m

Notes: ¹ Alternatives 1, 2, and 3 consist of residential displacements in the Cities of Los Angeles, Huntington Park, Paramount, and Artesia.

² Alternative 4 consists of residential displacements in the Cities of Paramount and Artesia.

MSF = maintenance and storage facility

Table 4.3.6. Permanent Residential Displacements by Jurisdiction

	Jurisdiction	Acquisition Type	Residential Units Displaced			Estimated Occupants Displaced		
			Single-Family Units	Multi-Family Units	Total	Single-Family	Multi-Family	Total
Alternatives 1, 2 and 3	Los Angeles	Full	2	0	2	6	0	6
		Partial	3	1	4	9	3	12
	Huntington Park	Full	0	2	2	0	8	8
		Partial	0	5	5	0	20	20
Alternatives 1, 2, 3, 4	Paramount	Partial	2	4	6	8	16	24
	Artesia	Full	2	0	2	8	0	8
Design Options	Design Options 1 and 2	Full/Partial	0	0	0	0	0	0
MSF Site Options	Paramount MSF Site Option	Full	1	0	1	4	0	4
		Partial	3	3	6	12	12	24
	Bellflower MSF Site Option	Full/Partial	0	0	0	0	0	0

Source: Metro 2021m

Note: MSF = maintenance and storage facility

Metro would compensate owners at fair market value to purchase the required property and would compensate owners for damages to the remainder property as applicable. Residents of fully acquired properties would need to relocate while residents affected by partial acquisitions may make a case that the remainder property is no longer compatible with their intended use and may choose to relocate. This may result in the need to relocate some residents, but further information will need to be obtained during discussions with owners at the time of acquisition.

Replacement and Relocation

Business Relocation: An inventory was developed for the Project 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 2020. A “gap analysis” identifying if a surplus or deficit of replacement sites are available was conducted. Table 4.3.7 summarizes the gap analysis, which determined that a sufficient number of comparable replacement sites may not be available within displacement cities, specifically for automotive businesses in the Cities of Los Angeles and South Gate. These uses may not be able to relocate within the same city; however, expanding the search to nearby cities shows that a sufficient number of replacement sites are available within 6 miles of the affected business. Thus, suitable replacement sites would be available within a reasonable distance from affected properties.

Table 4.3.7. Gap Analysis of Displacements and Available Units

		Business Type	Businesses Displaced	Non-Residential Properties within City Boundary		Non-Residential Properties within 6 Miles of Property	
				Total Properties Available	Size of Surplus	Total Properties Available	Size of Surplus
Alternatives 1, 2, 3	Los Angeles ¹ Alternative 1	Auto Services	5	0	-5	24	19
		Retail	13	293	280	915	902
		Office	3	249	246	465	462
		Industrial	12	254	242	583	571
	Los Angeles ¹ Alternative 2	Auto Services	5	0	-5	24	19
		Retail	28	293	265	915	887
		Office	3	249	246	465	462
		Food Service	4	17	13	61	57
		Industrial	12	254	242	583	571
	Alternative 3		Auto Services	4	0	-4	24
Retail			1	293	292	915	914
Office			1	249	248	465	464
Industrial			3	254	251	61	581
Huntington Park		Retail	3	60	57	710	707
		Office	4	26	22	542	538
		Food Service	2	12	10	11	9
		Industrial	1	16	15	367	366
Cudahy		Industrial	1	1	0	367	366
South Gate		Auto Services	7	2	-5	41	34
		Retail	5	43	38	396	391
		Office	4	3	-1	39	35
		Food Service	4	2	-2	17	13
		Industrial	8	8	0	458	450
	Plant Nursery	1	0	-1	0	-1	
Alternative 4	South Gate	Industrial	2	8	6	458	456
Alternatives 1, 2, 3, 4	Paramount	Auto Services	1	2	1	17	16
		Industrial	1	12	11	170	169
	Bellflower	Auto Services	1	7	6	26	25
		Retail	8	38	30	242	234
		Office	3	5	2	95	92

		Business Type	Businesses Displaced	Non-Residential Properties within City Boundary		Non-Residential Properties within 6 Miles of Property	
				Total Properties Available	Size of Surplus	Total Properties Available	Size of Surplus
Design Option 2²	Los Angeles	Industrial	1	8	7	458	457
MSF Site Options	Paramount	Retail	2	11	9	220	218
		Industrial ²	1	12	11	170	169
		Drive-in	1	0	-1	0	-1
		Swap Meet	1	0	-1	0	-1
	Bellflower	Sports Center	2	0	-2	0	-2

Source: Metro 2021m

Notes: ¹ Includes the Los Angeles Zip codes of 90001, 90011, and 90058 and areas 6 miles from the respective displaced businesses.

² "Total Properties Available" and "Size of Surplus" does not take into account the Build Alternative totals.

MSF = maintenance and storage facility

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 would be acquired for the Build Alternatives. A search for similarly sized vacant land for lease was conducted by using available listing services and contacting real estate brokers in the area. 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 would be challenging. Metro would provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act and California Relocation Act. Refer to Section 4.3.3.8 for additional information on special relocation considerations.

Residential Replacement: Table 4.3.8 summarizes the inventory and overall median price range of residential units available for sale and rent in the cities that would have residential displacements (i.e., Los Angeles, Huntington Park, Bellflower, Paramount, and Artesia). Inventory of the surrounding cities (Vernon, Downey, Cerritos, Lakewood, and North Long Beach) is also provided as these cities could be able to accommodate residential displacements in the project corridor. Based on 2020 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 would also be able to accommodate the residential displacements in the project corridor. Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees. This analysis does not account for residents currently living in rent-controlled units and relocation to market-rate units.

Metro would 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, Alternative 1 would not result in adverse effects related to acquisitions and displacements.

Table 4.3.8. Inventory of Residential Units for Sale and Rent

	Jurisdiction/Zip Code	Number of Units ¹				Price Range
		1- Bed	2- Bed	3- Bed	Total Units	Overall Median Range ²
Single-Family Units for Sale	Los Angeles ³	6	17	25	59	
	90001	1	10	3	14	\$386,286
	90011	6	17	20	43	\$472,899
	90058	0	0	2	2	\$239,000
	Huntington Park	0	9	13	22	\$475,693
	Paramount	3	12	17	11	\$464,896
	Bellflower	0	4	26	30	\$551,357
	Artesia	0	3	8	11	\$600,218
	Total	15	62	108	164	
Single-Family Units for Rent	Los Angeles ³	0	0	3	3	
	90001	0	0	1	1	\$3,000
	90011	0	0	2	2	\$2,250
	90058	0	0	0	0	N/A
	Huntington Park	1	0	1	2	\$3,000
	Paramount	0	1	2	3	\$2,600
	Bellflower	0	1	1	2	\$2,500
	Artesia	0	5	4	8	\$2,550
	Total	1	7	11	18	
Apartments for Rent	Los Angeles ³	14	30	15	59	
	90001	7	13	4	24	\$2,317
	90011	7	16	11	34	\$2,385
	90058	0	1	0	1	N/A
	Vernon	0	0	0	0	N/A
	Huntington Park	5	2	2	9	\$2,329
	Paramount	6	15	4	25	\$2,288
	Bellflower	30	29	6	65	\$2,345
	Downey	70	23	7	100	\$2,479
	Norwalk	8	7	7	22	\$2,380
	Artesia	9	9	0	18	\$2,273
	Cerritos	29	5	10	44	\$2,701
	Lakewood	271	11	15	297	\$2,349
	North Long Beach	0	15	6	21	\$2,245
Total	456	176	87	660		

Source: Metro 2021m

Notes: It is assumed that residential units for rent that may be affected by the Build Alternatives 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 Hotpads.com and Zillow.com June/July 2020 search

² Los Angeles Almanac. "Average Rent* - Multifamily, Single-Family and Condominium Residences by Los Angeles County Zip Codes 2015-2020." Website: <http://www.laalmanac.com/economy/ec40b.php>. Accessed June 2020.

³ Los Angeles includes the following Zip codes: 90001, 90011, 90058

N/A = not applicable

4.3.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Acquisitions

As shown in Table 4.3.1, Alternative 2 would affect 283 parcels and require 38 full acquisitions and 309 partial acquisitions. Similar to Alternative 1, Alternative 2 property acquisitions would 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). Full and partial property acquisitions would be required for the same project components as Alternative 1. The locations of these acquisitions are shown in Figure 4.3-1 to Figure 4.3-17. Similar to Alternative 1, Alternative 2 would also acquire portions of rail ROWs owned by UPRR, BNSF Railway, and the Ports of Los Angeles and Long Beach. Acquisition of portions of the rail ROW would allow the Project to realign the freight tracks to accommodate the project tracks and allow continued operation of the freight tracks and spurs along the rail ROW.

Displacements

Business Displacements: Similar to Alternative 1, business displacements would occur to accommodate project-related facilities, including aerial structures, stations, TPSS sites, and grade crossings. Alternative 2 would displace approximately 108 businesses and approximately 687 employees (Table 4.3.3 and Table 4.3.4).

Residential Displacements: Similar to Alternative 1, full acquisitions and partial acquisitions of residential properties would be required to accommodate the aerial structure columns, grade crossings, aerial crossings, track alignment, parking facilities, and other ancillary facilities. Alternative 2 would result in the same number of residential property acquisitions and displaced residents as Alternative 1: 6 full acquisitions and 15 partial acquisitions of residential properties that would affect a total of 21 residential properties and displace approximately 78 residential occupants (Table 4.3.5). Residential displacement would occur in the Cities of Los Angeles, Huntington Park, Bellflower, Paramount, and Artesia (Table 4.3.6).

Replacement and Relocation

Business Relocation: Similar to Alternative 1, replacement sites would be available for displaced businesses; however, a sufficient number of comparable replacement sites may not be available within displacement cities for select businesses (i.e., automotive businesses in the City of Los Angeles and City of South Gate, and nursery property in the City of South Gate) (Table 4.3.7). These are the same businesses that would be affected by Alternative 1. Refer to the subheading “Replacement and Relocation” in Section 4.3.3.2 for additional information on relocation of these businesses. Refer to Section 4.3.3.8 for additional information on special relocation considerations.

Residential Replacement: Similar to Alternative 1, sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements: cities of Los Angeles, Huntington Park, Bellflower, Paramount, and Artesia, as well as in surrounding cities (i.e., Vernon, Downey, Cerritos, Lakewood, and North Long Beach) (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate individuals displaced and owners of properties affected.

Metro would 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, Alternative 2 would not result in adverse effects related to acquisitions and displacements.

4.3.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Acquisitions

Alternative 3 would affect 172 parcels and require 25 full acquisitions and 188 partial acquisitions (Table 4.3.1). Similar to Alternatives 1 and 2, Alternative 3 property acquisitions would 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).

Full and partial property acquisitions would be required for the same project components as Alternatives 1 and 2, with the exception of tunneling, vents/switches/egress, and underground track. The locations of these acquisitions are shown in Figure 4.3-1 to Figure 4.3-17. Alternative 3 would acquire portions of rail ROWs owned by UPRR and the Ports of Los Angeles and Long Beach. Acquisition of portions of the rail ROW would allow the Project to realign the freight tracks to accommodate the project tracks and allow continued operation of the freight tracks and spurs along the rail ROW.

Displacements

Business Displacements: Similar to Alternatives 1 and 2, business displacements would be required to accommodate project-related facilities, including aerial structures, stations, TPSS sites, and grade crossings. Alternative 3 would displace approximately 65 businesses and approximately 352 employees (Table 4.3.3 and Table 4.3.4).

Residential Displacements: Similar to Alternatives 1 and 2, full acquisitions and partial acquisitions of residential properties would be required to accommodate the aerial structure columns, grade crossings, aerial crossings, track alignment, parking facilities, and other ancillary facilities. Alternative 3 would result in the same number of residential property acquisitions and displaced residents as Alternatives 1 and 2: 6 full acquisitions and 15 partial acquisitions of residential properties that would affect a total of 21 residential properties and displace approximately 78 residential occupants (Table 4.3.5). Residential displacement would occur in the Cities of Los Angeles, Huntington Park, Bellflower, Paramount, and Artesia (Table 4.3.6).

Replacement and Relocation

Business Relocation: Similar to Alternatives 1 and 2, replacement sites would be available for displaced businesses; however, a sufficient number of comparable replacement sites may not be available within displacement cities for the automotive businesses and nursery property in the City of South Gate (Table 4.3.7). Alternative 3 would avoid the displacement and relocation of automotive businesses in the City of Los Angeles that would be affected under Alternatives 1 and 2. Refer to the subheading “Replacement and Relocation” in Section 4.3.3.2 for additional information on relocation of displaced businesses. Refer to Section 4.3.3.8 for additional information on special relocation considerations.

Residential Replacement: Similar to Alternatives 1 and 2, sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements: the Cities of Los Angeles, Huntington Park, Bellflower, Paramount, and Artesia, as well as in surrounding cities (i.e., Vernon, Downey, Cerritos, Lakewood, and North Long Beach) (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees.

Metro would 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, Alternative 3 would not result in adverse effects related to acquisitions and displacements.

4.3.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Acquisitions

Alternative 4 would affect 59 parcels and require 17 full acquisitions and 54 partial acquisitions (Table 4.3.1). Alternative 4 property acquisitions would be located in the Cities of South Gate, Paramount, Bellflower, Artesia, and Cerritos (Table 4.3.2). Full and partial property acquisitions would be required for the same project components as the other alternatives with the exception of tunneling, vents/switches/egress, and underground track. The locations of these acquisitions are shown in Figure 4.3-1 to Figure 4.3-17. Alternative 4 would acquire portions of rail ROWs owned by UPRR, which would allow the Project to realign the freight tracks to accommodate the project tracks and allow continued operation of the freight tracks and spurs along the rail ROW.

Displacements

Business Displacements: Similar to the other alternatives, Alternative 4 would require displacement of businesses to accommodate project-related facilities, including aerial structures, stations, TPSS sites, and grade crossings. Alternative 4 would displace approximately 18 businesses and approximately 115 employees (Table 4.3.3 and Table 4.3.4).

Residential Displacements: Similar to the other alternatives, full and partial acquisitions of residential properties would be required to accommodate the aerial structure columns, grade crossings, aerial crossings, track alignment, parking facilities, and other ancillary facilities. Alternative 4 would require the fewest displacements: 2 full acquisitions and 6 partial acquisitions of residential properties that would affect a total of 8 residential properties and displace approximately 32 residential occupants (Table 4.3.5). Residential displacement would occur in the Cities of Bellflower, Paramount, and Artesia (Table 4.3.6).

Replacement and Relocation

Business Relocation: Replacement sites would be available for displaced businesses for Alternative 4 (Table 4.3.7). Unless there is a significant change in vacancy rates at the time of acquisition, sufficient replacement sites to relocate the displaced businesses is anticipated.

Residential Replacement: Similar to the other Build Alternatives, sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements: the Cities of Bellflower, Paramount, and Artesia (Table 4.3.8). Unless there is a

significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate individuals displaced and owners of properties affected.

Metro would 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, Alternative 4 would not result in adverse effects related to acquisitions and displacements.

4.3.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD

Acquisitions: Design Option 1 would affect 12 parcels and require 20 partial acquisitions; no full acquisitions would be required (Table 4.3.1 and Table 4.3.2). Design Option 1 would also require permanent underground easements for the tunnel alignment at LAUS; these acquisitions would be similar to those identified for Alternative 1 without the design option.

Displacements: Design Option 1 would be located primarily underground east of the existing MWD building and would not displace businesses or residential units (Table 4.3.3 through Table 4.3.6).

Replacement and Relocation: Design Option 1 would be located primarily underground behind the existing MWD building and would not displace businesses or residential units that would require replacement or relocation.

Design Option 2: Add Little Tokyo Station

Acquisition: Design Option 2 would affect 4 parcels and require 1 full acquisition and 8 partial acquisitions (Table 4.3.1 and Table 4.3.2). Permanent underground easements would also be required for the underground station box and entrances.

Displacements: Under Design Option 2, the Little Tokyo Station would be constructed and would displace 1 additional commercial retail business and approximately 23 employees compared to Alternative 1 (Table 4.3.3 and Table 4.3.4). No residential displacements would occur (Table 4.3.5 and Table 4.3.6).

Replacement and Relocation: As discussed for Alternative 1 under the heading “Replacement and Relocation” in Section 4.3.3.2, the abundance of replacement sites currently available relative to the number of anticipated displacements suggests that replacement sites would be available to accommodate the business displacement (Table 4.3.7). No residential units would be displaced.

Metro would 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, Design Options 1 and 2 would not result in adverse effects related to acquisitions and displacements.

4.3.3.7 Maintenance and Storage Facilities

Paramount MSF Site Option

Acquisition: The Paramount MSF site option would affect 43 parcels and require 3 full acquisitions and 44 partial acquisitions (Table 4.3.1 and Table 4.3.2). The Paramount MSF

site option is currently developed with the Paramount Swap Meet, Paramount Drive-in Theatre, retail, and commercial parking.

Displacements: The Paramount MSF site option would displace 5 existing businesses (retail and industrial manufacturer businesses), including the Paramount Swap Meet and Paramount Drive-in Theatre (Table 4.3.3 and Table 4.3.4). Approximately 113 employees would be affected and displaced by this MSF site option. The proposed site for the Paramount MSF site option does not contain residential units. However, lead tracks to the Paramount MSF site option would affect residential properties: 1 full acquisition and 6 partial acquisitions for a total of 7 affected residential properties (Table 4.3.5 and Table 4.3.6). A total of approximately 28 residential occupants would be displaced.

Replacement and Relocation: Replacement sites would be available to accommodate the retail and industrial businesses affected by the Paramount MSF site option. However, comparable replacement sites may not be available for the drive-in theater and swap meet and they may not be able to relocate within the city or within 6 miles of the affected businesses. Currently, an insufficient number of potential replacement sites for sale or lease exist to accommodate these types of business displacements and they may not be able to successfully relocate (Table 4.3.7).

Sufficient residential replacement sites for sale and rent are currently available in the City of Paramount (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate individuals displaced and owners of properties affected. Refer to Section 4.3.3.8 for additional information on special relocation considerations.

Bellflower MSF Site Option

Acquisition: The Bellflower MSF site option would impact 2 parcels and result in 2 full acquisitions (Table 4.3.1 and Table 4.3.2). The Bellflower MSF site option is currently developed with the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business.

Displacements: The Bellflower MSF site option would displace two existing businesses, the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business, affecting and displacing approximately 75 employees (Table 4.3.3 and Table 4.3.4). The proposed site for the Bellflower MSF site option does not contain residential units; therefore, no residential displacements would occur (Table 4.3.5 and Table 4.3.6).

Replacement and Relocation: Comparable replacement sites may not be available for the Hollywood Sports Park and Bellflower BMX commercial businesses and they may not be able to relocate within the city or within 6 miles of the affected business (Table 4.3.7). Currently, an insufficient number of potential replacement sites for sale or lease exist to accommodate these types of displacements and they may not be able to successfully relocate. Based on the size and specialized use of the Hollywood Sports Park and Bellflower BMX commercial businesses, it would 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 would not be feasible. The search could be expanded to Orange or Riverside Counties, but relocating the business a long distance from the displacement site would 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 would not be feasible. No residential units would be displaced. Refer to Section 4.3.3.8 for additional information on special relocation considerations.

Metro would 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 Paramount and Bellflower MSF site options would not result in adverse effects related to acquisitions and displacements.

4.3.3.8 Special Relocation Considerations

Special relocation considerations for this Project are primarily related to the number of commercial and industrial displacements anticipated and the potentially limited number of replacement sites available. As discussed in Sections 4.3.3.2 and 4.3.3.7, special relocation conditions include the nursery in the City of South Gate, the drive-in theater and swap meet in the City of Paramount, and the paintball and BMX businesses 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 would need to be sought outside the immediate community and could result in loss of jobs for workers who would be unable to move or commute to the replacement business location.

In addition to the number of displacements identified, a number of complex relocations are anticipated, such as potential displacements with extensive personal property that must be relocated, 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). Additionally, complexity could arise by nature of large companies with many employees whose schedules must be coordinated to accommodate the move. The number and complexity of relocations expected to result from the Project 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 Project.

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.

Phasing acquisition and relocation activities would limit the number of industrial and commercial businesses affected at the same time and would 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. Phasing acquisition and relocation activities in strategic areas could allow for a higher percentage of businesses to relocate successfully. Ideally, replacement sites would be close enough to a business' current location to minimize burdens on employees who would 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 would 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 would 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 would provide relocation assistance and compensation for all displaced businesses and residences as required under the Uniform Act and California Relocation Act. Where acquisitions and relocation are unavoidable, the FTA and Metro would follow the provisions of both Acts, as amended. All real property acquired by Metro would be appraised to determine its fair market value. Just compensation would not be less than the approved appraisal for all real property acquired by Metro or utilized temporarily during construction. Each business and residence displaced as a result of the Project would be given advance written notice and would be informed of their eligibility for relocation assistance and payments under the Uniform Act. For relocated businesses, jobs would also be relocated and would not be permanently displaced. However, permanent job losses may be anticipated. To address potential permanent job loss, Metro will also coordinate with the appropriate jurisdictions regarding business relocation.

4.3.4 Project Measures and Mitigation Measures

Metro would 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 4.3.3.8). No project measures or mitigation measures are required for Alternatives 1, 2, 3, and 4.

4.3.5 California Environmental Quality Act Determination

4.3.5.1 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would affect 220 parcels and require 37 full acquisitions and 254 partial acquisitions (Table 4.3.1). Property acquisitions for Alternative 1 would 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). Alternative

1 would displace approximately 89 businesses (including automotive services, commercial retail, industrial/manufacturing, plant nursery, office) and approximately 601 employees (Table 4.3.3 and Table 4.3.4). Alternative 1 would require 6 full acquisitions and 15 partial acquisitions of residential properties that would affect 21 residential properties and displace approximately 78 residential occupants (Table 4.3.5 and Table 4.3.6). The business and residential acquisitions, displacements, and relocations associated with Alternative 1 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 would be available in the future. However, a sufficient number of comparable replacement sites may not be available within displacement cities for select businesses. The automotive businesses in the City of Los Angeles and City of South Gate and nursery in the City of South Gate may struggle to find a suitable replacement site to lease at the time of acquisition and may not be able to successfully relocate (Table 4.3.7).

At the time of this report, replacement sites for residential properties that are for sale or lease were identified in the affected cities and surrounding cities (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees and construction of new residences would not be required. Therefore, displacement of residential units and their occupants or businesses and their employees would not necessitate the construction of replacement housing or business; impacts would be less than significant; and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 would impact 283 parcels and require 38 full acquisitions and 309 partial acquisitions (Table 4.3.1). Similar to Alternative 1, Alternative 2 property acquisitions would 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). Alternative 2 would displace approximately 108 businesses (including automotive services, commercial retail, industrial/manufacturing, plant nursery, office, and restaurants) and approximately 687 employees (Table 4.3.3 and Table 4.3.4). Alternative 2 would result in the same number of residential property acquisitions and displaced residents as Alternative 1: 6 full acquisitions and 15 partial acquisitions that would affect 21 residential properties and displace approximately 78 residential occupants (Table 4.3.5 and Table 4.3.6). The business and residential acquisitions, displacements, and relocations associated with Alternative 2 are detailed in Section 4.3.3.3.

As discussed for Alternative 1, replacement sites for displaced businesses would be available in the future. However, the automotive businesses in the City of South Gate may not be able to successfully relocate within their respective city, although a sufficient number of replacement sites are available within 6 miles of the affected location. The nursery property may struggle to find a suitable replacement site for sale or lease within the city and within 6 miles of the business at the time of acquisition and may not be able to successfully relocate (Table 4.3.7).

Similar to Alternative 1, sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees and construction of new residences would not be required. Therefore, displacement of residential units and their occupants or businesses and

their employees would not necessitate the construction of replacement housing or business; impacts would be less than significant; and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would impact 172 parcels and require 25 full acquisitions and 188 partial acquisitions (Table 4.3.1). Similar to Alternatives 1 and 2, Alternative 3 property acquisitions would be located in the Cities of Los Angeles (from Slauson Avenue), Huntington Park, Cudahy, South Gate, Downey, Paramount, Bellflower, Artesia, and Cerritos, and in unincorporated LA County (Table 4.3.2). Alternative 3 would displace approximately 65 businesses (including automotive services, commercial retail, industrial/manufacturing, plant nursery, and office) and approximately 352 employees (Table 4.3.3 and Table 4.3.4). Alternative 3 would result in the same number of residential property acquisitions and displaced residents as Alternatives 1 and 2: 6 full acquisitions and 15 partial acquisitions that would affect 21 residential properties and displace approximately 78 residential occupants (Table 4.3.5 and Table 4.3.6). The business and residential acquisitions, displacements, and relocations associated with Alternative 3 are detailed in Section 4.3.3.4.

As discussed for Alternatives 1 and 2, replacement sites for displaced businesses would be available in the future. However, the automotive businesses in the City of South Gate may not be able to successfully relocate within their respective city, although a sufficient number of replacement sites are available within 6 miles of the affected location. The nursery property may struggle to find a suitable replacement site for sale or lease within the city and within 6 miles of the business at the time of acquisition, and may not be able to successfully relocate (Table 4.3.7). Sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements (Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees, and construction of new residences would not be required. Therefore, displacement of residential units and their occupants or businesses and their employees would not necessitate the construction of replacement units; impacts would be less than significant; and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would impact 59 parcels and require 17 full acquisitions and 54 partial acquisitions (Table 4.3.1). Similar to Alternatives 1, 2, and 3, Alternative 4 property acquisitions would be located in the Cities of South Gate, Paramount, Bellflower, Artesia, and Cerritos (Table 4.3.2). Alternative 4 would displace approximately 18 businesses (including automotive services, commercial retail, industrial/manufacturing, and office) and approximately 115 employees (Table 4.3.3 and Table 4.3.4). Alternative 4 would result in a fewer number of residential property acquisitions and displaced residents compared to Alternatives 1, 2, and 3: 2 full acquisitions and 6 partial acquisitions of residential properties that would affect 8 residential properties and displace approximately 32 residential occupants (Table 4.3.5 and Table 4.3.6). The business and residential acquisitions, displacements, and relocations associated with Alternative 4 are detailed in Section 4.3.3.5.

Replacement sites for displaced businesses would be available in the future for Alternative 4. Sufficient residential replacement sites for sale and rent are currently available in cities that would have residential displacements (Table 4.3.7 and Table 4.3.8). Unless there is a significant change in vacancy rates at the time of acquisition, there would likely be sufficient replacement sites to relocate all displacees. Therefore, displacement of residential

units and their occupants or businesses and their employees would not necessitate the construction of replacement units, impacts would be less than significant, and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: Design Option 1 would impact 12 parcels and require no full acquisitions and 20 partial acquisitions (Table 4.3.1 and Table 4.3.2). Permanent underground easements would be needed for tunneling activities in the LAUS for Design Option 1. Similar to LAUS (Forecourt), Design Option 1 would be located primarily underground and would not require the acquisition of businesses or residential units. Design Option 1 would not displace businesses or residential units. Therefore, impacts would be less than significant and mitigation would not be required.

Design Option 2: Add Little Tokyo: Design Option 2 would impact 4 parcels and require 1 full acquisition and 8 partial acquisitions (Table 4.3.1 and Table 4.3.2). Permanent underground easements for the underground station box and station entrances would be required. Design Option 2 would add the underground Little Tokyo Station and may displace one additional commercial retail business and approximately 23 employees (Table 4.3.3 and Table 4.3.4). As discussed for Alternative 1, replacement sites are currently available relative to the number of anticipated displacements (Table 4.3.7). No residential units would require replacement or relocation. Therefore, impacts would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option: The Paramount MSF site option is currently developed with the Paramount Swap Meet, the Paramount Drive-in Theatre, retail, and commercial parking. The Paramount MSF site option would impact 43 parcels and require 3 full acquisitions and 44 partial acquisitions (Table 4.3.1 and Table 4.3.2). The Paramount MSF site option would displace 5 existing businesses (retail and industrial manufacturer businesses), including the Paramount Swap Meet and Paramount Drive-in Theatre. Approximately 113 employees could be affected and displaced by this MSF site option (Table 4.3.3 and Table 4.3.4). The proposed site for the Paramount MSF site option does not contain residential units. However, lead tracks to the Paramount MSF site option would affect residential properties: 1 full acquisition and 6 partial acquisitions for a total of 7 affected residential properties. A total of approximately 28 residential occupants would be displaced (Table 4.3.5 and Table 4.3.6).

Replacement sites would be available in the future for the industrial business affected by the Paramount MSF site option. However, comparable replacement sites may not be available for the drive-in and swap meet and they may not be able to relocate within the city or within 6 miles of the affected businesses. Currently, an insufficient number of potential replacement sites for sale or lease exist within the city or within 6 miles of the affected property to accommodate these types of displacements and they may not be able to successfully relocate (Table 4.3.7). Sufficient residential replacement sites for sale and rent are currently available in the City of Paramount (Table 4.3.8). Therefore, the displacement of residential units and their occupants or businesses and their employees would not necessitate the construction of replacement units, impacts would be less than significant, and mitigation would not be required.

Bellflower MSF Site Option: The Bellflower MSF site option is currently developed with the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business. The Bellflower MSF site option would impact 2 parcels and require 2 full acquisitions and no partial

acquisitions (Table 4.3.1 and Table 4.3.2). The Bellflower MSF site option would displace 2 existing businesses, the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business, displacing approximately 75 employees (Table 4.3.3 and Table 4.3.4). The proposed site for the Bellflower MSF site option does not contain residential units; therefore, no residential displacements would occur with this option.

Comparable replacement sites may not be available for the Hollywood Sports Park and Bellflower BMX commercial businesses and they may not be able to relocate within the city or within 6 miles of the affected business (Table 4.3.7). Currently, an insufficient number of potential replacement sites for sale or lease exist to accommodate these types of displacements and they may not be able to successfully relocate. Based on the size and specialized use of the Hollywood Sports Park and Bellflower BMX commercial business, it would 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 would not be feasible. The search could be expanded to Orange or Riverside Counties, but relocating the business a long distance from the displacement site would 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 would not be feasible. Therefore, the displacement of residential units and their occupants or businesses and their employees would not necessitate the construction of replacement units, impacts would be less than significant, and mitigation would not be required.

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 and Build Alternatives, including design options and the MSF site options. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Visual and Aesthetic Impact Analysis Report* (Metro 2021o) (Appendix I).

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 California Department of Transportation (Caltrans) *State Scenic Highways Program* (Caltrans 1963). Regional regulations include Metro's MRDC (Metro 2020h); *Metro Art Program Policy* (Metro 2020g); *Metro Standard/Directive Drawings* (Metro 2017d); *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 consists of the localized viewsheds for the Build Alternatives. 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 Project includes areas encompassing the proposed alignments and stations, areas acquired for project-related infrastructure (e.g., TPSSs, parking facilities, and MSF), adjacent parcels, and any additional parcels that would have views of and across the proposed alignments and project-related infrastructure. The Affected Area for visual also includes adjacent street rights-of-way that parallel, intersect, or face the Build Alternatives.

To satisfy NEPA requirements, the visual and aesthetic impact analysis follows principles contained in the Federal Highway Administration's (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 project components.

Primary viewer groups within the Affected Area for visual (along and surrounding the proposed alignments 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 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 Build Alternatives.

To determine the Build Alternatives' overall effect on visual quality, the components of each Build Alternative 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. Project 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 Build Alternatives 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, aesthetics impacts were analyzed in accordance with CEQA Guidelines. Based on the CEQA Guidelines Section 15387 definition of an urbanized area, the jurisdictions within the Affected Area for visual are considered urbanized areas, and a significant impact would occur if the Build Alternatives would conflict with applicable zoning and other

regulations governing scenic quality. Significant impacts related to light and glare would occur if the Project results 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 280 and 260 feet above mean sea level around LAUS and 8th Street/Figueroa Street (City of Los Angeles), respectively, to approximately 50 feet around South Street/PEROW (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. Higher-density development with a mix of high-, mid-, and low-rise structures is generally found north of the I-10 freeway, while lower-density development consisting of primarily low-rise structures is located south of the I-10 freeway. Transportation corridors include roadways, freeways (i.e., US-101, I-10, I-710, I-105, State Route [SR]-91 and I-605), and freight rail (i.e., the Wilmington Branch, La Habra Branch, San Pedro Subdivision, and PEROW). 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-10, I-710, SR-91, and I-605 freeways are elevated on columns or engineered fill, and the US-101 and I-105 freeways are 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 plazas, public art, and park areas that contribute to the distinct visual character of the Affected Area. Table 4.4.1 summarizes the notable scenic resources identified in the Affected Area for visual for each Build Alternative. No scenic resources are located within the Affected Area for visual for the MSF site options.

Rancho Los Amigos – South Campus in the City of Downey was previously determined eligible for the National Register of Historic Places and listed in the California Register of Historical Places; however, the site is not considered a scenic resource because views of this property are not visual assets to the surrounding community. Existing views of the campus include remnants of vacant dormitories and ancillary buildings, as well as other weed-filled vacant areas. Separately, the City of Cerritos identifies Navens Horse Stable at 10755½ Artesia Boulevard as a potential historic and cultural property that is within the viewshed of the PEROW. However, this property is not considered a scenic resource for the purpose of this visual and aesthetic analysis due to the use of corrugated metal roofs and various materials for the walls of the horse stables, both of which contribute to the incoherent and disorderly appearance of the property.

Table 4.4.1. Scenic Resources in Affected Area for Visual

	Scenic Resource	Historical Significance	Sensitive Viewers
Alternative 1	Los Angeles Union Station 800 N Alameda St, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #101 	Residents north of LAUS, visitors/tourists
	El Pueblo de Los Angeles Historical Monument (Los Angeles Historic District) 125 Paseo de la Plaza, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register 	Residents north of LAUS; visitors/tourists
	Plaza Substation¹ 125 Paseo de la Plaza, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register 	Visitors/tourists
	Los Angeles Plaza Park¹ 125 Paseo de la Plaza, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #64 	Visitors/tourists
	Father Serra Park¹ 125 Paseo de la Plaza, Los Angeles	<ul style="list-style-type: none"> ▪ N/A 	Residents north of LAUS, visitors/tourists
Alternative 2	Barker Brothers Building 800 W 7th St, Los Angeles	<ul style="list-style-type: none"> ▪ City of LA HCM #356 	Visitors/tourists
	Southern California Gas Company Complex 800-830 S Flower St, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #789 	Building residents, visitors/tourists
	Hamburger's Department Store 801 S Broadway, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #459 	Building residents, visitors/tourists
	Union Bank and Trust Building 760 S Hill St, Los Angeles	<ul style="list-style-type: none"> ▪ City of LA HCM #1030 	Building residents, visitors/tourists
	Tower Theater 802 S Broadway, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ Broadway Theater District Contributor ▪ City of LA HCM #450 	Building residents, visitors/tourists
	Garment Capitol Building 217 E 8th St, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #930 	Visitors/tourists
	Textile Center Building 315 E 8th St, Los Angeles	<ul style="list-style-type: none"> ▪ National Register ▪ California Register ▪ City of LA HCM #712 	Building residents, visitors/tourists

	Scenic Resource	Historical Significance	Sensitive Viewers
Alternatives 1 and 2	Fred Roberts Recreation Center 4700 S. Honduras St, Los Angeles	N/A	Residents west of Honduras St, visitors
Alternatives 1, 2, and 3	Salt Lake Park 3401 E. Florence Ave, Huntington Park	N/A	Visitors
	Los Angeles River Truss Bridge City of South Gate	Eligible for National Register and California Register	Residents
	Hollydale Community Park 12221 Industrial Ave, South Gate	N/A	Residents, visitors to the park
Alternatives 1, 2, 3, and 4	“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	Eligible for National Register and California Register	Visitors
	“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
	Valley Christian Junior High and High Schools 17700 Dumont Ave, Cerritos	Potential local historic property	No sensitive viewers
	Rosewood Park 17715 Eric Ave, Cerritos	Potential local historic property	Visitors
	Artesia Historical Museum (Frampton/Dantema House) 18648-18698 Alburdis Ave, Artesia	In locally designated Artesia Historic District	Nearby residents, visitors
	Old Station #30 18641 Corby Ave, Artesia	In locally designated Artesia Historic District	Nearby residents, visitors

Source: Metro 2021o; City of Los Angeles 2018b; City of Paramount 2019; City of Cerritos 2019

Notes: HCM = Historic-Cultural Monuments; LA = Los Angeles; LAUS = Los Angeles Union Station; N/A = not applicable;

¹ Also identified as El Pueblo de Los Angeles Historical Monument

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: Downtown Low-Rise and Mid-Rise Landscape Unit, Downtown Mid-Rise and High-Rise Landscape Unit, Industrial Landscape Unit, Residential Landscape Unit, Industrial and Residential Landscape Unit, Suburban Residential Landscape Unit, and Suburban Residential and Industrial Landscape Unit. Each landscape unit has a distinct, but not necessarily homogenous, visual character.

Figure 4.4-1 and Figure 4.4-2 identify 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 options within the Affected Area for visual.

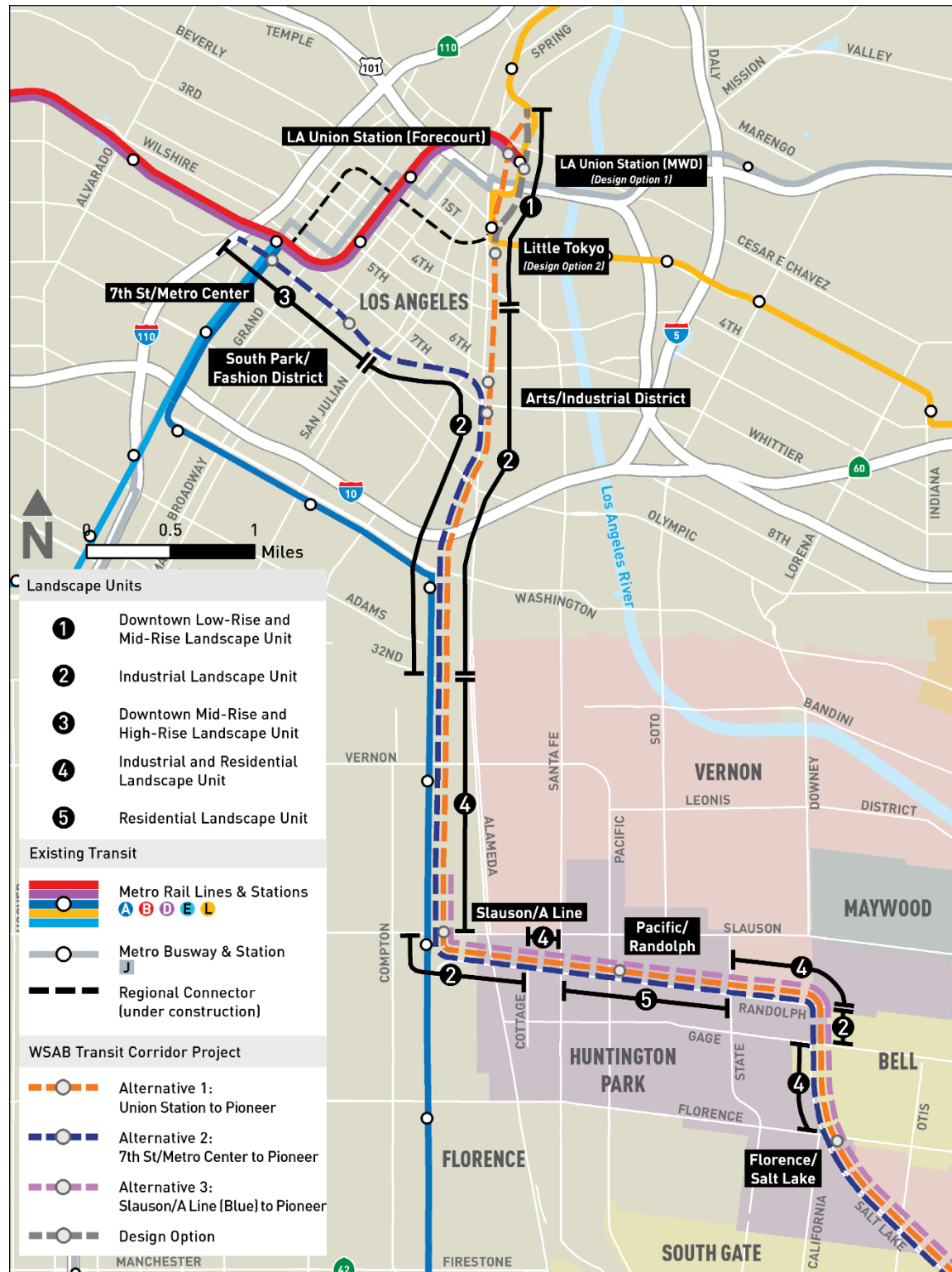
4.4.2.4 Light

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. 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 property, 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. Structures along 8th Street, west of Flower Street, consist of buildings comprised of glass walls and non-reflective surfaces. In all other portions of the Affected Area for visual, the majority of existing structures 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.

Figure 4.4-1. Landscape Units North of Florence Avenue/Salt Lake Avenue



Source: Metro 2021o

Figure 4.4-2. Landscape Units South of Florence Avenue/Salt Lake Avenue



Source: Metro 2021o

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
Downtown Low Rise and Mid-Rise	<p>Visual Character: Mix of low- and mid-rise structures with one high-rise structure; higher density development generally west of Alameda Street, while lower density development generally east of Alameda Street; small and mid-size commercial structures; high-rise and mid-rise office buildings; residential uses generally in mid-rise buildings; institutional, cultural, and industrial uses generally in low-rise structures; amount and types of ornamental landscaping varies with moderate to high levels of landscaping north of US-101, low levels of landscaping between US-101 and 1st Street, and moderate levels of landscaping south of 1st Street.</p> <p>Scenic Resources: LAUS, El Pueblo de Los Angeles Historical-Cultural Monument</p> <p>Visual Quality: Some areas can be characterized as harmonious, orderly, and/or coherent, but the overall existing visual quality is inharmonious, disorderly, and incoherent.</p>	Residents, employees, visitors/tourists, motorists, pedestrians
Industrial	<p>Visual Character: Mix of large-, mid-, and small-scale industrial development with a limited amount of commercial and residential structures; primarily low-rise structures; limited amount of mid-rise structures (generally north of the I-10 freeway); 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.</p> <p>Scenic Resources: Hollydale Community Park, Valley Christian Junior High and High Schools</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent</p>	Residents, employees, users of Hollydale Community Park, staff and students of Valley Christian Junior High and High Schools, motorists, pedestrians
Downtown Mid-Rise and High-Rise	<p>Visual Character: Primarily mid-rise and high-rise structures with a few low-rise structures; commercial business offices and residential lofts primarily within mid-rise and high-rise buildings, retail uses are generally on the ground floor of these structures; many buildings are built up to the street right-of-way and have transparent storefront windows and doorways on the ground floor; scale and massing generally higher around Figueroa Street/8th Street and decreases toward the easterly portion of the landscape unit; modern buildings consisting of clean lines and shapes and are generally clustered west of Olive Street (although some historical structures are interspersed among modern buildings), while older buildings with ornate designs are generally located east of Olive Street; buildings east of Main Street generally vary in color; landscaping generally limited to street trees.</p> <p>Scenic Resources: Barker Brothers Building, Southern California Gas Company Complex, Hamburger’s Department Store, Union Bank and Trust Building, Tower Theater, Garment Capitol Building, Textile Center Building</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent</p>	Residents, employees, visitors/tourists, motorists, pedestrians

Landscape Unit	Existing General Visual Character, Scenic Resources, and Overall Visual Quality ¹	Primary Viewer Groups
Industrial and Residential	<p>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 are 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 south of 57th Street, freight tracks are at-grade, while the Metro A (Blue) Line transitions to an elevated railway.</p> <p>Scenic Resources: Fred Roberts Recreation Center and Salt Lake Park</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent</p>	Residents, employees, users of Fred Roberts Recreation Center, users of Salt Lake Park baseball field and Huntington Park Community Center, motorists, pedestrians
Residential	<p>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.</p> <p>Scenic Resources: None</p> <p>Visual Quality: Some areas can be characterized as harmonious, orderly, and/or coherent, but the overall existing visual quality is inharmonious, disorderly, and incoherent.</p>	Residents, employees, motorists, and pedestrians
Suburban Residential and Industrial	<p>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 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 the 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.</p> <p>Scenic Resources: Los Angeles River Truss Bridge, “Defiance” public art sculpture Paramount Park</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent</p>	Residents, employees, users of Paramount Park, staff and students at Paramount High School, motorists, pedestrians

4 Affected Environment and Environmental Consequences

Landscape Unit	Existing General Visual Character, Scenic Resources, and Overall Visual Quality ¹	Primary Viewer Groups
Suburban Residential	<p>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 PEROW between San Pedro Subdivision ROW and Paramount Boulevard/Rosecrans Avenue intersection; Bellflower Bike Trail within rail ROW provides consistent landscaping and pedestrian-scale lighting.</p> <p>Scenic Resources: Original Bellflower Pacific Electric Station, “Belle” public art cow statue, Ruth R. Caruthers Park, Rosewood Park, Artesia Historical Museum, Old Station #30</p> <p>Visual Quality: Some areas can be characterized as harmonious, orderly, and/or coherent, but the overall existing visual quality is inharmonious, disorderly, and incoherent</p>	Residents, employees, users of Bellflower Bike Path and informal equestrian trail, visitors of the Artesia Historical Museum and Old Station #30, motorists, pedestrians
MSF Site Options Paramount (Suburban Residential and Industrial Landscape Unit)	<p>Visual Character: Low-rise commercial and industrial structures, surface parking lots, schools, and a rail ROW adjoin the MSF site; Paramount Swap Meet, drive-in theater, and associated parking on MSF site; views of MSF site limited to All America City Way and through a gated driveway along Somerset Blvd; westerly views of MSF site obstructed by rear of buildings, walls, or landscaping.</p> <p>Scenic Resources: None</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent</p>	Employees, motorists, pedestrians
MSF Site Options Bellflower (Suburban Residential and Industrial Landscape Unit)	<p>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.</p> <p>Scenic Resources: None</p> <p>Visual Quality: Inharmonious, disorderly, and incoherent along Somerset Blvd and PEROW; harmonious, orderly, and coherent along easterly portion of Affected Area</p>	Residents, employees, motorists, pedestrians

Source: Metro 2021o

Notes: LAUS = Los Angeles Union Station; MSF = maintenance and storage facility; ROW = right-of-way; PEROW = Pacific Electric Right-of-Way

¹ “Overall Visual Quality” follows principles contained in the Federal Highway Administration’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 goes 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.

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. While some projects (e.g., Link US and LAUS Forecourt and Esplanade Improvement) would occur at LAUS, a scenic resource in the Affected Area for visual, 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 for the Project.

4.4.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would introduce new visual elements, including new LRT double tracks, overhead catenary system, fences, retaining walls, sound walls (see Mitigation Measure NOI-1 [Soundwalls] in Section 4.7.4.2 of the Noise and Vibration Section), ventilation structures, train control and communication houses, TPSSs, radio towers, 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 system components is included in Appendix C of this Draft EIS/EIR. The MRDC and Standard/Directive Drawings Station or equivalent would be used to design entrances and station amenities to be sensitive to the specific urban context for each station area. The MRDC and Metro *Systemwide Station Design Standards* or equivalent would also be used in the design and selection of landscaping and public art installations to improve the character of the area. In addition, the *Metro Art Program Policy* would be consulted for public art. Proposed elevated or belowground stations would also include elevators, escalators, and stairways.

Alternative 1 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 streets around 14th Street/Long Beach Avenue and 187th and 188th Streets in Artesia, and developing parking facilities. North of 14th Street in downtown Los Angeles, the project alignment would be primarily underground. In this area, visual changes would be limited to station areas where project components would be at the ground level. Alternative 1's effect on visual character and quality would be most visible where the alignment parallels and project components face a street right-of-way and along the Paramount and Bellflower Bike Trails.

Alternative 1 includes the following landscape units: Downtown Low-Rise and Mid-Rise, Industrial, Industrial and Residential, Residential, Suburban Residential and Industrial, and Suburban Residential. The location of each landscape unit is shown in Figure 4.4-1 and Figure 4.4-2 and described in Table 4.4.2. Table 4.4.3 through Table 4.4.8 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 Project was qualitatively categorized as adverse, neutral, or beneficial. The Build Alternative's effects on the visual environment are summarized in the following text.

Downtown Low-Rise and Mid-Rise Landscape Unit: The Downtown Low-Rise and Mid-Rise Landscape Unit is only located in the downtown Los Angeles section of Alternative 1 (north of 4th Street) where Alternative 1 would be primarily underground with components and any potential changes in lighting primarily visible at station areas. Any potential sources of glare would also be from station areas. Sensitive viewers are generally limited to residents and visitors/tourists of the scenic resources within this landscape unit.

Table 4.4.3 summarizes the potential effects to the visual character, viewer sensitivity, and visual quality in the Downtown Low-Rise and Mid-Rise Landscape Unit. Project components would not change the natural topography of the Affected Area for visual and would not alter or obstruct views of scenic resources within this landscape unit. The Affected Area for visual currently has a substantial amount of nighttime lighting, and the level of nighttime lighting would not significantly increase. The effects of glare would be similar to existing conditions. Overall, changes in visual quality for this landscape unit would be neutral since project components would be compatible with the visual character of the Affected Area for visual; viewer groups in this landscape unit would have little to no reaction (low sensitivity) to visual changes associated with project components; and views of scenic resources would not be obstructed. Therefore, adverse visual effects are not expected in this landscape unit.

Industrial Landscape Unit: This landscape unit is located in the Cities of Los Angeles, Huntington Park, Cudahy, South Gate, Downey, and Cerritos, and unincorporated Florence-Firestone. The project alignment in the Industrial Landscape Unit would be primarily underground north of Long Beach Avenue/14th Street and either aerial or 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 proposed parking facility at the I-105/C Line Station area.

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 and Figure 4.4-4 depict the change in visual character and quality on Long Beach Avenue at the I-10 freeway with incorporation of an aerial structure and at the proposed southwesterly driveway to the proposed Firestone Station surface parking lot. Project components would be compatible and fit with the visual character of the Industrial Landscape Unit. Project components would also fit the urban context and would be consistent with the scale and massing of the surrounding structures. The natural topography of the Affected Area for visual would not be altered. The level of nighttime lighting and the effects of glare in the Affected Area for visual would not significantly increase. Viewer sensitivity in this landscape unit would be low as the components would be consistent with and would not detract from the visual character and existing elements of the Affected Area for visual. Given that project components would be visually compatible with the visual character of the Affected Area for visual and viewer sensitivity would be low, the overall change in visual quality would be neutral. Therefore, no adverse visual effects are anticipated in this landscape unit.

Table 4.4.3. Project Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Downtown Low-Rise and Mid-Rise Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Station Areas (Station Entrances i.e., canopies, elevators, escalators, and stairs)</p> <ul style="list-style-type: none"> ▪ LAUS Forecourt ▪ LAUS MWD (Design Option 1) ▪ Little Tokyo Station (Design Option 2) 	<p>Compatible.</p> <p><u>LAUS Forecourt Station:</u></p> <ul style="list-style-type: none"> ▪ Station entrance would be on north side of the LAUS Forecourt surface parking lot, next to a mid-rise multifamily residential development. Station entrance to be in area with low- and mid-rise structures. ▪ Scale and massing would be consistent and fit with visual character and context of Affected Area. <p><u>LAUS MWD Station (Design Option 1):</u></p> <ul style="list-style-type: none"> ▪ Station entrance to be within concourse area of LAUS, adjacent to Metro B/D (Red/Purple) Line Station entrance. ▪ Scale, massing, and character would be consistent and fit with visual character and context of the LAUS concourse area and existing Metro B/D (Red/Purple) Line Station entrance. <p><u>Little Tokyo Station (Design Option 2):</u></p> <ul style="list-style-type: none"> ▪ Two station entrances: 1) at easterly side yard of commercial building on Alameda Street; 2) on LADWP parking lot on southeast side of Alameda St/4th St. Station elements to be consistent with visual character. ▪ Scale, massing, and character would be consistent and fit with visual character and context of residential, commercial, and 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Station entrances would be visible in foreground; would not include features that would detract from visual character and quality of Affected Area. <p>Scenic Resources: Views of scenic resources (i.e., LAUS and El Pueblo de Los Angeles Historical Monument) would not be obstructed; would remain available to sensitive viewers.</p> <p>Lighting: The Affected Area currently has a substantial amount of nighttime lighting. Type and level of lighting at station areas would be similar those that are currently present in the Affected Area. Per MRDC, all light sources at station areas would be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Station elements would be treated so that new sources of glare would not be created and would not affect viewer sensitivity.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visible station elements and lighting levels would be compatible with existing visual character of Affected Area. ▪ Viewer groups would have little to no reaction to the change. ▪ No new sources of glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>industrial character, and the mix of low- and mid-rise structures.</p> <p>Scenic Resources: Station elements would not alter the visual character of scenic resources.</p> <p>Lighting: Lighting not expected to extend beyond station areas. Type and level of lighting would be similar to those that are currently present in the Affected Area and would not affect visual character.</p> <p>Glare:</p> <ul style="list-style-type: none"> ▪ Station areas would follow MRDC or equivalent, Metro’s <i>Systemwide Station Design Standards</i>, and Standard/Directive Drawings. Stainless steel for certain station elements (e.g., columns, railings, and walls), glass art panels, and glass canopies would be used. ▪ Glass canopies would be placed horizontally above the station, and the angle placement of the canopies would not create new sources of glare and would not affect the visual character around the station areas. Based on Metro design criteria and standards, vertical stainless-steel elements and glass art panels would be dulled so that new sources of glare would not be created. 		
<p>LRT Tracks, Tunnels, and TPSS</p>	<p>Compatible. Underground; not visible.</p> <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: Underground; not visible.</p>	<p>Low. Underground; not visible.</p> <p>Scenic Resources: Views of scenic resources would not be altered.</p> <p>Lighting and Glare: Underground; not visible.</p>	<p>Neutral. Underground; not visible.</p>

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
Ventilation Structures and TC&C House	<p>Compatible. Constructed of small buildings that would be compatible with scale, massing, and form of the surrounding low-, mid-, and high-rise structures.</p> <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low. Visible in foreground; would not alter visual character and quality of the Affected Area or alter or obstruct views of scenic resources.</p> <p>Scenic Resources: Views of scenic resources would not be altered.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral. Visual character, quality, views of scenic resources, lighting levels, and effects of glare would not be altered.</p> <ul style="list-style-type: none"> ▪ Viewer groups would have little to no reaction to the change.
Landscape and Billboard Removal	<p>Compatible Landscaping: Although some landscaping would be removed for station entrances, new landscaping would be installed and designed to complement the character of the surrounding environment.</p> <p>Billboard: No billboards present.</p> <p>Scenic Resources: Landscaping (bushes) along the perimeter of LAUS parking lot does not contribute to the unique character of LAUS. The rows of palm trees lining the LAUS driveway and along the LAUS building frontage would not be affected by the station entrance at LAUS.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Noticeable in foreground; existing landscaping to be removed would not contribute to the LAUS character and changes to landscaping would not alter visual character and quality of the Affected Area. <p>Scenic Resources: New landscaping would not alter or obstruct views of scenic resources, and would remain available to sensitive viewers.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character, and quality, views of scenic resources, lighting levels, and effects of glare would not be altered by changes to landscaping. ▪ Sensitive viewers would have little to no reaction to change in landscaping and would not contribute to LAUS' unique character.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Radio Antennas</p>	<p>Compatible. Height consistent with low- and mid-rise structures around proposed radio antennas; would not degrade overall visual character and quality of Affected Area. Scenic Resources: Project component not within viewshed of scenic resources. Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low. Visible in foreground; would not detract from visual character and quality of Affected Area. Scenic Resources: Project component not within viewshed of scenic resources. Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change. ▪ New sources of light and glare would not be created.

OCS Poles, Overhead Wires, Fences and Retaining Walls, Sound Walls, Radio Houses, Aerial Structures, Pedestrian Bridges, Grade-Crossing Modifications, and Street Closures. None proposed in the landscape unit.

Source: Metro 2021o

Notes: LADWP = Los Angeles Department of Water and Power; LAUS = Los Angeles Union Station; LRT = light rail transit; MRDC = Metro Rail Design Criteria; MWD = Metropolitan Water District; OCS = overhead catenary system; TC&C = train control and communication; TPSS = traction power substation

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

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

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Station Areas</p> <ul style="list-style-type: none"> ▪ Arts/Industrial District Station (north of 7th Street for Alt. 1; south of 7th Street for Alt. 2) ▪ Slauson/A Line Station ▪ Firestone Station ▪ Gardendale Station ▪ I-105/C Line Station 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Consistent and fit with character and context of Affected Area with low-rise industrial structures; would not detract from visual character of Affected Area. ▪ Station Area design to be sensitive to specific urban context, pedestrian-oriented and public art to be installed to improve visual character. <p><u>Arts/Industrial District Station (Alts 1 and 2):</u></p> <ul style="list-style-type: none"> ▪ Underground with at-grade station entrances at surface parking areas of industrial properties. Station canopies would be consistent with scale and massing of the surrounding low- and mid-rise structures. <p><u>Slauson/A Line Station:</u></p> <ul style="list-style-type: none"> ▪ Station would be on an aerial structure in area with low-rise structures adjacent to existing aerial Metro A (Blue) Line Slauson Station. ▪ Scale, form, and massing similar to and consistent with existing Metro A (Blue) Line Slauson Station; would not conflict with the surrounding low-rise structures and adjacent Metro A (Blue) Line aerial structure. <p><u>Firestone Station:</u></p> <ul style="list-style-type: none"> ▪ Height of aerial station, including station canopy, would not exceed 47 feet and would not conflict with scale and massing of surrounding low-rise industrial structures. <p>See discussion of “Aerial Structure” for further details about the visual effects.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Station entrances would be visible in the foreground; would not include features that would detract from the visual character and quality of Affected Area. <p><u>Arts/Industrial District Station (Alts 1 and 2), Firestone, and Gardendale:</u></p> <ul style="list-style-type: none"> ▪ Viewer groups would have little to no reaction to changes due to industrial nature of Affected Area. No sensitive viewers are in the Affected Area. <p><u>Slauson/A Line Station:</u></p> <ul style="list-style-type: none"> ▪ Although sensitive viewers (residents) may be adjacent to the proposed station, these viewers and other viewer groups would have little to no reaction to changes due to industrial nature of the Affected Area. <p><u>I-105/C Line Stations:</u></p> <ul style="list-style-type: none"> ▪ Viewer groups and sensitive viewers (residents) would have little to no reaction to changes due to industrial nature of Affected Area. <p><u>I-105/C Line Station Platform for the Metro C (Green) Line:</u></p> <ul style="list-style-type: none"> ▪ No sensitive viewers in Affected Area for the proposed stations. ▪ View duration of proposed station platform would vary based on freeway conditions. Motorists would 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visible elements at station areas, lighting levels, and effects of glare would be compatible with the industrial character and quality of the Affected Area. ▪ Viewer groups would have little to no reaction to the change.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p><u>Gardendale Station:</u></p> <ul style="list-style-type: none"> Height of station canopies and OCS poles and overhead wires would not exceed 20 feet; would be consistent with scale and massing of surrounding uses. <p><u>I-105/C Line Station:</u></p> <ul style="list-style-type: none"> Stations would not exceed 20 feet in height; would be consistent with scale and massing of the surrounding uses and freeway. The new Metro C (Green) Line station platform in the I-105 freeway median would fit with the character and context of the I-105 freeway as a transportation corridor. See discussion of “Surface Parking Lots,” “Pedestrian Bridges,” and “Bridges” for further details associated visual effects with the Arthur Ave pedestrian bridge and San Pedro Subdivision bridge over the I-105 freeway. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting not expected to extend beyond station areas. Type and level of lighting would be similar to those that are currently present in the Affected Area and would not affect visual character.</p> <p>Glare: See Table 4.4.3. Project components would follow MRDC or equivalent, Metro’s <i>Systemwide Station Design Standards</i>, and Standard/Directive Drawings. Project components would not create new sources of glare and would not affect the visual character around the station areas. Vertical stainless-steel elements and glass art panels would be dulled so that new sources of glare would not be created.</p>	<p>have little to no reaction to change since motorists’ attention and focus are on the road.</p> <ul style="list-style-type: none"> Transit users would be insensitive to view of new I-105/C Line platform as viewer group would expect view of transit station since the Metro C (Green) Line is already located in the I-105 median. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting at station areas would be similar to those that are currently present in the Affected Area. Per MRDC, all light sources at station areas would be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Station elements would be treated so that new sources of glare would not be created and would not affect viewer sensitivity.</p>	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Surface Parking Facilities</p> <ul style="list-style-type: none"> ▪ Firestone Station ▪ I-105/C Line Station 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Fits with character and context of Affected Area and compatible with surrounding industrial uses. No visually prominent features proposed for parking facilities. ▪ Landscaping of parking facilities would be designed per MRDC or equivalent to improve visual quality of the parking facilities. <p>Firestone Station:</p> <ul style="list-style-type: none"> ▪ Existing industrial structures on proposed surface parking lot and wall on north side of San Pedro Subdivision ROW would be removed. ▪ Surface parking facility would minimize the scale and massing of proposed aerial structure as aerial structure would be set back farther from Patata Street than the existing industrial structure currently on the proposed parking facility site. <p>I-105/C Line Station:</p> <ul style="list-style-type: none"> ▪ Removal of existing industrial uses and construction of surface parking facilities would provide partial views of I-105/C Line Station at residential properties on Center St and Industrial Ave. ▪ Minimizes scale and massing of proposed station as station would be set back farther from Center St than the existing industrial structures in Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting would be designed per MRDC or equivalent and would not be expected to extend beyond parking facilities. Type and level</p>	<p>Low</p> <p>Firestone Station:</p> <ul style="list-style-type: none"> ▪ Visible in foreground; consistent with industrial character of Affected Area and would not detract from visual character and quality of Affected Area. No sensitive viewers in Affected Area. <p>I-105/C Line Station:</p> <ul style="list-style-type: none"> ▪ Consistent with visual character of Affected Area. ▪ Sensitive viewers (residents) would have little to no reaction to the changes as parking facilities would be located on industrial properties. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting at parking facilities would be similar to those currently present in the Affected Area. Per MRDC, all light sources at proposed surface parking lots would be directed downward and toward parking lots to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Sources of glare (e.g., parked vehicles) would be similar to existing conditions and would not affect viewer sensitivity.</p>	<p>Neutral</p> <p>Firestone Station:</p> <ul style="list-style-type: none"> ▪ Compatible with industrial character of Affected Area. ▪ Viewers would have little to no reaction to the changes associated with the surface parking facility since the Affected Area is industrial in character. ▪ Lighting levels and effects of glare would be similar to existing conditions and would not affect viewer sensitivity. <p>I-105/C Line Station:</p> <ul style="list-style-type: none"> ▪ Compatible with industrial and residential character of Affected Area. ▪ Viewers would have little to no reaction to the changes associated with the surface parking lots since the Affected Area primarily consist of industrial uses. ▪ Lighting levels and effects of glare would be similar to existing conditions and would not affect viewer sensitivity.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>of lighting would be similar to those that are currently present in the Affected Area and would not affect visual character.</p> <p>Glare: Sources of glare (e.g., parked vehicles) would be similar to existing conditions and are not expected to alter visual character.</p>		
<p>LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ 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 would be consistent with existing utility poles, wires, and tracks; would not conflict with visual character of Affected Area. ▪ PEROW currently has no tracks south of the San Gabriel River; new LRT tracks would be consistent with visual character of the rail corridor, which is currently used as parking for the adjacent industrial uses or contains unmaintained vegetation. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <ul style="list-style-type: none"> ▪ Hollydale Community Park: Views to and from the rail ROW would be limited due to a sound wall that would be placed along the perimeter of the San Pedro Subdivision ROW. ▪ Valley Christian Junior High and High Schools: Views would not be obstructed by the project component; trees in the northerly portion of the schools softens views of the PEROW. 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. ▪ Sensitive viewers would have little to no reaction to visual changes as similar visual elements exist in Affected Area. <p>Scenic Resources: Views of Hollydale Community Park and Valley Christian Junior High and High Schools would not be obstructed.</p> <p>Lighting: No lighting proposed for project components. Lighting from LRVs traveling along LRT tracks would be directed away from residential uses and other light-sensitive uses; LRV lighting would not affect light-sensitive viewers.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Project components would not change the industrial character and quality of the Affected Area. Similar visual elements currently exist in the Affected Area. ▪ Viewer groups would have little to no reaction to the change. Views of Hollydale Community Park and Valley Christian Junior High and High Schools would not be altered or obstructed. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Lighting:</p> <ul style="list-style-type: none"> ▪ No lighting proposed for project components. ▪ North of Somerset Boulevard, light intensity from LRVs traveling along LRT tracks would 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 would 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 proposed LRVs would be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along surrounding streets, which currently produce transportation-related light. <p>Glare: LRVs traveling along tracks not a substantial source of glare. Materials to be used for project components would not create new sources of glare.</p>		
<p>Fences and Retaining Walls</p> <ul style="list-style-type: none"> ▪ 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. 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements in Affected Area; properties facing the rail ROWs currently have fences or walls along the property lines. ▪ Scale of fences and retaining walls would be consistent and fit with the industrial visual character of Affected Area. Fences and a combination of retaining walls and fences along rail ROW would be approximately 6 feet tall. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of the Affected Area as similar elements are in the area. ▪ Sensitive viewers would have little to no reaction to visual changes. <p>Scenic Resources: Views of Hollydale Community Park and Valley Christian Junior High and High Schools would not be obstructed.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Industrial character and quality of Affected Area unchanged as similar visual elements, lighting levels, and sources of glare currently exist. ▪ Viewer groups would have little to no reaction to the change. ▪ Views of Hollydale Community Park and Valley Christian Junior High and

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>High Schools would not be obstructed.</p>
<p>Sound Walls</p> <ul style="list-style-type: none"> ▪ 4-foot-tall sound walls on aerial structures ▪ 8-foot-tall sound walls along at-grade portions of project alignment ▪ See Mitigation Measure NOI-1 (Soundwalls) 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ 4-foot-tall sound walls would be placed on aerial structure south of 21st St/Long Beach Ave. Height of sound wall with aerial structure would be consistent with scale, character, and context of surrounding uses. ▪ Landscape unit has similar visual elements (walls). Scale and massing consistent with surrounding low-rise industrial character and context of the Affected Area. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto adjacent properties.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area as similar visual elements are in area. ▪ Viewer groups would have little to no reaction to the change as sound walls would be in an industrial area with similar visual elements and would obstruct views of project components within rail ROW. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Views of San Pedro Subdivision ROW at Hollydale Community Park would be obstructed by sound wall ▪ Residents across the street from Hollydale Community Park and users of the park would no longer have views of the rail ROW but would continue to have views of the park. <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto areas with light-sensitive users.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Industrial character and quality of Affected Area would not change; sound walls would be at similar scale as surrounding structures and would limit amount of LRV light that spills over onto adjacent properties. ▪ Viewer groups would have little to no reaction to the change as sound walls would be in an industrial area with similar visual elements. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Ventilation Structures, Radio Houses, and TC&C Houses</p>	<p>Compatible.</p> <ul style="list-style-type: none"> Constructed as small buildings; height, massing, and form would be consistent with industrial low- and mid-rise structures in Affected Area and would fit with industrial character; would not degrade overall visual character and quality of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not alter visual character and quality of Affected Area. Viewer groups would have little to no reaction to the change as project component would be in an industrial area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not be altered. Viewer groups would have little to no reaction to change as project component would be in industrial area; buildings consistent with surrounding structures. No new sources of light and glare would be created.
<p>TPSS</p>	<p>Compatible.</p> <ul style="list-style-type: none"> Scale, height, massing, and form consistent with low-rise industrial character of the Affected Area; would not degrade overall visual character and quality of the area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from visual character and quality of Affected Area as similar visual elements are in Affected Area. Located on industrial properties that currently contain transmission towers, or within the rail ROW. No sensitive viewers located in areas with TPSS; viewers would have little to no reaction due to industrial character. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not be altered. Viewer groups would have little to no reaction to the change as TPSSs are proposed on industrial properties that contain transmission towers, or within the rail ROW. No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Radio Antennas</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Radio antennas would fit with industrial character; would not degrade overall visual character and quality of the Affected Area. ▪ 35- to 55-foot-tall radio antennas proposed on Alameda St and Long Beach Ave would be consistent with scale of low- and mid-rise structures surrounding 7th St/Alameda St and low-rise structures along Alameda St and Long Beach Ave. ▪ If 35-foot radio antenna is built at surface parking lot for I-105/C Line Station, antenna would be consistent with scale of low-rise structures in Affected Area. ▪ If 60-foot radio antenna is built, antenna would be taller than surrounding structures, but would be placed close to the San Pedro Subdivision ROW. Antenna would 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 would reduce the scale from residential area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. No sensitive viewers near radio houses. ▪ Residents along Industrial Ave would have little to no reaction to the change; the proposed antenna location next to the San Pedro ROW would reduce its scale from the residential area; antenna would be consistent with industrial character of the Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Industrial character and quality of the Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Aerial Structures</p> <p><u>50 feet in height</u></p> <ul style="list-style-type: none"> I-10 freeway at Long Beach Ave <p><u>32 feet in height (~36 feet with sound walls)</u></p> <ul style="list-style-type: none"> Long Beach Ave Randolph Street (west of Wilmington Avenue) Randolph St/San Pedro Subdivision ROW Meadow Dr to South Gate/Downey City Boundary <p><u>32 feet in height (~47 feet with station canopy):</u></p> <ul style="list-style-type: none"> Ardine St to Rayo Ave (includes Firestone Station) 	<p>Compatible.</p> <p><u>I-10 Freeway at Long Beach Ave:</u></p> <ul style="list-style-type: none"> I-10 freeway aerial structure proposed above the surrounding industrial structures would be taller than I-10 freeway; form and materials of aerial structure would be consistent with character and context of I-10 freeway as a transportation corridor. Would not conflict with industrial character and context of Affected Area would not occur. <p><u>Long Beach Ave and Randolph Street (west of Wilmington Avenue):</u></p> <ul style="list-style-type: none"> Parallel at-grade tracks for Metro A (Blue) Line and freight rail along Long Beach Ave. Supported on columns with retaining walls as structure rises/descends at 14th St/Long Beach Ave and Wilmington Ave/Randolph St. South of 55th Street, aerial structure along Long Beach Ave would parallel existing aerial structure for Metro A (Blue) Line. Straddle bents proposed as aerial structure curves eastward from Long Beach Ave to Randolph St. Similar height, form, massing, and materials as existing aerial structure and surrounding low-rise structures. Structures would fit with industrial character and context of area. <p><u>Randolph St/San Pedro Subdivision ROW:</u></p> <ul style="list-style-type: none"> Aerial structure would be new visual element. Scale and massing for aerial structure would be similar to surrounding low-rise structures and would not conflict with industrial character of Affected Area. 	<p>Low.</p> <ul style="list-style-type: none"> Aerial structures would be visible in foreground; would not detract from industrial character and quality of the landscape unit. No sensitive viewers in the Affected Area. <p><u>I-10 Freeway at Long Beach Ave:</u></p> <ul style="list-style-type: none"> Viewer groups include motorists traveling on I-10 freeway, and motorists and pedestrians on nearby local streets; no sensitive viewers are in the Affected Area. Middle ground view of downtown Los Angeles skyline available to motorists traveling westbound on the I-10 freeway would be partially obstructed. Motorists would not be sensitive to visual changes since view of skyline is at an angle and motorists are focused on driving. Viewer groups would have little to no reaction to changes in visual character due to industrial character of the area and the aerial structure's consistency in visual character and context of I-10 freeway. <p><u>Randolph St/San Pedro Subdivision ROW:</u></p> <ul style="list-style-type: none"> Views of aerial structure would be limited and located to the rear of industrial properties on both sides of rail ROW. 	<p>Neutral.</p> <ul style="list-style-type: none"> Aerial structures would not change industrial character and quality of Affected Area. Views and visual character of I-10 freeway as a transportation corridor would not change, would be consistent with, and would not degrade overall visual character and quality of Affected Area. Viewer groups would have little to no reaction to changes in visual character and quality of the Affected Area. LRV lighting would not alter visual character and would not adversely affect viewer sensitivity. Project component would not create new sources of glare.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p><u>Ardine St to Rayo Ave (including Firestone Station) and Meadow Dr to South Gate/Downey City Boundary:</u></p> <ul style="list-style-type: none"> ▪ Primarily supported by retaining walls; supported by columns at Firestone Station and where San Pedro Subdivision ROW intersects at a street (i.e., Atlantic Ave, Firestone Blvd, Imperial Highway, and Garfield Ave). Aerial structures would be new visual element. ▪ Scale consistent with surrounding low-rise commercial and industrial structures; fits with character and context of Affected Area. ▪ Development of Firestone Station parking facility would allow views of the aerial structure along Patata St and Atlantic Ave. Scale and massing would be consistent with surrounding low-rise structures and would minimize the appearance of the aerial structure as the aerial structure would be set back farther from Atlantic Ave and Patata St than existing industrial structures within the station area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No lighting proposed for aerial structures. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p><u>Long Beach Ave, Randolph St, Ardine St to Rayo Ave, and Meadow Dr to South Gate/Downey City Boundary:</u></p> <ul style="list-style-type: none"> ▪ Where rail ROWs face rears of buildings on both sides, views of aerial structures would be limited. ▪ Where rail ROWs face a street right-of-way, aerial structure would be visible in foreground but would not detract from character and quality of landscape unit due to industrial character of Affected Area. ▪ Viewer groups would have little to no reaction to visual change as aerial structures are in an industrial area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No lighting proposed for project component. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Pedestrian Bridges</p> <ul style="list-style-type: none"> ▪ Arthur Ave over I-105 freeway 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements in Affected Area; two other bridges (San Pedro Subdivision and Grove St bridges) are within 500 feet of Arthur Ave pedestrian bridge. ▪ Reconstructed pedestrian bridge would be compatible in scale, form, and material to existing bridge; would not detract from the visual character of the I-105 freeway. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting would be directed downward and toward pedestrian pathway and would not extend beyond the pedestrian bridge. Lighting would be similar to the type and lighting levels in the Affected Area and would not detract from visual character of the Affected Area.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ No sensitive viewers in the area. Viewer groups would have little to no reaction to this change as pedestrian bridge would be reconstructed at the same location as the existing pedestrian bridge and would be compatible in scale, form, and material as the existing bridge. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting would be directed downward and toward pedestrian pathway, would not extend beyond the pedestrian bridge, and would not affect sensitive viewers and nighttime views of drivers along the I-105 freeway and other roadways.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would remain similar to existing conditions; would not detract from visual character of the I-105 freeway. ▪ Viewer groups would have little to no reaction to changes in visual character and quality of Affected Area. ▪ Lighting along pedestrian bridge would not alter visual character and would not adversely affect sensitive viewers, as well as drivers along I-105 freeway and other roadways. ▪ Project component would not create new sources of glare.
<p>Bridges</p> <ul style="list-style-type: none"> ▪ Rio Hondo River ▪ San Gabriel River ▪ I-105 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale and massing would be larger than existing bridges; however, similar visual elements (i.e., bridges) are located at the flood-control channels and I-105 freeway. ▪ New bridges compatible and fit with visual character and context of the concrete-lined flood-control channels and I-105 freeway. <p>Rio Hondo River: Existing freight bridge over Rio Hondo River would remain; new bridge built for Project would be adjacent to existing bridge.</p> <p>San Gabriel River: Existing bridge over San Gabriel River would be removed; although new</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; viewer groups (motorists on nearby streets) would have little to no reaction to bridges as views are fleeting and viewers' attention and focus are on the road. <p>Rio Hondo River: Angled views of Rio Hondo River bridge available to motorists along Garfield Ave/Imperial Hwy.</p> <p>San Gabriel River: Angled views of bridge over San Gabriel River available</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Consistent with visual character and quality of the Affected Area. ▪ Although proposed bridges over the Rio Hondo and San Gabriel Rivers would be larger than the existing bridges, none of the proposed bridges would degrade the overall visual character and quality of the Affected Area.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>bridge would be larger, reconstructed bridge at San Gabriel River would be similar in location and height of existing bridge, and would fit with visual character of the flood-control channel.</p> <p>I-105 Freeway: Reconstructed San Pedro Subdivision freight bridge over I-105 freeway would replace existing San Pedro Subdivision bridge at the same location. Reconstructed bridge would be similar in location, height, form, and material as the existing bridges over the I-105 freeway (Arthur Ave pedestrian bridge, San Pedro Subdivision bridge, and Grove St bridge). The width may be designed up to 35 feet wide.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No lighting proposed on bridges. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>to motorists along SR-91 freeway and Artesia Blvd.</p> <p>I-105 Freeway: View of reconstructed San Pedro Subdivision bridge over I-105 freeway available to motorists along I-105 freeway; views would be consistent with existing views in the Affected Area. Viewer groups would continue to be exposed to views of three bridges in Affected Area. Number of viewers and duration of view vary based on freeway conditions.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No lighting proposed for bridges. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<ul style="list-style-type: none"> ▪ Viewers would have little to no reaction to the changes associated with the proposed bridges. ▪ LRV lighting would not alter visual character and would not adversely affect sensitive viewers. ▪ Project component would not create new sources of glare.
<p>Undercrossing</p> <ul style="list-style-type: none"> ▪ Firestone Station 	<p>Compatible.</p> <p>Undercrossing to be built under the Firestone Station to connect proposed driveway on Atlantic Ave to the Firestone Station surface parking lot (Figure 4.4-4); consistent with surrounding low-rise industrial structures.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond the undercrossing and would be consistent with industrial character of Affected Area.</p>	<p>Low.</p> <p>No sensitive viewers are in the area. Viewer groups would have little to no reaction to the change since views of the undercrossing would be limited.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No sensitive viewers are in the area. Lighting is not expected to extend beyond the undercrossing and would not affect viewer sensitivity.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Consistent with visual character and quality of the Affected Area. ▪ Viewer groups would have little to no reaction to changes in visual character and quality. ▪ Lighting would not alter visual character and would not adversely affect viewer sensitivity.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Tunnels</p> <ul style="list-style-type: none"> ▪ North of 14th St/Long Beach Ave ▪ I-710 ▪ I-605 	<p>Glare: Materials to be used would not create new sources of glare.</p> <p>Compatible. <u>North of 14th St/Long Beach Ave:</u> Underground; not visible. <u>I-710 Freeway:</u></p> <ul style="list-style-type: none"> ▪ Similar visual elements within the Affected Area; existing tunnel for freight tracks currently located under I-710 freeway; proposed tunnel would be constructed on northeast side of existing tunnel for project tracks. ▪ New tunnel would be narrower than the existing tunnel; form and materials would be similar to the existing tunnel. <p><u>I-605 Freeway:</u></p> <ul style="list-style-type: none"> ▪ No new tunnels proposed under I-605 freeway; Project would use the existing tunnel. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond tunnels and would be consistent with industrial character of Affected Area.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Glare: Materials to be used would not create new sources of glare.</p> <p>Low. <u>North of 14th St/Long Beach Ave:</u> Underground; not visible. <u>I-710 Freeway:</u></p> <ul style="list-style-type: none"> ▪ Views of tunnel generally available on adjacent industrial properties but not on public rights-of-way; would not detract from industrial character of the Affected Area. ▪ Viewer groups would have little to no reaction to visual changes due to industrial character of Affected Area. Sensitive viewers do not have views of proposed tunnel. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond tunnels and would not affect viewer sensitivity.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<ul style="list-style-type: none"> ▪ No new sources of glare would be created. <p>Neutral. <u>North of 14th St/Long Beach Ave:</u> Underground; not visible. <u>I-710 Freeway:</u></p> <ul style="list-style-type: none"> ▪ Consistent with character and quality of Affected Area; would not degrade overall visual character and quality of Affected Area due to limited and/or angled views of tunnels. ▪ Viewer groups would have little to no reaction to the changes in visual character and quality. ▪ Lighting at tunnels would not alter visual character and would not adversely affect viewer sensitivity. ▪ No new sources of glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Landscape and Billboard Removal</p>	<p>Compatible. Landscaping:</p> <ul style="list-style-type: none"> ▪ Existing landscaping in Affected Area limited and/or sporadic. Vegetation on south side of San Pedro Subdivision ROW along Salt Lake Ave would be outside of the project work limits and would remain in place. ▪ Removal of vegetation in rail ROWs would not adversely affect visual character due to limited amount of vegetation along rail ROWs; not expected to adversely affect visual character of Affected Area. <p>Billboard: Billboard in heavily industrialized area; removal would not alter overall visual character and quality of Affected Area.</p> <p>Scenic Resources: Project components would not alter the visual character of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Changes in landscaping and billboard removal would not detract from industrial character and quality of Affected Area as changes would primarily occur within rail ROWs; existing vegetation along rail ROWs does not enhance the view of the Affected Area. ▪ Due to industrial nature of the landscape unit, viewer groups would have little to no reaction to visual changes associated with this project component. ▪ No sensitive viewers and scenic resources are in the Affected Area. <p>Scenic Resources: Project components would not alter views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Changes in landscaping and billboard removal not expected to alter visual character and quality of Affected Area. ▪ Viewer groups would have little to no reaction to the change. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Grade-Crossing Modifications and Street Closures</p>	<p>Compatible. Grade Crossing:</p> <ul style="list-style-type: none"> Consistent with scale, form, and materials of existing grade crossings. Existing grade crossings to be modified at Wilmington Ave and Regent St, which would not allow motorists and pedestrians to cross San Pedro Subdivision ROW. Visual character would be consistent with visual character of industrial area. Where new grade crossings are proposed, project component would be consistent with the visual character of the existing street rights-of-way. <p>Street Closure:</p> <ul style="list-style-type: none"> Street closure at Long Beach Ave north of 14th St and at 14th St west of Long Beach Ave would be consistent with scale, massing, and form of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting would be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect visual character.</p> <p>Glare: Project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; grade-crossing modifications and street closures similar in character as existing grade crossings and would not detract from character and quality of Affected Area. No sensitive viewers and scenic resources are in Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting would be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect viewer sensitivity.</p> <p>Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not be altered. Viewer groups would have little to no reaction to change. Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting. No new sources of glare would be created.

Source: Metro 2021o

Note: MRDC = Metro Rail Design Criteria; LRT = light rail transit; LRV = light rail vehicle; OCS = overhead catenary system; PEROW = Pacific Electric Right-of-Way; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substations

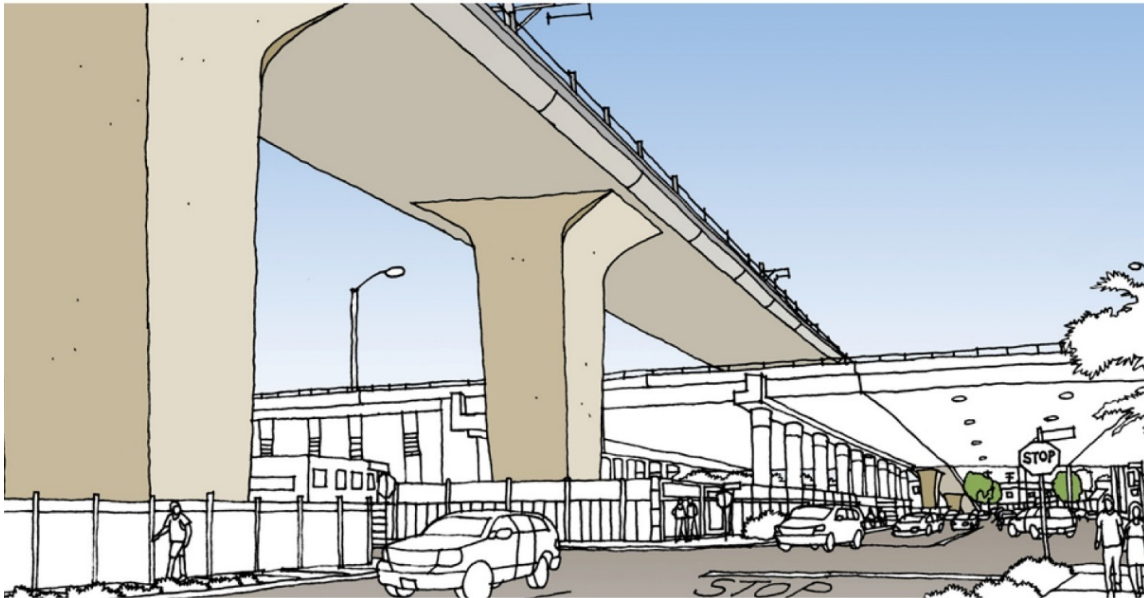
¹ Overall change in visual quality is determined based on 1) whether project components would be visually compatible with the visual character of the Affected Area, and 2) viewer sensitivity associated with the visual changes of the project components.

Figure 4.4-3. Existing and Proposed Views of I-10 Freeway, looking North at Long Beach Avenue

Existing I-10 Freeway



Proposed I-10 Freeway



Source: Prepared for Metro by Cityworks Design in 2019

Figure 4.4-4. Existing and Proposed Views at Atlantic Avenue, looking East toward Proposed Firestone Station Area

Existing Firestone Station



Proposed Firestone Station



Source: Prepared for Metro by Cityworks Design in 2020

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 proposed in this landscape unit. The project alignment within the Industrial and Residential Landscape Unit would 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. Sensitive viewers in the Affected Area for visual for the Industrial and Residential Landscape Unit include residents, users of the Fred Robert Recreation Center, and users of Salt Lake Park.

Table 4.4.5 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Industrial and Residential Landscape Unit. Figure 4.4-5 and Figure 4.4-6 depict the change in visual character and quality of the Affected Area for visual at the 53rd Street pedestrian bridge and on Salt Lake Avenue at the Huntington Park Community Center, respectively. Project components would be compatible and fit with the visual character of the Industrial and Residential Landscape Unit. The components would be designed to fit the urban context and would be consistent with the scale and massing of the surrounding structures. Nighttime lighting levels in the Affected Area for visual would not significantly increase, and the effects of glare would be similar to existing conditions. Viewer sensitivity in this landscape unit would be low as the components would be consistent with and would 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. Alternative 1 would not change the natural topography of the Affected Area for visual and would not alter or obstruct views of scenic resources located within this landscape unit. Given that project components would be visually compatible with the visual character of the Affected Area for visual and viewer sensitivity would be low, the overall change in visual quality for the Industrial and Residential Landscape Unit would be neutral. Therefore, adverse visual effects are not expected in this landscape unit.

Residential Landscape Unit: This landscape unit is located in the Cities of Huntington Park, Cudahy, and South Gate. The project alignment would be primarily at-grade with the surrounding uses in the Residential Landscape Unit. No scenic resources are located in the Residential Landscape Unit, but 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 4.4.6 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Residential Landscape Unit.

Figure 4.4-7 depicts the change in visual character and quality for this landscape unit on Randolph Street. Overall, the change in visual quality in the Residential Landscape Unit would be neutral as the project components would be compatible with the visual character of the Affected Area for visual and viewer sensitivity to project components would be low. Nighttime lighting levels in the Affected Area for visual would not significantly increase, and the effects of glare would be similar to existing conditions. Viewer groups in this landscape unit would have little to no reaction to visual changes associated with the project components. Additionally, Alternative 1 would 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. Project Components' Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Industrial and Residential Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements are in Affected Area: LRT tracks 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. ▪ Scale would be consistent with existing utility poles and wires; would not conflict with visual character of Affected Area (Figure 4.4-5 and Figure 4.4-6) <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting: No lighting proposed for OCS poles, overhead wires, and utility poles. Light intensity from LRVs traveling along LRT tracks 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.</p> <p>Glare: LRVs along tracks not a substantial source of glare. Materials to be used for project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract or obstruct existing views of scenic resources (Fred Roberts Recreation Center and Salt Lake Park). ▪ Sensitive viewers would have little to no reaction to changes associated with project component as similar visual elements exist in Affected Area. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting: No lighting proposed for project components. Lighting from LRVs traveling along LRT tracks would 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, and freight trains along the rail ROWs and would not affect viewer sensitivity.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual quality would remain similar to existing conditions; would not detract from visual character and quality of Affected Area. ▪ Views of scenic resources remain available. Viewers would have little to no reaction to the changes. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Fences and Retaining Walls</p> <ul style="list-style-type: none"> ▪ 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 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Properties facing rail ROWs currently have fences/walls along the property lines; fences and combination of retaining walls and fences along rail ROWs would be 6 feet tall. ▪ Similar visual elements in area; would not degrade overall visual character and quality of the Affected Area. Scale and form would be consistent and fit with mixed industrial and residential character of Affected Area (Figure 4.4-6) <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area as similar visual elements are in area. ▪ Sensitive viewers would have little to no reaction to the fences and walls as similar visual elements already exist in the Affected Area. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Views of Fred Roberts Recreation Center from residential areas would not be obstructed. ▪ 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. Project component would not further obstruct views of the park. ▪ Users of Salt Lake Park and Huntington Park Community Center would see retaining walls with fencing on top instead of parking spaces within San Pedro Subdivision ROW (Figure 4.4-6). Affected Area has similar visual elements. <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Character and quality of Affected Area would not change as similar visual elements currently exist in Affected Area. ▪ Views of Salt Lake Park would remain available. Viewers would have little to no reaction to the change. ▪ Lighting levels similar to existing conditions and would not affect viewer sensitivity. ▪ No new sources of glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Sound Walls</p> <ul style="list-style-type: none"> ▪ 4-foot-tall sound wall on aerial structure along Long Beach Ave and at Randolph St/San Pedro Subdivision ROW ▪ 8-foot-tall sound wall at-grade along Randolph St and Salt Lake Ave ▪ See Mitigation Measure NOI-1 (Soundwalls) 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements in Affected Area as properties facing the rail ROWs currently have walls along the property lines. ▪ Along Long Beach Ave, views of street right-of-way, Wilmington Branch ROW, and uses across from Long Beach Ave would remain unobstructed since sound wall would be on aerial structures that are supported by columns. See “Aerial Structure” for further discussion. ▪ New sound walls at-grade along Randolph St would obstruct views of La Habra Branch ROW and industrial uses across from Randolph St. ▪ Views of San Pedro Subdivision ROW would remain available along Salt Lake Ave (south of Bell Ave) and at Salt Lake Park and Huntington Park Community Center. Views generally would be obstructed at residential uses, including mobile home community, but visible at industrial uses north of Bell Ave. ▪ Scale and massing of sound walls along Randolph St and Salt Lake Ave consistent with surrounding low-rise structures; would fit with mixed industrial and residential character and context of Affected Area. ▪ Sound walls would be at a similar height as the existing walls at on east side of San Pedro Subdivision ROW along Salt Lake Ave; would not detract from existing views and visual character of the Affected Area. ▪ With the placement of sound walls along Randolph St, residences along Randolph St would no longer be able to see industrial uses across from Randolph St and would see a retaining wall within the rail ROW. The scale of 	<p>Low.</p> <p>Visible in foreground; would not detract from industrial and residential character and quality of the Affected Area as similar elements are in Affected Area.</p> <ul style="list-style-type: none"> ▪ Sensitive viewers would have little to no reaction to the change due to mixed industrial and residential character and similar visual elements in the Affected Area. ▪ Sensitive viewers along Randolph St have views of the railroad tracks along the La Habra Branch ROW and industrial uses across from the rail ROW; new views would include a sound wall that would block views of industrial uses. Sound wall would not detract from existing views and visual character of the Affected Area. ▪ Residents on the east side of San Pedro Subdivision ROW would 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. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Sound wall would be on an aerial structure near Fred Roberts Recreation Center; would not obstruct views of the park. ▪ Sound wall would 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 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Mixed industrial and residential character and quality of Affected Area would not change as it would be a similar scale as the surrounding structures. ▪ Viewers would have little to no reaction to the change due to the mixed industrial and residential character. ▪ Sound wall would limit amount of LRV light that spills over onto adjacent properties.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>the aerial structure would be consistent with surrounding low-rise structures.</p> <ul style="list-style-type: none"> ▪ North of Bell Ave, sound wall along Salt Lake Ave would 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 would continue to not be visible at residential area with implementation of sound walls. ▪ South of Bell Avenue, sound walls on Salt Lake Ave (across the street from Salt Lake Park and Huntington Park Community Center), would 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 would remain available along Salt Lake Ave, Salt Lake Park, and Huntington Park Community Center. The sound wall would be at a similar height as the existing walls along the rear of residential properties and would not detract from the existing views and visual character of the Affected Area. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto adjacent properties.</p>	<p>existing walls along the rear property line of adjacent residential properties currently limit views from the residential area (Figure 4.4-6).</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto areas with light-sensitive users.</p>	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Radio Houses and TC&C Houses</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Consist of small buildings; consistent with scale, massing, and form of the surrounding low-rise structures; would not degrade overall visual character and quality of Affected Area; would fit with the mixed industrial and residential character and scale of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not alter visual character and quality of Affected Area. ▪ Sensitive viewers with views of radio houses and TC&C houses would have little to no reaction to the change as these project components would be compatible with scale, massing, and form of surrounding low-rise structures. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not be altered. ▪ Viewer groups would have little to no reaction to the change. ▪ No new sources of light and glare would be created.
<p>TPSS</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale, height, massing, and form consistent with low-rise structures in Affected Area; would not degrade overall visual character and quality of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from mixed industrial and residential character and quality of Affected Area. Located away from Fred Roberts Recreation Center and Salt Lake Park. ▪ Sensitive viewers with views of TPSSs would have little to no reaction to the change as TPSSs are proposed on industrial and commercial properties, and in San Pedro Subdivision ROW; would be similar in scale, massing, and form of surrounding low-rise structures. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Consistent with visual character and quality of Affected Area. ▪ Viewer groups would have little to no reaction to the change as TPSSs are proposed on industrial commercial properties, and within the San Pedro Subdivision ROW. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
		<p>Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	
<p>Radio Antennas</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar components (utility poles) located in Affected Area; would fit with the mixed industrial and residential character of the Affected Area. ▪ 35-foot-tall radio antennas would be consistent with scale of low-rise structures in Affected Area. 55-foot-tall radio antennas would be taller than structures in Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Character and quality of Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change as project component would be consistent with visual character of the Affected Area. ▪ No new sources of light and glare would be created.
<p>Aerial Structures <u>~50 feet in height (~60 feet with sound wall)</u></p> <ul style="list-style-type: none"> ▪ Long Beach Ave at 53rd St pedestrian bridge (from 50th Pl to 55th St) <p><u>~32 feet height (~36 feet with sound wall)</u></p> <ul style="list-style-type: none"> ▪ Long Beach Ave north of 50th Pl and south of 55th St ▪ Randolph St/San Pedro Subdivision ROW 	<p>Compatible Long Beach Ave:</p> <ul style="list-style-type: none"> ▪ Aerial structure would be supported on columns. ▪ Existing aerial structure for Metro A (Blue) Line located along Long Beach Ave south of 55th St and would parallel project alignment. ▪ Height of aerial structure (including the 4-foot-tall sound wall above aerial structure) north and south of 53rd St pedestrian bridge would be consistent with scale of the surrounding low-rise structures and pedestrian bridge. ▪ Aerial structure would be tallest at 53rd St pedestrian bridge (Figure 4.4-5). Although aerial structure would be taller than 53rd St pedestrian bridge and surrounding two-story structures, aerial structure (including sound wall on aerial 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from mixed industrial and residential character and quality of Affected Area. ▪ Along Long Beach Ave, aerial structures would be located on columns. ▪ Sensitive viewers would have little to no reaction to the change as the aerial structure would be consistent with massing and visual character of the Affected Area. <p>Scenic Resources: Views of Fred Roberts Recreation Center would not be obstructed. Aerial structure not proposed within viewshed of Salt Lake Park.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Mixed industrial and residential character and quality of Affected Area would not change. ▪ Viewer groups would have little to no reaction to changes as the aerial structure would be consistent with the visual character of the Affected Area. ▪ LRV lighting would not alter visual character and would not adversely affect sensitive viewers.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>~50 feet in height</p> <ul style="list-style-type: none"> Slauson/A Line Station (includes elevator shafts and pedestrian bridge that would connect the existing Metro A (Blue) Line Slauson Station to the proposed Project Slauson/A Line Station) 	<p>structure) would be consistent in massing, form, and material of the pedestrian bridge, as well as visual character and quality of Long Beach Ave right-of-way and Wilmington Branch ROW as a transportation corridor.</p> <ul style="list-style-type: none"> It would not conflict with massing in the Affected Area, including the enclosed pedestrian ramp on both sides of the 53rd St pedestrian bridge as the aerial structure would be on supported columns, which would create a more open feel and would reduce the massing of the aerial structure than if the aerial structure were supported on a retaining wall. <p>Randolph St/San Pedro Subdivision ROW:</p> <ul style="list-style-type: none"> Aerial structure would be new visual element; would be supported by retaining walls as the structure; scale and massing of aerial structure would be consistent with surrounding low-rise structures rises/descends around Hollenbeck St and Bissell St. Residences would now see a retaining wall at San Pedro Subdivision ROW; however, scale and massing of aerial structure would be consistent with surrounding low-rise structures. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting: No lighting proposed for aerial structures. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Lighting: No lighting proposed for project component. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<ul style="list-style-type: none"> New sources of glare would not be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Landscape and Billboard Removal</p>	<p>Compatible Landscaping:</p> <ul style="list-style-type: none"> ▪ Limited vegetation within rail ROWs; landscape removal not expected to degrade visual character of Affected Area ▪ 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 (Figure 4.4-6) <p>Billboard: No billboards would be removed in this landscape unit.</p> <p>Scenic Resources: Visual character of scenic resources would not be degraded.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Changes to landscaping would not detract from mixed industrial and residential character and quality of Affected Area; 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. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Would not detract views of Fred Roberts Recreation Center; Wilmington Branch ROW does not have any existing landscaping near Fred Roberts Recreation Center. ▪ Would not detract views of Salt Lake Park; landscape removal near Salt Lake Park would occur within the San Pedro Subdivision ROW, opposite side of the street from Salt Lake Park; would not alter visual character of rail ROW, which is currently an active freight corridor with limited landscaping. <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Changes to landscaping not expected to alter the visual character and quality of the Affected Area. ▪ Viewer groups would 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 Fred Roberts Recreation Center and Salt Lake Park would remain available and would not be altered. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Grade Crossing Modifications and Street Closures</p>	<p>Compatible. Grade Crossing: Similar in scale, form, and materials of existing grade crossings; would be similar in character as existing grade crossings. Existing grade crossing at Albany St would be modified to prevent motorists and pedestrians from crossing La Habra Branch ROW. Street Closure: No street closures proposed in this landscape unit. Scenic Resources: Project component not within viewshed of scenic resources. Lighting: Type and level of lighting would be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect visual character. Glare: Project components would not create new sources of glare.</p>	<p>Insensitive.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; grade-crossing modifications similar in character to existing grade crossings; would not detract from mixed industrial and residential character and quality of the Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources. Lighting: Type and level of lighting would be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect viewer sensitivity. Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Changes not expected to alter visual character and quality of the Affected Area; modified grade crossings would be consistent with visual character and quality of existing grade crossings in the Affected Area. ▪ Sensitive viewers would have little to no reaction to this change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Parking Facilities, Pedestrian Bridges, Ventilation Structures, Tunnels, and Station Areas. None proposed in this landscape unit. Existing Long Beach Ave/53rd St pedestrian bridge would remain undisturbed.

Source: Metro 2021o

Note: LRT = light rail transit; LRV – light rail vehicle; OCS = overhead catenary system; ROW = right-of-way; TC&C = train control and communications; TPSS = traction power substations

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

Figure 4.4-5 Existing and Proposed Views of Long Beach Avenue, looking South toward 53rd Street Pedestrian Bridge

Existing Long Beach Avenue at 53rd Street Pedestrian Bridge



Proposed Long Beach Avenue at 53rd Street Pedestrian Bridge



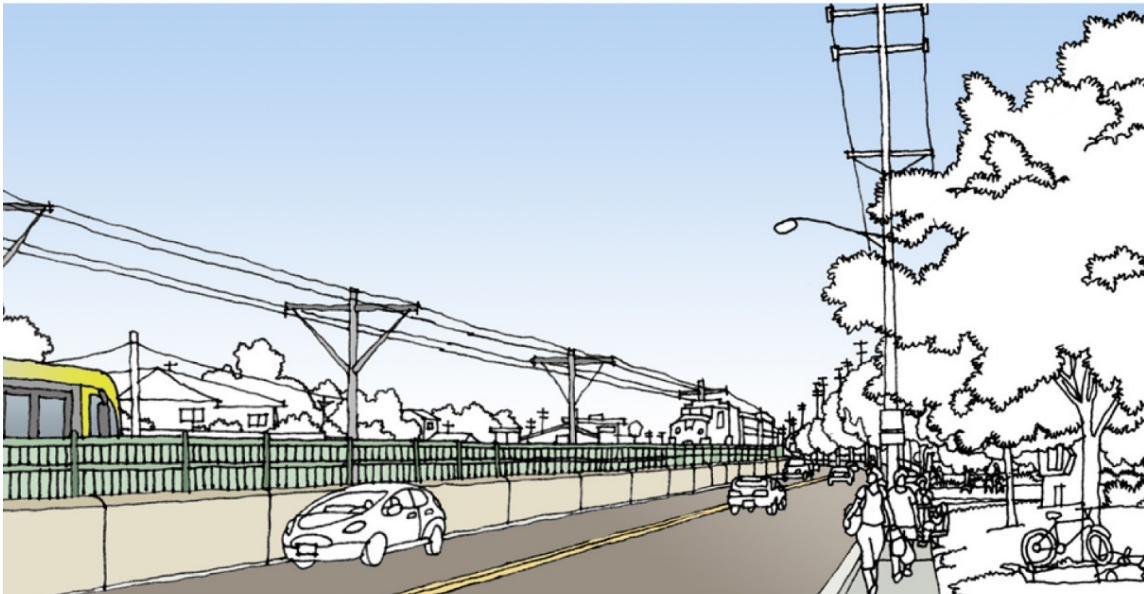
Source: Prepared for Metro by Cityworks Design in 2020

Figure 4.4-6. 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 2019

Table 4.4.6. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Residential Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Station Areas</p> <ul style="list-style-type: none"> ▪ Pacific/Randolph ▪ Florence/Salt Lake 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Pacific/Randolph Station would be in area with low-rise commercial and residential structures. ▪ Florence/Salt Lake Station would be in area with low-rise industrial, commercial, and residential uses. ▪ Station canopies, OCS poles, and overhead wire heights not to exceed 20 feet; would be consistent with scale, massing, character, and context of Affected Area; would not detract from visual character of rail ROWs and the Affected Area. ▪ Design to be sensitive to specific urban context at each station, pedestrian-oriented and in compliance with MRDC or equivalent and Standard/Directive Drawings. <p>Scenic Resources: Visual character of Salt Lake Park would not be altered.</p> <p>Lighting: Lighting not expected to extend beyond station areas. Type and level of lighting would be similar to those that are currently present in the Affected Area and would not affect visual character.</p> <p>Glare: See Table 4.4.3. Project components would follow MRDC or equivalent, Metro’s <i>Systemwide Station Design Standards</i>, and Standard/Directive Drawings. Project components would not create new sources of glare and would not affect the visual character around the station areas. Vertical stainless-steel elements and glass art panels would be</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; scale and massing would be consistent with low-rise structures in the Affected Area; would not detract from visual character and quality of the Affected Area. ▪ Stations would be designed to be sensitive to the specific urban context of each station area. ▪ Sensitive viewers would have little to no reaction to changes associated with this project component since views toward the proposed stations from existing residential properties would be at an angle and the stations would not include features that would detract from the visual character of the rail ROWs. <p>Scenic Resources: Views of Salt Lake Park would not be obstructed.</p> <p>Lighting: Type and level of lighting at station areas would be similar those that are currently present in the Affected Area. Per MRDC, all light sources at station areas would be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Station elements would be treated so that new sources of glare</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual elements, lighting levels, and effects of glare would be compatible with character and quality of the Affected Area. ▪ Viewer groups would have little to no reaction to the changes associated with the proposed stations as the stations would be in the rail ROW and lighting would be directed away from light-sensitive uses.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	dulled so that new sources of glare would not be created.	would not be created and would not affect viewer sensitivity.	
<p>LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements located in Affected Area; project component would be consistent with scale and form of existing utility wires and poles in the Affected Area. <p>Scenic Resources: Visual character of Salt Lake Park would not be altered.</p> <p>Lighting: No lighting proposed for OCS poles, overhead wires, and utility poles. 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.</p> <p>Glare: LRVs traveling along tracks not a substantial source of glare. Materials to be used for project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. ▪ Sensitive viewers would have little to no reaction to changes since similar visual elements are in the Affected Area. <p>Scenic Resources: Visual character of Salt Lake Park would not be altered.</p> <p>Lighting: No lighting proposed for project components. Lighting from LRVs traveling along LRT tracks would be directed away from residential uses and other light-sensitive uses; LRV lighting is expected to be comparable to lighting from existing buildings, vehicles, and freight trains along the rail ROWs and would not affect viewer sensitivity.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not change; would remain similar to existing condition. ▪ Viewers would have little to no reaction to the change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Fences and Retaining Walls</p> <ul style="list-style-type: none"> 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 	<p>Compatible.</p> <ul style="list-style-type: none"> Fences and retaining walls along the rail ROWs would be approximately 6 feet in height. Similar visual elements in Affected Area; 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; would not degrade overall visual character and quality of Affected Area. <p>Scenic Resources: Visual character of Salt Lake Park would not be altered.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from visual character and quality of Affected Area and sensitive viewers would have little to no reaction to the addition of project components since similar visual elements are in Affected Area. <p>Scenic Resources: Views of Salt Lake Park would not be obstructed or altered.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not change as similar visual elements and lighting levels exist in Affected Area; would not degrade overall visual character and quality of Affected Area. Viewers would have little to no reaction to the change. No new sources of light and glare would be created.
<p>Sound Walls</p> <ul style="list-style-type: none"> 8-foot-tall sound walls would be placed at-grade along edge of San Pedro Subdivision ROW (along Salt Lake Ave) See Mitigation Measure NOI-1 (Soundwalls) 	<p>Compatible.</p> <ul style="list-style-type: none"> Sound walls at-grade along Salt Lake Ave would obstruct residential views across Salt Lake Ave and views of San Pedro Subdivision ROW. Scale of sound wall would be consistent with surrounding low-rise structures and existing visual elements. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto adjacent properties.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from visual character and quality of Affected Area as sound walls would be at similar scale as surrounding structures. Sensitive viewers would see new sound wall along San Pedro Subdivision ROW instead of railroad tracks and structures across the rail ROW. Viewer sensitivity would be low, and sensitive viewers would have little to no reaction to the change since sound walls would be at similar scale as the surrounding structures. 	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not change because sound walls would be similar in scale as the surrounding structures and would limit amount of LRV light that spills over onto adjacent properties; would not degrade overall visual character and quality of Affected Area. Viewers would have little to no reaction to the change. No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
		<p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto areas with light-sensitive users.</p>	
TC&C Houses	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ TC&C houses would be small buildings; would be consistent with scale, massing, and form of surrounding low-rise structures. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not alter visual character and quality of Affected Area. ▪ Sensitive viewers would have little to no reaction to TC&C house; would be compatible with scale, massing, and form of the surrounding low-rise structures. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not be altered. ▪ Viewer groups would have little to no reaction the change. ▪ No new sources of light and glare would be created.
TPSS	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ TPSS would be situated on commercial and industrial properties. ▪ Scale, height, massing, and form consistent with low-rise structures and residential character of Affected Area; would not degrade overall visual character and quality of area. 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from character and quality of Affected Area, which contains residential structures and a few commercial and industrial structures. ▪ Sensitive viewers would have little to no reaction as TPSS are 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Scale, massing, and form would be compatible with the character and quality of the Affected Area; would not degrade the overall visual character and quality of Affected Area. ▪ Viewers would have little to no reaction to the change as component would be consistent

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: No external lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>proposed on industrial and commercial properties.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>with scale, massing, and form of surrounding low-rise structures.</p> <ul style="list-style-type: none"> ▪ No new sources of light and glare would be created.
<p>Radio Antennas</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ 35- to 60-foot-tall radio antenna within La Habra Branch ROW at Randolph St/Seville Ave intersection; would 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 would not degrade overall visual character and quality of the Affected Area since similar components (utility poles) are in Affected Area; antenna would be consistent with the character of the existing utility poles. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. ▪ No sensitive viewers and scenic resources near proposed radio antenna. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change. ▪ No new sources of light and glare would be created.
<p>Landscape and Billboard Removal</p>	<p>Compatible</p> <p>Landscaping: Landscape removal would not visually degrade overall visual character of Affected Area 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 would not change the character of the rail ROWs.</p> <p>Billboard: No billboards in landscape unit.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Viewer sensitivity would be low as the changes would be within existing rail ROWs that are currently used by freight trains; viewer groups would continue to see the rail ROWs. 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Landscape removal not expected to degrade visual character and quality of Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	
<p>Grade-Crossing Modifications</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Consistent with scale, form, and materials of existing grade crossings in the same areas. ▪ Existing grade crossing would be closed at Rugby Ave and Rita Ave; changes would be consistent with the visual character of the existing grade crossings. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting would be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect visual character.</p> <p>Glare: Project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; viewer sensitivity would be low since grade-crossing modifications would be similar in character as existing grade crossings; would not detract from character and quality of the Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Type and level of lighting would be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect viewer sensitivity.</p> <p>Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not be altered as existing grade crossings are in the Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting. ▪ No new sources of glare would be created.

Aerial Structures, Pedestrian Bridges, Tunnels, Parking Facilities, Radio Houses, Ventilation Structures, and Street Closures.

None proposed in this landscape unit.

Source: Metro 2021o

Note: 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

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

Figure 4.4-7. Existing and Proposed Views of Randolph Street at Miles Avenue, looking East
Existing Randolph Street



Proposed Randolph Street



Source: Cityworks Design 2019

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

Table 4.4.7 summarizes the potential effects to visual character, viewer sensitivity, and visual quality in the Suburban Residential and Industrial Landscape Unit. Figure 4.4-8 depicts the change in visual character and quality at Downey Avenue.

Project components would not obstruct views of or alter the visual character and quality of the existing Los Angeles River truss bridge at the Los Angeles River, Los Angeles River “Defiance,” a public art sculpture, and Paramount Park. Viewer sensitivity to the proposed changes at the Los Angeles River and at Paramount Boulevard/Rosecrans Avenue would 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 would 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 project components would either be obstructed by sound walls (Mitigation Measure NOI-1 [Soundwalls]) or by existing walls that are currently situated between the PEROW and residential properties. The sound walls would also obstruct views of project components along the Paramount and Bellflower Bike Trails. Nighttime lighting levels in the Affected Area for visual would not significantly increase, and the effects of glare would be similar to existing conditions.

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

Table 4.4.7. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential and Industrial Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>LRT Tracks, OCS Poles and Overhead Wires</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements located within the Affected Area. Scale of OCS poles and overhead wires consistent with existing utility poles and wires and would not conflict with visual character of Affected Area. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting:</p> <ul style="list-style-type: none"> ▪ No lighting proposed for OCS poles, overhead wires, and utility poles. ▪ 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 would 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 proposed LRVs would be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along surrounding streets, which currently produce transportation-related light. <p>Glare: LRVs along tracks would not be a substantial source of glare. Materials to be used for project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; Sensitive viewers would have little to no reaction to visual changes as similar visual elements already exist in Affected Area. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting: No lighting proposed for project components. Lighting from LRVs traveling along LRT tracks would be directed away from residential uses and other light-sensitive uses; LRV lighting would not affect light-sensitive viewers.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Mixed industrial and residential character and quality of Affected Area unchanged as similar visual elements currently exist in Affected Area. ▪ Sensitive viewers would have little to no reaction to change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Fences and Retaining Walls</p> <ul style="list-style-type: none"> ▪ Along at-grade portions of Project that parallel street ROW ▪ Low retaining walls with fences on top of retaining walls where rail ROW is slightly elevated from adjacent street 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Properties facing rail ROWs currently have fences or walls along property lines; fences, and combination of retaining walls/fences, along rail ROW would be 6 feet tall. ▪ Similar visual elements in Affected Area; scale and form would be consistent and fit with visual character of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <p>Visible in foreground; would not detract from visual character and quality of Affected Area as similar visual elements are in Affected Area.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Mixed industrial and residential character and quality of Affected Area unchanged as similar visual elements and lighting levels currently exist in Affected Area. ▪ Sensitive viewers would have little to no reaction to change. ▪ No new sources of light and glare would be created.
<p>Sound Walls</p> <ul style="list-style-type: none"> ▪ 4-foot-tall sound wall from Southern Ave to Frontage Rd (including along edge of proposed bridge over the Los Angeles River), and on proposed aerial structures within PEROW ▪ 8-foot-tall sound wall along at-grade portions of PEROW ▪ See Mitigation Measure NOI-1 (Soundwalls) 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale and massing would be consistent and fit with the existing low-rise structures in the Affected Area. Similar visual elements in Affected Area. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <ul style="list-style-type: none"> ▪ Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto adjacent properties. 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area since similar visual elements are in the area. ▪ Sensitive viewers would have little to no reaction to sound walls since sound walls would be similar in scale as the surrounding low-rise structures. <p>Scenic Resources: Project component would not obstruct views of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto areas with light-sensitive users.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Mixed residential and industrial character and quality of Affected Area would not change as similar visual elements currently exist in Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ Sound walls would limit amount of LRV light that spills over onto adjacent properties. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>TC&C Houses</p>	<p>Compatible. Component consist of small buildings, which would be compatible with surrounding low-rise structures. Scenic Resources: Project component not within viewshed of scenic resources. Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not alter visual character and quality of Affected Area. ▪ Sensitive viewers would have little to no reaction as buildings would be small and would fit with scale of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources. Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not be altered as structures would be consistent with scale of surrounding low-rise structures. ▪ Viewer groups would have little to no reaction the change. ▪ No new sources of light and glare would be created.
<p>Radio Antennas</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Proposed 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, would be consistent with the scale of low-rise structures in the Affected Area. ▪ If a 55-foot-tall radio antenna is constructed, would be taller than surrounding low-rise structures. The radio antenna would fit the character of the Affected Area as it would be located on a surface parking lot to the rear of a privately owned entertainment center (the location of the Bellflower MSF site option); would not conflict with the character of industrial properties and a mobile home community 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area, consisting of low-rise industrial properties, a mobile home community, the unpaved PEROW, and Bellflower Bike Trail. ▪ Views of radio antenna would not be available at nearby residential properties. <p>Scenic Resources: Project component not within viewshed of scenic resources. Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Character and quality of Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change as project component would be consistent with visual character of Affected Area; would be situated on a surface parking lot to the rear of a privately owned entertainment activity center. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>that are on the opposite side of the PEROW.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>		
TPSS	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale, height, massing, and form would be consistent with low-rise structures in surrounding area; would not degrade overall visual character and quality of area. ▪ TPSS would be located on adjacent LADWP property with overhead utility towers and used as a nursery. <p>Scenic Resources: Visual character of scenic resources would not be altered.</p> <p>Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Located on adjacent LADWP property between PEROW and rear of residential properties; views of TPSS would be limited. ▪ Viewer groups would have little to no reaction to change; sensitive viewers do not have views of TPSS. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Consistent with character and quality of Affected Area; would not degrade overall visual character and quality of Affected Area. ▪ Viewer groups would have little to no reaction to changes in visual character and quality, and sensitive viewers would not have views of TPSS. ▪ No new sources of light and glare would be created.
<p>Aerial Structures</p> <p>~32 feet height</p> <ul style="list-style-type: none"> ▪ Paramount Blvd/Rosecrans Ave ▪ Downey Ave 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Aerial structures primarily supported by retaining walls; supported by columns where aerial structure would cross over a street. Aerial structure would be new visual element, particularly at Paramount Blvd/Rosecrans Ave, Paramount Park, and Downey Ave. ▪ Trees and some landscaping in PEROW would be removed to accommodate aerial structure. <p>Paramount Blvd/Rosecrans Ave: Scale would be consistent with surrounding low-rise one-story structures surrounding the Paramount Blvd/Rosecrans Ave intersection;</p>	<p>Low.</p> <p>Visible in foreground; would not detract from character and quality of Affected Area.</p> <ul style="list-style-type: none"> ▪ Paramount Blvd/Rosecrans Ave: Sensitive viewers would have little to no reaction to visual change as aerial structure would be located along northerly edge of Paramount Park and surface parking lot. ▪ Limited views at residential neighborhood north of PEROW; most views blocked by walls and 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Would not degrade overall visual character and quality of Affected Area. ▪ Viewer groups would have little to no reaction to changes in visual character and quality. ▪ LRV lighting would not alter visual character and would not adversely affect sensitive viewers. ▪ Project component would not create new sources of glare.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>would fit with the commercial character and context of the existing area.</p> <p>Downey Ave: Existing fences and vegetation in PEROW would be removed; landscaped medians outside work limit would be retained. Scale of aerial structure would be consistent with surrounding low-rise one- and two-story structures.</p> <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Aerial structure would 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: would not be removed; views of the public art sculpture would remain available in the surrounding area (along Rosecrans Ave and Paramount Blvd). <p>Lighting: No lighting proposed for aerial structures. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>structures on adjacent residential properties.</p> <p>Downey Ave:</p> <ul style="list-style-type: none"> ▪ Sensitive viewers (residents) on south side of Downey Ave would see a new retaining wall in PEROW (on west and east side of Downey Ave); new aerial structure would be supported by columns as aerial structure crosses over Downey Ave. ▪ Sensitive viewers would have little to no reaction to this change as retaining wall would be at a similar scale as surrounding structures. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting: No lighting proposed for project component. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Pedestrian Bridges/ Undercrossing</p> <ul style="list-style-type: none"> Paramount High School 	<p>Compatible.</p> <ul style="list-style-type: none"> Pedestrian bridge connecting Paramount Park to the Paramount High School main campus would be removed and replaced with an undercrossing or tunnel; views of undercrossing/tunnel would be limited. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond the pedestrian bridge/undercrossing and would be consistent with visual character of Affected Area.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Pedestrian bridge would be removed and no longer visible; views of pedestrian undercrossing/tunnel would be limited. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond the pedestrian bridge/undercrossing and would not affect viewer sensitivity.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Consistent with visual character and quality of the Affected Area. Viewer groups would have little to no reaction to changes in visual character and quality. Lighting would not alter visual character and would not adversely affect viewer sensitivity. Project component would not create new sources of glare.
<p>Bridges</p> <ul style="list-style-type: none"> Los Angeles River 	<p>Compatible.</p> <ul style="list-style-type: none"> Existing angled views of bridge would continue to be available at residential area south of Southern Ave and to motorists along I-710 freeway and Firestone Blvd. <p>Scenic Resources:</p> <ul style="list-style-type: none"> Scale and massing of new bridge would be larger than existing Los Angeles River truss bridge; would change visual setting of the truss bridge, but new bridge would be compatible with visual character of flood-control channel. Existing Los Angeles River truss bridge would be retained; new bridge would be constructed immediately northeast and adjacent to existing truss bridge. New bridge would not obstruct views of existing truss bridge at residential area along Salt Lake Avenue (between Southern 	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from character and quality of Affected Area around aerial structures. Existing use of Los Angeles River bike trail is low. <p>Scenic Resources:</p> <ul style="list-style-type: none"> Angled views of Los Angeles River truss bridge to remain; would not be obstructed at residential area along Salt Lake Ave (between Southern Ave and Los Angeles River) and at I-710 freeway. Viewer groups would 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 	<p>Neutral.</p> <ul style="list-style-type: none"> Proposed bridge would be larger than existing truss bridge; however, proposed bridge would be consistent with and would not degrade overall visual character and quality of Affected Area. Viewer groups would have little to no reaction to changes in visual character and quality. LRV lighting would not alter visual character and would not adversely affect sensitive viewers. Project component would not create new sources of glare.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Avenue and Los Angeles River) and along I-710 freeway; would obstruct views of bridge from Firestone Blvd and along Los Angeles River Bike Path north of the bridge.</p> <ul style="list-style-type: none"> ▪ 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 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. <p>Lighting: No lighting proposed on bridge. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>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 would not be obstructed.</p> <p>Lighting: No lighting proposed for bridges. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <ul style="list-style-type: none"> ▪ Glare: Materials to be used would not create new sources of glare. 	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Tunnels/Undercrossings</p> <ul style="list-style-type: none"> ▪ I-710 ▪ SR-91 	<p>Compatible.</p> <p>I-710 Freeway: See Table 4.4.4</p> <p>SR-91 Freeway: No tunnels or new undercrossing proposed under SR-91. LRVs would travel under SR-91 using the existing passageway.</p> <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: Lighting would not extend beyond tunnels/undercrossing and would be consistent with character of Affected Area.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <p>I-710 Freeway: See Table 4.4.4</p> <p>SR-91 Freeway: 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.</p> <ul style="list-style-type: none"> ▪ Landscaping around undercrossing limits views from park and residential area; viewer groups would have little to no reaction to change. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting: No sensitive viewers in Affected Area. Lighting would not extend beyond tunnels/undercrossing and would not affect viewer sensitivity.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Viewer groups would have little to no reaction to changes in visual character and quality. ▪ Lighting would not alter visual character and would not adversely affect viewer sensitivity. ▪ Project component would not create new sources of glare. <p>I-710 Freeway: See Table 4.4.4</p> <p>SR-91 Freeway: Consistent with character of Affected Area; would not degrade overall visual character and quality of Affected Area.</p>

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Landscape and Billboard Removal</p>	<p>Incompatible (Without Mitigation); Compatible (With Mitigation)</p> <p>Landscaping: Vegetation to be removed in PEROW; landscaping outside of work limits to be retained.</p> <p>Downey Ave: Vegetation removal within PEROW would not degrade visual character of street; landscaping outside of PEROW would remain.</p> <p>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. Mitigation Measure VA-1 (Screening at Somerset Boulevard) requires existing walls and landscaping east of proposed LRT tracks to either remain or be replaced with new landscaping and wall.</p> <p>Billboard: No billboards in this landscape unit.</p> <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Project component would not alter visual character of scenic resources. ▪ <u>Paramount Park:</u> 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. <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Moderate (Without Mitigation); Low (With Mitigation)</p> <ul style="list-style-type: none"> ▪ Sensitive viewers would have little to no reaction to the change since changes to landscaping would not detract from visual character and quality of Affected Area. ▪ Vegetation to be removed within or adjacent to PEROW; landscaping outside of work limits would be retained. ▪ Increased visibility of World Energy storage tank cars at residential uses may occur. However, Mitigation Measure VA-1 (Screening at Somerset Boulevard) would reduce viewer sensitivity to low as the storage tank cars (east of the Project’s LRT tracks) would be screened from public views with existing wall or new landscaping and wall. <p>Scenic Resources: Project component would not alter or obstruct views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Adverse (Without Mitigation); Neutral (With Mitigation)</p> <ul style="list-style-type: none"> ▪ Changes to landscaping not expected to alter visual character and quality of Affected Area. ▪ Residents would 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) would reduce viewer sensitivity to low as storage tank cars (east of the Project’s LRT tracks) would continue to be screened from public views with existing wall or new landscaping and wall. ▪ No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Grade-Crossing Modifications</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Consistent with scale, form, and materials of existing grade crossings. ▪ Existing grade crossing at Frontage Rd (northwest of I-710 freeway) would be closed; grade crossing is on private industrial property and would not alter industrial character of the Affected Area. <p>Scenic Resources: Project component would not alter visual character of scenic resources.</p> <p>Lighting: Type and level of lighting would be consistent with those that are present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect visual character.</p> <p>Glare: Project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from character and quality of Affected Area and would be consistent with visual character of Affected Area. ▪ Viewers would have little to no reaction to the change. No sensitive viewers at Frontage Rd as grade crossing is on a private industrial property. <p>Scenic Resources: Project component would not alter or obstruct views of scenic resources.</p> <p>Lighting: Type and level of lighting would be similar to those that are currently present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect viewer sensitivity.</p> <p>Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not be altered. ▪ Viewers would have little to no reaction to the change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Station, Parking Facilities, and Ventilation Structures. None proposed in this landscape unit.

Source: Metro 2021o

Note: LADPW = Los Angeles Department of Power and Water; 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

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

Figure 4.4-8. Existing and Proposed Views of Downey Avenue, looking South

Existing Downey Avenue



Proposed Downey Avenue



Source: Prepared for Metro by Cityworks Design in 2020

Suburban Residential Landscape Unit: This landscape unit is located in the Cities of Paramount, Bellflower, Cerritos, and Artesia. The project alignment would 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 4.4.8 summarizes the potential effects to the visual character, viewer sensitivity, and visual quality in the Suburban Residential Landscape Unit.

Between Hegel Street to Ruth R. Caruthers Park, the Bellflower Bike Trail would share the PEROW with the project alignment. Although project components would 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 would not degrade the visual character of the PEROW as the PEROW currently contains strips of unpaved land and/or remnants of railroad tracks. Project components would not detract from views of the original Bellflower Pacific Electric Station. Viewer sensitivity to the changes associated with project components, bike trail realignment, and potential landscape removal within the PEROW would be low. Figure 4.4-9 depicts the change in visual character and quality within the PEROW at Bellflower Boulevard. Figure 4.4-10 depicts the change in visual character and quality at Pioneer Station.

“Belle,” a bronze public art cow statue at the southeast corner of Woodruff Avenue/Flora Vista Street, would be removed to accommodate the retaining walls for the proposed 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” would 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 would cause an adverse effect to the visual environment.

Table 4.4.8. Project Components’ Effects on Visual Character, Viewer Sensitivity, and Visual Quality – Suburban Residential Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Station Areas</p> <ul style="list-style-type: none"> ▪ Paramount/Rosecrans Station ▪ Bellflower Station ▪ Pioneer Station 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Located in an area with low-rise structures; Consistent and fit with character and context of Affected Area; would not detract from visual character of Affected Area. <p>Paramount/Rosecrans Station: Aerial station height not to exceed 47 feet (includes station canopy); would be consistent with scale and massing of surrounding uses. See discussion of “Aerial Structure.”</p> <p>Bellflower and Pioneer Stations: Height of station canopies and OCS poles not to exceed 20 feet and would be consistent with scale and massing of Affected Area.</p> <p>Scenic Resources: Station elements would not alter the visual character of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond station areas. Type and level of lighting would be similar to that currently present in the Affected Area and would not affect visual character.</p> <p>Glare: See Table 4.4.3. Project components would follow MRDC or equivalent, Metro’s <i>Systemwide Station Design Standards</i>, and Standard/Directive Drawings. Project components would not create new sources of glare and would not affect the visual character around the station areas. Vertical stainless-steel elements and glass art panels would be dulled so that new sources of glare would not be created.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would be at a similar scale as surrounding structures; would not detract from visual character and quality of Affected Area. ▪ Viewer groups would have little to no reaction to visual changes as station areas would be located in existing rail corridor. <p>Scenic Resources: Views of scenic resources would not be obstructed; would remain available to sensitive viewers.</p> <p>Lighting: Type and level of lighting at station areas would be similar to those currently present in the Affected Area. Per MRDC, all light sources at station areas would be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Station elements would be treated so that new sources of glare are not created and would not affect viewer sensitivity.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Compatible with visual character and quality of Affected Area; would not include features that would detract from visual character and quality of Affected Area. ▪ Viewers would have little to no reaction to the changes. ▪ Lighting would be directed away from light-sensitive uses. ▪ No new sources of glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Parking Facilities</p> <ul style="list-style-type: none"> ▪ Paramount/Rosecrans Station ▪ Bellflower Station ▪ Pioneer Station 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ No visually prominent features proposed for parking facilities; landscaping would be designed to improve visual quality of parking facilities. <p>Paramount/Rosecrans Station:</p> <ul style="list-style-type: none"> ▪ Removal of existing industrial structures for surface parking lot would provide views of aerial structure for Paramount Station within PEROW; would fit with character and context of Affected Area. ▪ Aerial structure would be set back farther from Rosecrans Ave than existing industrial structures on the proposed parking site; surface parking lot would reduce the scale and massing of aerial structure and station. <p>Bellflower Station: Located in commercial area used for automobile auctions that consists of a surface parking lot and low-rise structures; surface parking lot would fit with context of surrounding commercial area.</p> <p>Pioneer Station: Industrial, commercial, and residential structures would be removed to build a four-story parking structure and would fit with the context of surrounding residential, commercial, and industrial uses (Figure 4.4-10).</p> <p>Scenic Resources: Project component would not alter the visual character of scenic resources.</p> <p>Lighting: Lighting would be designed per MRDC or equivalent and would not be expected to extend beyond parking facilities. Type and level of lighting</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in the foreground. ▪ Viewer groups would have little to no reaction to changes since similar visual elements exist in Affected Area. <p>Scenic Resources: Views of scenic resources would not be obstructed; would remain available to sensitive viewers.</p> <p>Lighting: Type and level of lighting at parking facilities would be similar to that currently present in the Affected Area. Per MRDC, all light sources at proposed surface parking lots would be directed downward and toward parking lots to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Sources of glare (e.g., parked vehicles) would be similar to existing conditions and would not affect viewer sensitivity.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Compatible with visual character and scale of Affected Area. ▪ Viewers would have little to no reaction to changes. ▪ Lighting levels and effects of glare would be similar to existing conditions and would not affect viewer sensitivity.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>would be similar to that currently present in the Affected Area and would not affect visual character.</p> <p>Glare: Sources of glare (e.g., parked vehicles) would be similar to existing conditions and would not be expected to alter visual character.</p>		
<p>LRT Tracks, OCS Poles and Overhead Wires, and Utility Poles</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale and form consistent with existing freight tracks, utility poles, and wires; would not conflict with visual character of Affected Area. Similar visual elements along and across street rights-of-way and rail ROWs in Affected Area. ▪ South of Somerset Blvd, new LRT tracks would be installed within PEROW; would be consistent with existing visual character of the PEROW, which currently consists of remnants of freight tracks in some areas and wide strips of unpaved land. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Project component would not alter the visual character of scenic resources. ▪ Views would remain available south of PEROW and along Bellflower Bike Trail; would not obstruct north-facing views of original Bellflower Pacific Electric Station. ▪ Located behind Rosewood Park, Artesia Historical Museum, and Old Station #30 and would not obstruct views of these scenic resources. Existing wall along southerly perimeter of Rosewood Park blocks views of PEROW from park. <p>Lighting:</p> <ul style="list-style-type: none"> ▪ No lighting proposed for OCS poles, overhead wires, and utility poles. 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; viewer groups would have little to no reaction to visual changes due to similar visual elements in the Affected Area. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Views of scenic resources would not be obstructed. ▪ Views of original Bellflower Pacific Electric Station, Artesia Historical Museum, and Old Station #30 would remain available. <p>Lighting: No lighting proposed for project components. Lighting from LRVs traveling along LRT tracks would be directed away from residential uses and other light-sensitive uses; LRV lighting would not affect light-sensitive viewers.</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not change; similar visual elements exist in Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<ul style="list-style-type: none"> ▪ LRVs would 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 proposed LRVs would be consistent with existing lighting levels along the Bellflower Bike Trail and vehicle lights along surrounding streets, which currently produce transportation-related light. <p>Glare: LRVs along tracks would not be a substantial source of glare. Materials to be used for project components would not create new sources of glare.</p>		
<p>Fences and Retaining Walls Along at-grade portions that parallel a street ROW</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar visual elements in area; properties facing PEROW currently have fences or walls along property lines. Fences along rail ROW would be 6 feet tall; would be consistent and fit with visual character of Affected Area. <p>Scenic Resources: Fences and retaining walls would not obstruct views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not degrade overall visual character and quality of Affected Area as similar visual elements exist in Affected Area. ▪ Viewer groups would have little to no reaction to visual changes. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of Affected Area would not change; similar visual elements and lighting levels exist in Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ No new sources of light and glare would be created.
<p>Sound Walls</p> <ul style="list-style-type: none"> ▪ 4-foot-tall sound walls on aerial structure ▪ 8-foot-tall sound walls at-grade along perimeter of the San Pedro Subdivision ROW and PEROW 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Sound walls would not detract with overall visual character of Affected Area. Height of aerial structure with sound wall would be approximately 36 feet; would be consistent with scale and massing of surrounding low-rise structures. ▪ At-grade sound walls along perimeter of San Pedro Subdivision ROW and PEROW would obstruct views of rail ROW. Sound walls would be of similar height 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; views of scenic resources would remain available. ▪ Viewer groups would have little to no reaction to visual changes as sound walls would be consistent 	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality of the Affected Area would not change as similar visual elements exist in Affected Area. ▪ Sound walls would be at similar scale as surrounding structures

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<ul style="list-style-type: none"> See Mitigation Measure NOI-1 (Soundwalls) 	<p>as surrounding low-rise structures and walls along rear of properties facing rail ROWs.</p> <ul style="list-style-type: none"> Views of project components within PEROW would be limited along portions of the existing Bellflower Bike Trail and/or its surrounding area; views of existing Bellflower Bike Trail would no longer be available along some areas; however, scale and massing of at-grade sound walls would be consistent with surrounding low-rise structure and sound walls. <p>Scenic Resources: Sound walls would not alter visual character of scenic resources. Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light from LRVs that would spill over onto adjacent properties.</p>	<p>with low-rise structures in Affected Area.</p> <p>Scenic Resources: Views of scenic resources would not be obstructed. Lighting and Glare: Project component would not create new sources of light and glare; walls would limit the amount of light along the rail ROWs from spilling over onto areas with light-sensitive users.</p>	<p>and would limit amount of LRV light that spills over onto adjacent properties.</p> <ul style="list-style-type: none"> Viewers would have little to no reaction to the change. No new sources of light and glare would be created.
<p>TC&C Houses</p>	<p>Compatible.</p> <ul style="list-style-type: none"> TC&C houses would be small buildings; compatible with surrounding low-rise structures. <p>Scenic Resources: Project component would not alter visual character of scenic resources. Lighting and Glare: No lighting is proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would be similar in scale as surrounding low-rise structures. Viewer groups would have little to no reaction. <p>Scenic Resources: Views of scenic resources would not be obstructed. Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not be altered. Viewer groups would have little to no reaction to the change. No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>TPSS</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale, height, massing, and form consistent with low-rise residential character of Affected Area; would not degrade overall visual character and quality of area. ▪ TPSS site would be landscaped if in residential area or would incorporate design features to screen or improve appearance of the structure; not expected to contrast with existing visual character and quality of surrounding residential neighborhood. <p>Scenic Resources: Project component would not alter visual character of scenic resources.</p> <p>Lighting and Glare: No lighting is proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from character and quality of Affected Area. ▪ Located in rail ROW, rear of proposed Bellflower MSF site option, adjacent to PEROW, at proposed parking facility for Bellflower Station, or on vacant properties. Landscaping to be incorporated if TPSS is in residential area. ▪ Viewer groups would have little to no reaction to TPSS; consistent with uses of area where it would be located. <p>Scenic Resources: Views of scenic resources would not be obstructed.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Consistent and would not degrade overall visual character and quality of Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ No new sources of light and glare would be created.
<p>Radio Antennas</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Similar components (utility poles) located in Affected Area; proposed next to Paramount Station parking structure. ▪ 35-foot-tall radio antennas would be consistent with scale of low-rise structures. 60-foot-tall radio antennas would be taller than structures in the Affected Area but would not degrade overall visual character and quality of Affected Area. 	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not detract from visual character and quality of Affected Area. <p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Character and quality of the Affected Area would not change. ▪ Viewer groups would have little to no reaction to the change.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>Scenic Resources: Project component not within viewshed of scenic resources.</p> <p>Lighting and Glare: Project component would not create new sources of light and glare.</p>		<ul style="list-style-type: none"> No new sources of light and glare would be created.
<p>Aerial Structures</p> <p><u>~32 feet height (~36 feet with sound wall)</u></p> <ul style="list-style-type: none"> Woodruff Ave/Flower St/Floral Vista St Gridley Rd/183rd St <p><u>~32 feet height (~47 feet to top of station canopy)</u></p> <ul style="list-style-type: none"> Paramount Blvd/Rosecrans Ave (includes Paramount/Rosecrans Station) 	<p>Incompatible (Without Mitigation); Compatible (With Mitigation).</p> <ul style="list-style-type: none"> No scenic views located in Affected Area for aerial structures. <p><u>Paramount Blvd/Rosecrans Ave (Paramount/Rosecrans Station)</u></p> <ul style="list-style-type: none"> New visual element; would be visible along commercial area around Paramount Blvd/Rosecrans Ave intersection (particularly with the removal of industrial structures for the proposed parking facility) and at cul-de-sacs in residential neighborhood north of Rosecrans Ave. Aerial structures primarily supported by retaining walls; supported by columns at Paramount/Rosecrans Station platform and as it crosses over Rosecrans Ave/Paramount Blvd. Straddle bents proposed where alignment turns from San Pedro Subdivision ROW to PEROW. Views limited at residential neighborhood north of Rosecrans Ave since aerial structure is situated between the rear of adjacent residential properties; views of aerial structure would be mostly blocked by walls and structures on adjacent residential properties. Consistent with surrounding one- and two-story structures; fit with character and context of existing area. 	<p>Moderate (Without Mitigation); Low (With Mitigation)</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from character and quality of Affected Area around aerial structures. <p><u>Paramount Blvd/Rosecrans Ave (Paramount/Rosecrans Station)</u></p> <ul style="list-style-type: none"> Viewer groups would have little to no reaction to visual change as aerial structures would be at a similar scale as surrounding structures. <p><u>Woodruff Ave/Flower St/Floral Vista St</u></p> <ul style="list-style-type: none"> Retaining wall would be new visual element. Visible from residences south of PEROW (primarily from second-story windows) and along north side of Flora Vista St. Residents would have little to no reaction to change as retaining wall would be at similar scale as surrounding structures. 	<p>Adverse (Before Mitigation); Neutral (After Mitigation)</p> <ul style="list-style-type: none"> Located within PEROW; would not degrade visual character and quality of rail ROWs and Affected Area. Removal of “Belle” would not detract from visual character and quality of PEROW and viewers generally would not be sensitive to the change, but statue has aesthetic value to City of Bellflower. “Belle” would be relocated to a different location with implementation of Mitigation Measure VA-2 (Relocation of “Belle”) and City of Bellflower would be able to preserve public art at a city-approved location. LRV lighting would not alter visual character and would not adversely affect sensitive viewers.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<ul style="list-style-type: none"> ▪ See “Parking Facilities” for further discussion. <p>Woodruff Ave/Flower St/Flora Vista St:</p> <ul style="list-style-type: none"> ▪ New visual element in area with low-rise commercial and residential structures; scale consistent with surrounding low-rise structures. ▪ Aerial structure would be visible along Bellflower Bike Trail, Flora Vista St, Flower St, and Woodruff Ave; primarily supported by retaining walls and would be supported on columns as it crosses over Flower St, Woodruff Ave, and Bellflower Bike Trail. ▪ Landscaping at Bellflower Bike Trail within PEROW would be removed to accommodate aerial structure; landscaping outside of the work limits would remain. Users of bike trail and residents facing alignment (along Flora Vista St) would see a retaining wall within PEROW. <p>Gridley Rd/183rd St:</p> <ul style="list-style-type: none"> ▪ New visual element; would be visible at Gridley Rd/183rd St and by residents east of the PEROW. Scale and massing consistent with surrounding one- and two-story structures and fit with character and context of area. ▪ Aerial structure primarily supported by retaining walls but supported on columns over Gridley Rd/183rd St intersection. No scenic resources in the area. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ “Belle” public art cow statue in PEROW near Woodruff Ave/Flower St/Flora Vista St would be removed; would not detract from or conflict with visual character of area as statue is in PEROW, 	<p>Gridley Rd/183rd St:</p> <ul style="list-style-type: none"> ▪ Views of retaining walls primarily obstructed by landscaping and/or walls that surround residential properties; some views of aerial structure would be visible at residential properties. ▪ Residents would have little to no reaction to change as retaining wall with 4-foot-tall sound wall on top of aerial structure would be at a similar scale as surrounding structures; would not obstruct any scenic views and scenic resources. <p>Scenic Resources:</p> <ul style="list-style-type: none"> ▪ Residents would have little to no reaction to removal of “Belle” as existing residential views of statute is limited due to angled views at residential properties. ▪ View of “Belle” at existing location from the bike trail would 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. 	<ul style="list-style-type: none"> ▪ Project component would not create new sources of glare.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>which has been historically used as a rail corridor and contains remnants of railroad tracks.</p> <ul style="list-style-type: none"> Although removal of “Belle” would not conflict with visual character of the ROW, the public art statue has aesthetic value to the city and, thus, removal of statue would have an adverse effect. Mitigation Measure VA-2 (Relocation of “Belle”) would reduce project-related effects on “Belle.” <p>Lighting: No lighting is proposed for aerial structures. Lighting would 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.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	<ul style="list-style-type: none"> Mitigation Measure VA-2 (Relocation of “Belle”) would relocate “Belle” to a city-approved location where residents can continue to view the statue. <p>Lighting: No lighting is proposed for project component. See LRV lighting discussion under “LRT Tracks, OCS Poles, Overhead Wires, and Utility Poles.”</p> <p>Glare: Materials to be used would not create new sources of glare.</p>	
<p>Landscape and Billboard Removal</p>	<p>Compatible. Landscaping:</p> <ul style="list-style-type: none"> Landscaped medians intersecting PEROW, and vegetation and decorative lighting within PEROW to be removed; landscaping outside of work limits to be retained. Landscaping would 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 would 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 I-105 freeway between San Pedro Subdivision ROW and Arthur Ave to accommodate a new sidewalk would 	<p>Low.</p> <ul style="list-style-type: none"> Changes to landscaping and billboard removal would not detract from visual character and quality of Affected Area; changes located in existing rail ROW or on a strip of land between I-105 freeway and residential properties are currently blocked by fences. Viewers would have little to no reaction to the change as landscape and billboard removal would only occur within project work limits, which primarily consist of rail ROW and adjacent properties that would be acquired for the Project. 	<p>Neutral.</p> <ul style="list-style-type: none"> Landscaping would be replaced in residential areas if adequate space available; landscape removal not expected to degrade visual character and quality of Affected Area; landscaping within work limits of rail ROWs is limited. Viewers would have little to no reaction to the change. No new sources of light and glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>not adversely affect visual character because views of this area are currently blocked by fences.</p> <ul style="list-style-type: none"> ▪ Landscaping on Bellflower Bike Trail between Flower St and Woodruff Ave would be removed to accommodate support columns for the aerial structure; would 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 and Bellflower Bike Trail. <p>Billboard: Billboards within rail ROWs would be removed; would not adversely affect visual character of area (Figure 4.4-9).</p> <p>Scenic Resources: Project components would not alter visual character of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Scenic Resources: Project components would not alter views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Grade Crossing Modifications</p>	<p>Compatible.</p> <ul style="list-style-type: none"> Although grade crossings would 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 would be consistent with scale and visual character of the street rights-of-way as transportation corridors. <p>Scenic Resources: Unobstructed north-facing views of original Bellflower Pacific Electric Station would remain available south of PEROW and along Bellflower Bike Trail (Figure 4.4-9 and Figure 4.4-10).</p> <p>Lighting: Type and level of lighting would be consistent with those present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect visual character.</p> <p>Glare: Project components would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; grade-crossing modifications would not detract from character and quality of Affected Area. Viewers would have little to no reaction to the change as grade crossings would be consistent with scale of Affected Area and visual character of street rights-of-way. <p>Scenic Resources: Project component would not obstruct or alter views of scenic resources.</p> <p>Lighting: Type and level of lighting would be similar to those currently present in the surrounding street rights-of-way and existing grade crossings. Lighting would not affect viewer sensitivity.</p> <p>Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of Affected Area would not be altered. Viewers would have little to no reaction to change. Lighting would be consistent with existing visual character of Affected Area, and viewer groups would have little to no reaction to changes in lighting. No new sources of glare would be created.

Ventilation Structures, Pedestrian Bridges, Bridges, and Tunnels. None proposed in this landscape unit.

Source: Metro 2021o

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

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

Figure 4.4-9. Existing and Proposed Views of Bellflower Boulevard, looking East from Bellflower Bike Trail

Existing Bellflower Boulevard



Proposed Bellflower Boulevard



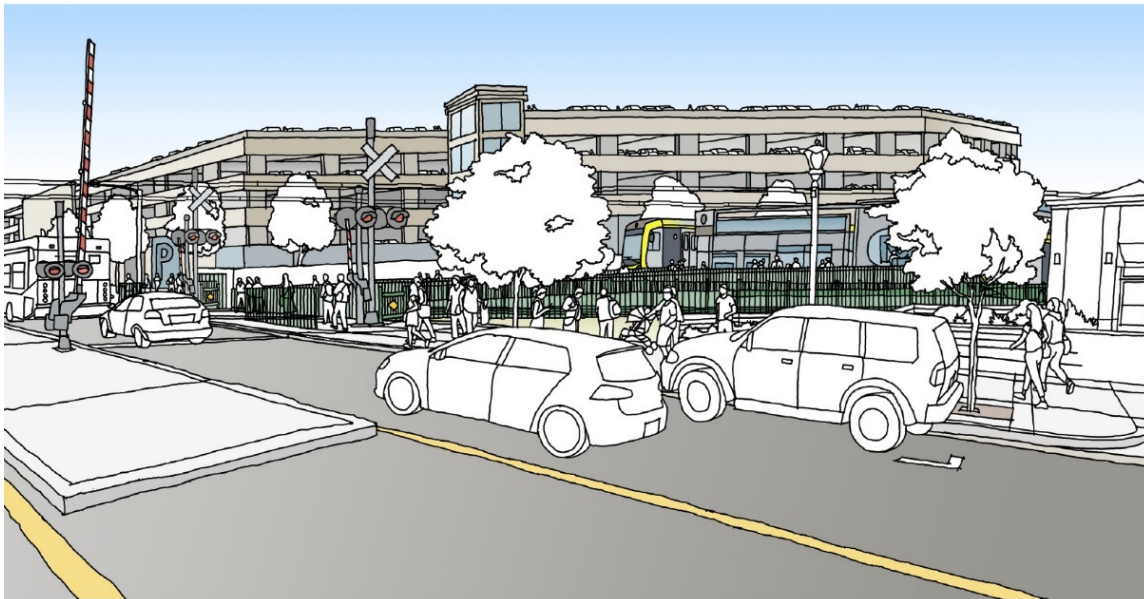
Source: Prepared for Metro by Cityworks Design in 2019

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

Existing Pioneer Boulevard



Proposed Pioneer Boulevard



Source: Prepared for Metro by Cityworks Design 2020

Project components would 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 would not significantly increase, and the effects of glare would 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 would be neutral since project components would be compatible with the visual character of the Affected Area for visual and viewer groups in this landscape unit would have little to no reaction to visual changes associated with the project components. Additionally, project components would not change the natural topography of the Affected Area for visual. At Woodruff Avenue/Flora Vista Street, the removal of the “Belle” public art cow statue would be considered an adverse effect since the statue has aesthetic value to the City of Bellflower. However, with implementation of Mitigation Measure VA-2 (Relocation of “Belle”), “Belle” would be relocated in coordination with the City of Bellflower, and no adverse effect would occur.

Summary of Visual Quality for Alternative 1: Alternative 1 would not change the natural topography of the Affected Area for visual and would 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 would not significantly increase, and the effects of glare would 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 proposed LRT tracks) could be removed, which would make the refinery storage tank cars more visible to sensitive viewers (residents). Views of the storage tank cars would not be visually compatible with the surrounding residential area, and residents would be sensitive to the change in visual character. While Alternative 1 would not adversely affect views of several scenic resources, the “Belle” public art cow statue, which has aesthetic value to the City of Bellflower, would be removed. Therefore, adverse visual effects would 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 would occur. Under NEPA, with the implementation of mitigation, Alternative 1 would not result in adverse effects related to visual character and quality.

4.4.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Landscape units in Alternative 2 include Downtown Mid-Rise and High-Rise, Industrial, Industrial and Residential, Residential, Suburban Residential and Industrial, and Suburban Residential. The location of each landscape unit is shown in Figure 4.4-1 and Figure 4.4-2. The landscape units applicable to Alternative 2 are located in the same jurisdictions as Alternative 1. Additionally, project components would be placed in the same location as Alternative 1 south of Alameda Street/Bay Street.

Alternative 2 would introduce the same visual elements and potential to visually change the Affected Area for visual as Alternative 1. Alternative 2’s effect on visual character and quality would be most visible where the alignment parallels and project components face a street right-of-way and along the Paramount and Bellflower Bike Trails.

While the Industrial Landscape Unit for Alternative 2 north and west of Alameda Street/Bay Street would be different from Alternative 1, Alternative 2 would be primarily underground and would not alter visual quality in the Industrial Landscape Unit north and west of this intersection. See Section 4.4.3.2 (including Table 4.4.4 through Table 4.4.8) for a detailed

assessment of the change in visual quality associated with each project component in each landscape unit applicable to Alternative 2. Figure 4.4-3 through Figure 4.4-10 depict changes in visual character and quality at locations along the alignment where Alternative 2 would introduce visually prominent features and/or where Alternative 2 would be located in an area with sensitive viewers (e.g., residents and visitors of scenic resources).

Downtown Mid-Rise and High-Rise Landscape Unit: The Downtown Mid-Rise and High-Rise Landscape Unit is only located in the downtown Los Angeles section of Alternative 2 and would be primarily underground in this landscape unit. Project components and any potential changes in lighting levels would primarily be visible at station areas. Any potential sources of glare would also be from station areas. Sensitive viewers in the Affected Area for visual for this landscape unit include residents and visitors of downtown Los Angeles.

Table 4.4.9 summarizes the potential effects to the visual character, viewer sensitivity, and visual quality in the Downtown Mid-Rise and High-Rise Landscape Unit. Overall, the change in visual quality in this landscape unit would be neutral since project components would be compatible with the visual character of the Affected Area for visual and viewer groups in this landscape unit would have little to no reaction to visual changes associated with the project components. The Affected Area for visual currently has a substantial amount of nighttime lighting, and the level of nighttime lighting would not significantly increase. The effects of glare would be similar to existing conditions. Additionally, project components would not obstruct views of scenic resources. Therefore, adverse visual effects are not expected in this landscape unit.

Summary of Visual Quality for Alternative 2: Alternative 2 would not change the natural topography of the Affected Area for visual and would 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 in the Affected Area for visual would not significantly increase, and the effects of glare would 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 proposed LRT tracks) could be removed, which would make the refinery storage tank cars more visible to sensitive viewers (residents). Views of the storage tank cars would not be visually compatible with the surrounding residential area, and residents would be sensitive to the change in visual character. Additionally, Alternative 2 would remove the “Belle” public art cow statue, which has aesthetic value to the City of Bellflower, from the PEROW. Therefore, adverse visual effects would 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 would occur. Under NEPA, with the implementation of mitigation, Alternative 2 would not result in adverse effects related to visual character and quality.

Table 4.4.9. Project Components' Effects on Visual Character and Quality – Downtown Mid-Rise and High-Rise Landscape Unit

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
<p>Station Areas (Station Entrances)</p> <ul style="list-style-type: none"> ▪ 7th St/Metro Center ▪ South Park/Fashion District 	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Scale and massing of station entrances would be consistent and fit with visual character and context of Affected Area. ▪ Design would be sensitive to specific urban context of each station and in compliance with MRDC or equivalent and Metro's Standard/Directive Drawings. ▪ Public art would be installed to improve visual character per MRDC or equivalent and Metro's <i>Systemwide Station Design Standards</i> and <i>Art Program Policy</i>. <p>7th St/Metro Center Station: Station entrances would be in area with mid- and high-rise structures; integrated into an existing building and on a surface parking lot.</p> <p>South Park/Fashion District Station: Station entrances would be in area with low- and mid-rise structures; would be integrated into existing buildings.</p> <p>Scenic Resources: Station elements would not alter the visual character of scenic resources.</p> <p>Lighting: Lighting is not expected to extend beyond station areas. Type and level of lighting would be similar to that currently present in the Affected Area and would not affect visual character.</p> <p>Glare: See Table 4.4.3. Project components would follow MRDC or equivalent, Metro's <i>Systemwide Station Design Standards</i>, and Standard/Directive Drawings. Project components would not create</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not include features that would detract from the visual character and quality of Affected Area. <p>Scenic Resources: Views of scenic resources (Barker Brothers Building, Southern California Gas Complex, Garment Capitol Building, and Textile Center Building) would not be obstructed or altered and would remain available to viewer groups.</p> <p>Lighting: Affected Area currently has a substantial amount of nighttime lighting. Type and level of lighting at station areas would be similar those currently present in the Affected Area. Per MRDC, all light sources at station areas would be directed downward to minimize potential spillover onto surrounding properties, including light-sensitive uses.</p> <p>Glare: Station elements would be treated so that new sources of glare are not created and would not affect viewer sensitivity.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visible elements and lighting levels would be compatible with the existing visual character of Affected Area. ▪ Viewers would have little to no reaction to the change. ▪ No new sources of glare would be created.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
	<p>new sources of glare and would not affect the visual character around station areas. Vertical stainless-steel elements and glass art panels would be dulled so that new sources of glare would not be created.</p>		
<p>LRT Tracks, Tunnels, TPSS</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Underground; not visible. <p>Scenic Resources: Project components not within viewshed of scenic resources. Lighting and Glare: Underground; not visible.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Underground; not visible. <p>Scenic Resources: Project components not within viewshed of scenic resources. Lighting and Glare: Underground; not visible.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Underground; not visible.
<p>Ventilation Structures and TC&C Houses</p>	<p>Compatible.</p> <ul style="list-style-type: none"> ▪ Constructed of small buildings that would be compatible with surrounding low-, mid, and high-rise structures. <p>Scenic Resources: Project components would not alter the visual character of scenic resources. Lighting and Glare: No lighting proposed for structures. Materials to be used would not create new sources of glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> ▪ Visible in foreground; would not alter visual character and quality of the Affected Area. <p>Scenic Resources: Project components would not obstruct views of scenic resources. Lighting and Glare: Project components would not create new sources of light and glare. Viewer sensitivity would not be altered.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> ▪ Visual character and quality, views of scenic resources, and level of lighting and glare would not be altered. ▪ Viewer groups would have little to no reaction to the change.

Project Components	Visual Character	Viewer Sensitivity	Change in Visual Quality ¹
Radio Antennas	<p>Compatible.</p> <ul style="list-style-type: none"> Height consistent with mid-rise structures in Affected Area; would not degrade overall visual character and quality of Affected Area. <p>Scenic Resources: Project components would not alter the visual character of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Visible in foreground; would not detract from visual character and quality of Affected Area. <p>Scenic Resources: Project components would not obstruct views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Visual character and quality of the Affected Area would not change. Viewer groups would have little to no reaction to the change. New sources of light and glare would not be created.
Landscape and Billboard Removal	<p>Compatible.</p> <p>Landscaping: Alignment would be primarily underground. New landscaping would be designed to complement character of the surrounding environment; existing sparse landscaping at station areas to be removed for station entrances. Landscaping would not alter overall visual character and quality of the Affected Area.</p> <p>Billboard: No billboards in this landscape unit.</p> <p>Scenic Resources: Project components would not alter the visual character of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Low.</p> <ul style="list-style-type: none"> Noticeable in foreground; changes to landscaping would not alter visual character and quality of the Affected Area or obstruct views of scenic resources. <p>Scenic Resources: Project components would not obstruct views of scenic resources.</p> <p>Lighting and Glare: Project components would not create new sources of light and glare.</p>	<p>Neutral.</p> <ul style="list-style-type: none"> Changes in landscaping not expected to alter visual character and quality of Affected Area. Views of scenic resources would remain available in Affected Area. Viewer groups would have little to no reaction to the change. New sources of light and glare would not be created.

Parking Facilities, OCS Poles and Overhead Wires, Fences and Retaining Walls, Sound Walls, Radio Houses, Aerial Structures, Pedestrian Bridges, Grade-Crossing Modifications and Street Closures. None proposed in this landscape unit.

Source: Metro 2021o

Note: LRT = light rail transit; MRDC = Metro Rail Design Criteria; OCS = overhead catenary system; TC&C = train control and communications; TPSS = traction power substation

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

4.4.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would be shorter than Alternatives 1 and 2. As a result, Alternative 3 would have fewer effects on visual character and quality than Alternatives 1 and 2. Alternative 3 would follow the same alignment as Alternatives 1 and 2 from 55th Street/Long Beach Avenue to South Street/PEROW. Landscape units in Alternative 3 include Industrial, Industrial and Residential, Residential, Suburban Residential and Industrial, and Suburban Residential. The Industrial Landscape Unit and Industrial and Residential Landscape Unit applicable to Alternative 3 are generally located at and south of 55th Street/Long Beach Avenue. Project components, as well as new sources of light and glare, would not be introduced north of 55th Street/Long Beach Avenue and, thus, no changes to visual character and quality would occur in these two landscape units north of 55th Street/Long Beach Avenue. Alternative 3 would introduce the same visual elements, the same sources of light and glare, and have the same potential to visually change the Affected Area for visual as Alternatives 1 and 2. However, no station entrances would be introduced since no underground alignment is proposed for this alternative. Alternative 3 would either be elevated on aerial structures or at-grade within rail ROWs.

Table 4.4.1 details the scenic resources in the Affected Area for visual. See Section 4.4.3.2 for a discussion of the potential adverse effects in the landscape units that are located in the Affected Area for visual of Alternative 3. Table 4.4.4 through Table 4.4.8 provide a detailed assessment of the change in visual quality associated with each project component for each landscape unit under Alternative 3. Figure 4.4-4 through Figure 4.4-10 depict changes in visual character and quality at locations along the alignment where Alternative 3 would introduce visually prominent features and/or where Alternative 3 would be located in an area with sensitive viewers (e.g., residents, users of recreational facilities, and visitors of scenic resources).

Summary of Visual Quality for Alternative 3: As discussed for Alternative 1 and Alternative 2, an adverse effect is anticipated at Somerset Boulevard and residents would be sensitive to the change in visual character. The removal of the “Belle” public art cow statue from the PEROW would also result in adverse effects because the statue has aesthetic value to the City of Bellflower. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would be required to eliminate these adverse effects. Under NEPA, with the implementation of mitigation, Alternative 3 would not result in adverse effects related to visual character and quality.

4.4.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would be shorter than Alternatives 1 through 3. Alternative 4 would follow the same alignment as Alternatives 1 through 3 from Main Street/San Pedro Subdivision ROW to Pioneer Station and would be in the following landscape units: Industrial, Suburban Residential, and Suburban Residential and Industrial. The Industrial Landscape Unit applicable to Alternative 4 is generally located at and south of Main Street/San Pedro Subdivision ROW. Project components, as well as new sources of light and glare, would not be installed north of Main Street/San Pedro Subdivision ROW and, thus, no changes in visual character and quality would occur north of Main Street/San Pedro Subdivision ROW. Alternative 4 would have fewer effects on visual character and quality than Alternatives 1 through 3 since Alternative 4 is a shorter alignment. At and south of Main Street/San Pedro Subdivision ROW, Alternative 4 would introduce the same visual elements, as well as new sources of light and glare, as Alternative 1. Alternative 4 would either be elevated on an aerial structure or at-grade within the rail ROWs.

Table 4.4.1 details the scenic resources in the Affected Area for visual. See Section 4.4.3.2 for a discussion of the potential adverse effects in the landscape units that are located in the Affected Area for visual of Alternative 4. Table 4.4.4, Table 4.4.7, and Table 4.4.8 provide a detailed assessment of the change in visual quality associated with each project component in each landscape unit for Alternative 4. Figure 4.4-8 through Figure 4.4-10 depict changes in visual character and quality at locations along the alignment where Alternative 4 would introduce visually prominent features and/or where Alternative 4 would be located in an area with sensitive viewers (e.g., residents, users of recreational facilities, and visitors of scenic resources).

Summary of Visual Quality for Alternative 4: As discussed for Alternatives 1, 2, and 3, an adverse effect is anticipated at Somerset Boulevard. The removal of the “Belle” public art cow statue from the PEROW would also result in adverse effects because the statue has aesthetic value to the City of Bellflower. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would be required to eliminate adverse effects. Under NEPA, with the implementation of mitigation, Alternative 4 would not result in adverse effects related to visual character and quality.

4.4.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

Design Options 1 and 2 would be located in the Downtown Low-Rise and Mid-Rise Landscape Unit within the City of Los Angeles. No scenic vistas are available in the Affected Area for visual. Table 4.4.3 evaluates whether each project component would be compatible with the existing visual character of the Affected Area for visual and viewers’ sensitivity to the change in visual character associated with each project component in this landscape unit. Under Design Option 1, little to no changes in visual character, viewer sensitivity, and visual quality would occur at the LAUS Forecourt since a station entrance would not be constructed in the LAUS Forecourt area and landscaping along the perimeter of the LAUS parking lot would not be removed.

Lighting from station entrances would occur at-grade with surrounding uses. In all other areas, lighting would occur underground. The types and level of lighting that would be used at station entrances would be similar to the surrounding areas. Stainless-steel elements, glass canopies, and glass art panels would be incorporated into the station entrances. For Design Option 1, these elements are not expected to create new sources of glare since the station entrance would be inside LAUS. For Design Option 2, these elements are not expected to create new sources of glare because the station elements would be designed and treated in a manner that would not create new sources of glare. Design Options 1 and 2 would follow the MRDC or equivalent, Metro’s *Systemwide Station Design Standards*, *Station Design Standards*, and *Standard/Directive Drawings*. The design options would not create substantial light or glare with compliance with these requirements. Lighting at the station entrances would be consistent with the visual character of the Affected Area for visual and would not affect viewer sensitivity. The design options would not create new sources of glare.

Changes to visual quality are expected to be neutral because the proposed station entrance and ventilation structures would be consistent and integrated with the scale, massing, character, and lighting of the concourse area within LAUS and the baggage area parking lot behind the LAUS building. Under Design Option 2, changes to visual quality are expected to be neutral as the proposed station entrances and ventilation structures located on the east side of a low-rise commercial building and on a surface parking lot of LADWP Materials

Testing Laboratory would be consistent and integrated with the scale, massing, character, and lighting of the surrounding area.

Design Options 1 and 2 would not degrade the visual character and quality of the Affected Area for visual. The installation of public art at the station entrances per MRDC or equivalent, *Metro Systemwide Station Design Standards* (Metro 2018e), and *Metro Art Program Policy* (Metro 2020g) would improve the visual character of the station entrances and would not cause station elements to create new sources of glare. Further, the design options would not remove landscaping or alter natural topography. Sensitive viewers for Design Option 1, which include tourists who visit LAUS for its aesthetic value as a historic resource, would have little to no reaction to the changes associated with this design option because the proposed changes would be consistent with the existing Metro B/D (Red/Purple) Line Station and would be located in an area where historical design elements have been integrated with modern elements. Sensitive viewers for Design Option 2, which include residents, would have little to no reaction to the changes. Changes to visual quality would be neutral since the project components would be compatible with the visual character of the Affected Area for visual and viewer sensitivity to the proposed changes would be low. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to visual character and quality.

4.4.3.7 Maintenance and Storage Facility

Paramount MSF Site Option: No scenic vistas, unique visual elements, landforms, or topographic features are present in the Affected Area for visual for the Paramount MSF site option. The MSF site option would introduce low-rise structures, storage tracks, lead tracks, and other industrial-related features to the Affected Area for visual. Landscaping along the perimeter and within the MSF site option would be removed; lead tracks along the San Pedro Subdivision ROW and PEROW would be installed; and the existing grade crossing where the San Pedro Subdivision ROW intersects with Rosecrans Avenue would be modified. Security lighting for all buildings and areas within the MSF site option would be provided.

The scale and massing of the proposed structures and other elements associated with the MSF site option would be consistent and fit with the surrounding low-rise industrial and commercial structures. While landscaping would be removed and industrial-related visual elements would be added to the MSF site option, viewer groups would have little to no reaction to the proposed changes given the industrial and commercial character of the Affected Area for visual. Views of the MSF site option would primarily be available at the surface parking lot of Paramount Entertainment Center. Grade-crossing modifications where the San Pedro Subdivision ROW intersects with Rosecrans Avenue would be similar in visual character as the existing grade crossing in the same area.

Lighting at the MSF site option 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 1-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 outside of the MSF site boundaries since light sources would be shielded so that nighttime lighting is focused on the MSF site. Additionally, the MSF site option does not include the use of materials that would be a substantial source of glare. Nighttime lighting

levels and would be consistent with the visual character of the Affected Area for visual, and no sensitive viewers would be affected by lighting and glare.

Changes in visual quality would be neutral since the visual character of the area, lighting levels, and sources of light and glare would be consistent and compatible with the commercial and industrial character of the Affected Area for visual, and viewer groups would have little to no reaction to the proposed changes. No sensitive viewers would have views of the project components associated with the MSF site option. Development of the Paramount MSF site option would not result in the visual degradation of the area. Under NEPA, the Paramount MSF site option would not result in adverse effects related to visual character and quality.

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

Similar to the Paramount MSF site option, lighting is not expected to spillover outside of the MSF site boundaries since light sources would be shielded so that nighttime lighting is focused on the MSF site. Additionally, the MSF site option does not include the use of materials that would be a substantial source of glare. Nighttime lighting levels would be consistent with the visual character of the Affected Area for visual, and no sensitive viewers would 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 this MSF site option (along Somerset Boulevard and PEROW, respectively) partially obstruct views of this MSF site option. The existing landscaping and barriers along the perimeter of the Bellflower MSF site option would either remain or be replaced with other types of landscaping and barriers that would obstruct views of this MSF site option from the surrounding residential uses. As a result, viewer groups would have little to no reaction to changes associated with the Bellflower MSF site option. Changes in visual quality would be neutral since the visual character of the area, nighttime lighting levels, and sources of glare would be consistent and compatible with the existing visual character of the Affected Area for visual, and viewer groups would have little to no reaction to the proposed 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 option. The landscaping and barriers would also limit the amount of light that would spill over onto nearby properties. Development of the Bellflower MSF site option would not result in the visual degradation of the area. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to visual character and quality.

4.4.4 Project Measures and Mitigation Measures

4.4.4.1 Project Measures

The following project measures would be implemented for Alternatives 1, 2, 3, and 4.

- VA PM-1 Design Standards.** Project components, including but not limited to track alignment, auxiliary facilities, parking facilities, and MSF site options, would be designed per MRDC, Metro’s *Systemwide Station Design Standards*, and Standard/Directive Drawings, or equivalent.
- VA PM-2 Public Art.** Public art would be installed at station areas and would follow MRDC, Metro’s *Systemwide Station Design Standards*, and *Metro Art Program Policy*, or equivalent.
- VA PM-3 Landscaping.** New landscaping would be installed consistent with MRDC and *Systemwide Station Design Standards*, or equivalent.
- VA PM-4 Landscaping Screening.** TPSSs in residential areas would be landscaped or incorporate design features to screen or improve the appearance of structures.
- VA PM-5 Landscaping at Bellflower MSF Site Option.** At the Bellflower MSF site option, existing landscaping and barriers facing residential areas would either remain in place or would be replaced with other types of landscaping and barriers that would obstruct views of the Bellflower MSF site option from residential areas.
- VA PM-6 Local Zoning Ordinances.** Project elements that are located on properties outside of the rail ROW and public ROW would adhere to local zoning ordinances.
- VA PM-7 Lighting.** Operational lighting would be consistent with MRDC or equivalent. Lighting would be directed away from surrounding properties.

4.4.4.2 Mitigation Measures

The following mitigation measures would be implemented for Alternatives 1, 2, 3, and 4 to minimize adverse effects related to visual character and quality at Somerset Boulevard and associated with the “Belle” public art cow statute:

- VA-1 Screening at Somerset Boulevard.** The existing World Energy landscaping and decorative wall north of Somerset Boulevard and east of the proposed light rail transit tracks would remain in place. If the existing decorative screening wall and/or landscaping directly south of the World Energy storage tracks and east of the proposed light rail transit tracks are removed, these screening elements would be replaced with a new screening wall and/or landscaping. A decorative screening wall and/or landscaping would be placed within the PEROW between the proposed 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 would 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 would be subject to approval by the City of Bellflower.

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

4.4.5 California Environmental Quality Act Determination

4.4.5.1 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

No scenic vistas are present in the Affected Area for visual. As such, the proposed underground, at-grade, and aerial project components are 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 and west-facing views of the downtown Los Angeles skyline 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 and skyline.

At the I-10 freeway, the proposed aerial structure would partially obstruct view of the downtown Los Angeles skyline. However, the view of the downtown Los Angeles skyline at the I-10 freeway is not considered a scenic vista because the view is limited to motorists traveling along the freeway, viewing duration of the skyline is short, and motorists are focused on the road. Additionally, overhead utility poles and overhead wires are visible in the foreground and do not beneficially contribute to the skyline view. Thus, no impacts on scenic vistas would occur and mitigation is not required.

Alternatives 2, 3, and 4

No scenic vistas are present in the Affected Area for visual. None of the views within the Affected Area for visual are considered unique or of aesthetic significance. The built-out urban landscape generally prevents clear views of the mountains and the downtown Los Angeles skyline, where available. Therefore, no impacts on scenic vistas would occur and mitigation is not required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: No scenic vistas are located in the Affected Area for visual for Design Options 1 and 2. Therefore, no impacts on scenic vistas would occur and mitigation is not required.

Maintenance and Storage Facility

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

4.4.5.2 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.

Alternatives 1, 2, 3, and 4

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.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: 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

Paramount MSF Site Option and Bellflower MSF Site Option: 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.

4.4.5.3 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Figure 4.4-3 through Figure 4.4-10 show existing and project-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 Project would occur in an urbanized area, a significant impact would occur if the Project 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 project elements that would be located on properties outside of the rail ROWs and public street rights-of-way (such as station entrances and TPSSs) would comply with local zoning ordinances as they pertain to scenic quality.

Alternative 1 would remove the existing decorative wall and landscaping on the south side of the World Energy storage tracks (east of the proposed 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 would 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 proposed LRT tracks) would make the refinery storage tank cars within the PEROW more apparent along Somerset Boulevard and would 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) would be implemented so that the Project would comply with Section 44.82(53) of the City of Paramount Municipal Code and views of the World Energy storage tracks would 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, Alternative 1 would be inconsistent with the program’s intent of promoting visual arts in the city. So that the city would not lose one of its permanent outdoor artworks, Mitigation Measure VA-2 (Relocation of “Belle”) would require Metro to coordinate with the city to relocate the “Belle” public art cow statue so that the public art cow statue would continue to be displayed in the city.

Alternative 1 would 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) mandates the inclusion of art in the design of its transit systems; 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 Project would 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 would occur without implementation of mitigation measures. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would 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.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 would be located in the same jurisdictions as Alternative 1, would introduce the same visual elements as Alternative 1, and project components would be placed in the same location as Alternative 1 south of Alameda Street/Bay Street. As with Alternative 1, significant impacts on visual character and quality would occur without implementation of mitigation

measures. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would 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.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would be located in the same jurisdictions and would introduce the same visual components at the same location as Alternatives 1 and 2 from 55th Street/Long Beach Avenue to the southern terminus at Pioneer Station. Alternative 3 is a shorter alignment than Alternatives 1 and 2 and, as a result, would have fewer effects on visual character and scenic quality as Alternatives 1 and 2. Nevertheless, significant impacts on visual character and quality would occur without implementation of mitigation measures. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would 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.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would introduce the same visual elements at the same location as Alternatives 1, 2, and 3 from Main Street/San Pedro Subdivision ROW to the southern terminus at Pioneer Station. As a result, Alternative 4 would have fewer effects on visual character and scenic quality than Alternatives 1, 2, and 3. Nevertheless, significant impacts on visual character and quality would occur without implementation of mitigation measures. Implementation of Mitigation Measures VA-1 (Screening at Somerset Boulevard) and VA-2 (Relocation of “Belle”) would 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 Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would be in the City of Los Angeles, which is considered an urbanized area under *CEQA Guidelines* Section 15387. Design Option 1 would follow MRDC or equivalent, *Metro Art Program Policy* (Metro 2020g), *Systemwide Station Design Standards* (Metro 2018e), and *Standard/Directive Drawings* (Metro 2017d). Although Metro projects are not required to adhere to local zoning ordinances, certain project components that would be located on properties outside of the public street rights-of-way would comply with local zoning ordinances as they pertain to scenic quality, where applicable. Therefore, impacts would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

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

4.4.5.4 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

North of 14th Street/Long Beach Avenue, lighting associated with Alternative 1 would primarily emanate from station entrances, which would not significantly increase the amount of lighting in the Affected Area for visual, which currently has a substantial amount of nighttime lighting and glare. Lighting at the station entrances are not expected to extend beyond the station areas. Additionally, the type and level of lighting would be similar to the type and lighting levels in the Affected Area for visual.

South of 14th Street/Long Beach Avenue, lighting would primarily emanate from LRVs and station areas (including at-grade and above-grade station platforms and parking facilities). Project-related lighting would primarily occur along the rail ROW, street rights-of-way, and/or proposed parking facilities. Lighting would be designed per MRDC or equivalent and would be directed toward the rail ROWs, street rights-of-way, and/or proposed parking facilities. Light emanating from the proposed aerial structures would 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 proposed surface parking lots and stations would 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 would 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 proposed LRVs south of Somerset Boulevard would be consistent with vehicle lights along surrounding streets, which currently produce transportation-related light. LRV lighting would also be consistent with existing lighting levels along the Bellflower Bike Trail.

Existing walls that separate adjacent properties from the PEROW would 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, Flora Vista Park to South Street).

None of the project components are expected to be a substantial source of glare. Station areas would 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 art panels, and glass canopy. The glass canopy would be placed horizontally above the stations. The angle in which the canopy would be placed is not expected to create new sources of glare around the station areas. Vertical stainless-steel elements and glass art panels could create new sources of glare; however, based on Metro design criteria and standards, the elements would be dulled so that new sources of glare are not created.

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

Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 would involve similar sources of light and glare as Alternative 1. The area north of 14th Street/Long Beach Avenue currently has a substantial amount of existing lighting and glare in the Affected Area for visual, and the proposed station entrances would not significantly increase the amount of lighting in the Affected Area for visual. Lighting at the station entrances are not expected to extend beyond the station areas. South of 14th Street/Long Beach Avenue, project-related lighting would primarily occur within the rail ROW, street rights-of-ways, and/or proposed parking facilities. Project components are not expected to result in a substantial change in existing light and glare in the Affected Area for visual. Therefore, impacts would be less than significant and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would not create any new or additional light sources or cast glare north of 55th Street/Long Beach Avenue. Light sources and lighting levels south of 55th Street/Long Beach Avenue would be the same as Alternatives 1 and 2. Lighting and glare from Alternative 3 would affect fewer areas since Alternative 3 would be a shorter alignment. Project-related lighting would primarily occur within the rail ROWs, street rights-of-way, and on properties acquired for the project components. Lighting from LRVs and station platforms would be directed toward the rail ROWs. Therefore, impacts would be less than significant and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would not create any new or additional light sources or cast glare north of Main Street/San Pedro Subdivision ROW. Light sources and lighting levels south of Main Street/San Pedro Subdivision ROW would be the same as Alternatives 1 through 3. Lighting and glare from Alternative 4 would affect fewer areas than Alternatives 1, 2, and 3 since Alternative 4 would be a shorter alignment. Project-related lighting would primarily occur within the rail ROWs and on properties acquired for the project components. Lighting from

LRVs and station platforms would be directed toward the rail ROWs. Therefore, impacts would be less than significant and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: Design Option 1 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 the LAUS MWD station would occur at-grade with surrounding uses within the LAUS concourse area, where similar light sources and levels currently exist. In all other areas, lighting would occur underground. Stainless-steel elements and glass art panels would be incorporated into the station entrance, and these elements are not expected to create new sources of glare since the station entrance would be inside LAUS. Design Option 1 would follow the MRDC or equivalent, Metro's *Systemwide Station Design Standards*, *Station Design Standards*, and *Standard/Directive Drawings*. Design Option 1 would not create substantial light or glare in the Affected Area for visual with compliance with these requirements. Therefore, impacts related to light and glare would be less than significant and mitigation would not be required.

Design Option 2: Add Little Tokyo Station: Design Option 2 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 the station entrances would occur at-grade with surrounding uses. In all other areas, lighting would occur underground. The types and level of lighting that would be used at the station entrances would be similar to the surrounding area. Station entrances would be located on the easterly side yard of a commercial development and on a surface parking lot of a LADWP Materials Testing Laboratory. Stainless-steel elements, glass canopies, and glass art panels would be incorporated into the station entrances. These elements are not expected to create new sources of glare because station areas would be designed so that no new sources of glare are created through the use and placement of stainless steel and glass art panels. Design Option 2 would follow the MRDC or equivalent, Metro's *Systemwide Station Design Standards*, *Station Design Standards*, and *Standard/Directive Drawings*. Design Option 2 would not create substantial light or glare in the Affected Area for visual if these requirements are complied with. Therefore, impacts related to light and glare would be less than significant and mitigation would not be required.

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options would include security lighting for all buildings and areas within the MSF site option. Per MRDC, lighting at the MSF site option 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 would be shielded so that nighttime lighting is focused on the MSF site. Additionally, the MSF site option does not include the use of materials that would be a substantial source of glare. Thus, impacts on lighting and glare would be less than significant and mitigation would not be required.

4.5 Air Quality

This section summarizes the existing air quality conditions in the Affected Area, daily air pollutant emissions under the No Build and Build Alternatives, including design options and MSF site options, 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 2021i) (Appendix J).

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), South Coast Air Quality Management District (SCAQMD) *Air Quality Management Plan* (AQMP) (SCAQMD 2017), SCAG 2016-2040 RTP/SCS (SCAG 2016a) and 2020-2045 RTP/SCS, *2019 and 2021 Federal Transportation Improvement Program* (FTIP) (SCAG 2018), and Metro *Green Construction Policy* (Metro 2011b). 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, 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 (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter ten microns or less in diameter (PM₁₀), 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 particulate matter (PM), diesel PM, and toxic air contaminants.

Table 4.5.1. Criteria Air Pollutants and Characteristics

Pollutant	Characteristics
Carbon Monoxide (CO)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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 greatest source of atmospheric O₃ formation. Short-term exposure (lasting for a few hours) to O₃ 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)	<ul style="list-style-type: none"> Formed in the atmosphere through chemical reaction between NO and atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation and contribute to the formation of PM₁₀. 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)	<ul style="list-style-type: none"> 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})	<ul style="list-style-type: none"> Formed in the atmosphere from gases (i.e., SO₂, 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> ▪ 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 SO₂ emissions and limits on sulfur content of fuels have reduced atmospheric SO₂ concentrations. Highest levels of SO₂ 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)	<ul style="list-style-type: none"> ▪ 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)	<ul style="list-style-type: none"> ▪ Can exist as PM₁₀ 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	<ul style="list-style-type: none"> ▪ 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; NO_x = 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, O₃, NO₂, PM₁₀, PM_{2.5}, SO₂, and Pb. The CCAA is administered by the California Air Resources Board (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/m³ = micrograms per cubic meter; “—” = not available

4.5.1.2 Methodology

The Study Area is located within the LA County portion of the South Coast Air Basin (Basin). The Basin represents the Affected Area for air at the regional scale because all sources of emissions associated with construction and operations would 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 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 would be generated by the Build Alternatives—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 would be generated by the Build Alternatives 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 each of the Build Alternatives.

The direct sources of operational air pollutant emissions with implementation of the Project would be Metro employee vehicle and vendor trips and area/energy sources associated with operation of the rail system and the MSF site options, 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 site options would 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 2016.3.2) is the preferred regulatory model for estimating air pollutant emissions from land use development projects under CEQA. CalEEMod 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 site plans for the Paramount and Bellflower MSF site options developed by Metro. As the MSF sites are an underlying component of all of the Build Alternatives and design options and would not be implemented independently, operational emissions associated with the MSF are accounted for in the air quality impact discussions for each of the Build Alternatives and design options.

As a transit project, the effects that project implementation would have on regional air quality are best represented in terms of long-term changes in regional transportation emissions from vehicles traveling on the roadway network within the Affected Area for air. Implementation of the Project would 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 under Existing Conditions, if each of the Build Alternatives were operational in 2017, in 2042 under the No Build Alternative, and with implementation of each of the Build Alternatives in 2042. Results of the transportation modeling demonstrate that regional VMT reductions would be between 0.01 percent and 0.05 percent in 2017 depending on the Build Alternative. By 2042, induced regional VMT reductions resulting from project implementation would range between 0.01 percent and 0.07 percent. The 2042 analysis represents a characterization of the holistic, long-term benefits of the Project as transit-oriented development expands within the Affected Area for air around the LRT corridor.

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

Scenario	2017 Daily Total ¹	2017 Change vs. Existing Condition ²		2042 Daily Total ³	2042 Change vs. No Build ⁴		2042 Change vs. Existing Condition ⁵	
		Change	%		Change	%	Change	%
No Build	—	—	—	606,329,900	—	—	—	30.89%
Existing 2017	463,245,800	—	—	—	—	—	—	—
Alt. 1	463,029,700	-216,100	(0.05%)	605,938,400	-391,500	(0.06%)	142,692,600	30.80%
Alt. 2	463,030,800	-215,000	(0.05%)	605,952,500	-377,400	(0.06%)	142,706,700	30.81%
Alt. 3	463,174,000	-71,800	(0.02%)	606,199,000	-130,900	(0.02%)	142,953,200	30.86%
Alt. 4	463,209,500	-36,300	(0.01%)	606,259,100	-70,800	(0.01%)	143,013,300	30.87%
Design Option 1	463,009,500	-236,300	(0.05%)	605,892,100	-437,800	(0.07%)	142,646,300	30.79%
Design Option 2	463,027,300	-218,500	(0.05%)	605,931,500	-398,400	(0.07%)	142,685,700	30.80%

Source: Compiled for Metro in 2020

Note: mph = miles per hour; “-“ or () = reduction/decrease; “—” = not applicable

¹ “2017 Daily Total” evaluates “Existing 2017 + Build Alternative)

² “2017 Change vs. Existing Condition”: Difference between the Build Alternative and Existing 2017 Scenario

³ “2042 Daily Total” evaluates the Build Alternative in year 2042

⁴ “2042 Change vs. No Build”: Difference between the 2042 Build Alternative and No Build Scenario

⁵ “2042 Change vs. Existing Condition”: Difference between the 2042 Build Alternative and Existing 2017 Scenario

CARB maintains a statewide mobile source emissions inventory, which is accessible through the mobile source Emission FActor (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 EMFAC2017. 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 each of the Build Alternatives in 2042 were estimated using EMFAC2017 and combined with operational emissions associated with the MSF site options analyzed in CalEEMod. The EMFAC2017 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 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.

In November 2019, the USEPA passed the Safer Affordable Fuel Efficient Vehicles Rule Part One, which revoked California’s authority to set state-specific fuel efficiency standards and zero-emission vehicle sales goals in future years. Beginning in 2021, previously applicable statewide requirements for zero-emission vehicle sales and fuel efficiency that were incorporated into EMFAC2017 will be rescinded, rendering the default EMFAC2017 database emission factors for future years potentially inaccurate. To account for the regulatory change,

CARB published off-model adjustment factors for emissions from light- and medium-duty autos and trucks (USEPA 2020) that were approved by USEPA in March 2020. The adjustment factors apply to exhaust emissions of total organic gases (excluding carbon dioxide, methane, and other exempt compounds), nitrogen oxides (NO_x), CO, and PM₁₀ and PM_{2.5}. The applicable adjustment factors for the 2042 analysis year were incorporated into the emissions calculations for induced changes to on-road VMT, as well as construction worker vehicle trips and MSF operational vehicle trips.

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, 2015

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 PM₁₀ 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 at the regional scale because all sources of emissions associated with construction and operations would 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 O₃, PM_{2.5} and Pb and a maintenance area for PM₁₀ and CO.

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	Nonattainment (Extreme)	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	Attainment	Attainment
	Annual Average	Attainment	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, 2017

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 shows 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 O₃, PM_{2.5} and PM₁₀. Additionally, LA County is in attainment of the CAAQS for sulfates and hydrogen sulfide, although it 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 37 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 proposed LRT corridor 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 project alignment.

SRA 1—Central Los Angeles County—extends southward to Slauson Avenue and eastward to I-710, encompassing portions of the Cities of Los Angeles, South Park, Vernon, and Huntington Park. 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 O₃, CO, NO₂, SO₂, PM₁₀, and PM_{2.5}. Table 4.5.6 summarizes the air quality data recorded at the LA-NMS monitoring site between 2015 and 2017. Concentrations of O₃, PM₁₀, 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 – 2017)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards		
		2015	2016	2017
Ozone (O ₃)	Maximum 1-Hour Concentration	0.104	0.103	0.116
	Days >0.09 ppm (CAAQS)	2	2	6
	Maximum 8-Hour Concentration	0.074	0.078	0.086
	Days >0.070 ppm (NAAQS/CAAQS)	6	4	16
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	3.2	1.9	N/A
	Days >20 ppm (CAAQS)	0	0	0
	Maximum 8-Hour Concentration	1.8	1.4	N/A
	Days >9.0 ppm (NAAQS/CAAQS)	0	0	0
Nitrogen Dioxide (NO ₂)	Maximum 1-Hour Concentration	0.079	0.065	0.081
	Days > 0.10 ppm (NAAQS)	0	0	0
	Annual Average	0.022	0.021	0.020
	>0.030 ppm (CAAQS)	No	No	No
Sulfur Dioxide (SO ₂)	Maximum 1-Hour Concentration	0.013	0.013	N/A
	Days >0.075 ppm (NAAQS)	0	0	0
	Maximum 24-Hour Concentration	N/A	N/A	N/A
	Days >0.040 ppm (CAAQS)	0	0	0
Respirable Particulate Matter (PM ₁₀)	Maximum 24-Hour Concentration	88.0	67.0	96.2
	Days >50 µg/m ³ (CAAQS)	26	18	40
	Annual Average Concentration	33.1	32.4	N/A
	>20 µg/m ³ (CAAQS)	Yes	Yes	0
Fine Particulate Matter (PM _{2.5})	Maximum 24-Hour Concentration	56.4	44.4	54.9
	Days >35 µg/m ³ (NAAQS)	7	2	6
	Annual Average Concentration	12.4	11.8	16.3
	>12 µg/m ³ (NAAQS/CAAQS)	Yes	No	Yes

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

SRA 12—South Central Los Angeles County—extends southward from Slauson Avenue to State Route 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 North Bullis Road, which measures and records concentrations of O₃, CO, NO₂, and PM_{2.5}. Table 4.5.7 summarizes the air quality data recorded at the Compton monitoring site between 2015 and 2017. Concentrations of O₃ and PM_{2.5} measured at the Compton site exceeded applicable state and federal AAQS from 2015 to 2017. 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 – 2017)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards		
		2015	2016	2017
Ozone (O ₃)	Maximum 1-Hour Concentration	0.091	0.098	0.092
	Days >0.09 ppm (CAAQS)	1	1	0
	Maximum 8-Hour Concentration	0.072	0.071	0.076
	Days >0.070 ppm (NAAQS/CAAQS)	1	1	6
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	4.4	4.4	N/A
	Days >20 ppm (CAAQS)	No	No	0
	Maximum 8-Hour Concentration	3.3	3.9	N/A
	Days >9.0 ppm (NAAQS/CAAQS)	No	No	0
Nitrogen Dioxide (NO ₂)	Maximum 1-Hour Concentration	0.074	0.064	0.099
	Days >0.10 ppm (NAAQS)	0	0	0
	Annual Average	0.017	0.016	0.016
	>0.030 ppm (CAAQS)	No	No	No
Fine Particulate Matter (PM _{2.5})	Maximum 24-Hour Concentration	41.3	36.4	66.7
	Days >35 µg/m ³ (NAAQS)	3	3	5
	Annual Average Concentration	11.8	11.1	13.2
	>12 µg/m ³ (NAAQS/CAAQS)	No	No	Yes

Source: SCAQMD 2018

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 Los Angeles 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 Project are best characterized by the concentrations of pollutants measured at the Compton monitoring station shown in Table 4.5.7. Within SRA 5, the project corridor runs between approximately 2.4 and 5.8 miles from the Compton monitoring station, and the topography and land use patterns along the project 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 project corridor within 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 O₃, CO, NO₂, SO₂, and PM₁₀ concentrations between 2013 and 2015

- Long Beach North (LBN): Located at 3648 North 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 NO₂ and PM_{2.5} since being activated in 2015

Table 4.5.8 summarizes the air quality data recorded at the nearest SRA 4 active site to the Affected Area for each pollutant between 2015 and 2017. The monitoring stations recorded several concentrations of O₃, PM₁₀, and PM_{2.5} exceeding applicable air quality standards during this timeframe. 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 – 2017)

Pollutant	Metric	Maximum Concentrations and Frequencies of Exceeded Standards		
		2015	2016	2017
Ozone (O ₃)	Maximum 1-Hour Concentration	0.104	0.079	0.082
	Days > 0.09 ppm (CAAQS)	2	0	0
	Maximum 8-Hour Concentration)	0.074	0.059	0.069
	Days > 0.070 ppm (NAAQS/CAAQS)	6	0	0
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	3.3	3.3	N/A
	Days > 20 ppm (CAAQS)	0	0	0
	Maximum 8-Hour Concentration	2.2	2.2	N/A
	Days > 9.0 ppm (NAAQS/CAAQS)	0	0	0
Nitrogen Dioxide (NO ₂)	Maximum 1-Hour Concentration	0.095	0.076	0.116
	Days > 0.10 ppm (NAAQS)	0	0	1
	Annual Average	0.020	0.019	0.025
	> 0.030 ppm (CAAQS)	No	No	No
Sulfur Dioxide (SO ₂)	Maximum 1-Hour Concentration	0.038	0.018	N/A
	Days > 0.075 ppm (NAAQS)	0	0	0
	Maximum 24-Hour Concentration	N/A	N/A	N/A
	Days > 0.040 ppm (CAAQS)	0	0	0
Respirable Particulate Matter (PM ₁₀)	Maximum 24-Hour Concentration	80.0	75.0	N/A
	Days > 50 µg/m ³ (CAAQS)	6	8	0
	Annual Average Concentration	31.5	32.0	N/A
	> 20 µg/m ³ (CAAQS)	Yes	Yes	0
Fine Particulate Matter (PM _{2.5})	Maximum 24-Hour Concentration	48.8	29.4	85.4
	Days > 35 µg/m ³ (NAAQS)	7	0	8
	Annual Average Concentration	12.9	12.0	12.8
	> 12 µg/m ³ (NAAQS/CAAQS)	Yes	Yes	Yes

Source: SCAQMD 2018

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

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 Project 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 (2018) 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	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Existing (2017)	66,263.0	1,604,017.0	424,311.0	4,155.3	113,725.0	35,789.5
No Build Alternative (2042)	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
Net Change	(39,277.4)	(814,326.3)	(229,887.7)	(606.8)	28,070.3	3,395.5
Percent Change	(59.3%)	(50.8%)	(54.2%)	(14.6%)	24.7%	9.5%

Source: Metro 2021i

Note: 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; PM₁₀ = respirable particulate matter of diameter less than 10 microns; ROG = reactive organic gases; SO_x = sulfur oxides; () = decrease

Emission reductions between Existing Conditions and the No Build Alternative are attributed to alternative-fueled passenger vehicles (i.e., electric and natural gas) added to the vehicle fleet and continued improvements in fuel efficiency. 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 EMFAC2017. The No Build Alternative would not reduce regional VMT as is the case with the Build Alternatives. Under NEPA, the No Build Alternative would not result in an adverse effect related to operational emissions.

4.5.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would not introduce a new substantial direct source of air pollutant emissions into the Affected Area for air. The primary direct source of emissions associated with each Build Alternative would be operation of the MSF, which would 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 would 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 would 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 ozone precursor emissions would be generated through energy use (e.g., LRT propulsion, lighting, and accessory equipment at station platforms, and MSF operations).

Implementation of Alternative 1 would induce changes in regional transportation patterns by replacing vehicle trips with transit ridership. Every displaced vehicle start and VMT induced by project implementation would indirectly reduce regional emissions related to transportation. As shown in Table 4.5.3, implementation of Alternative 1 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 216,100 miles relative to Existing Conditions. By 2042, Alternative 1 would reduce daily VMT by approximately 391,500 compared to the No Build Alternative. Implementation of the Project would 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

Alternative 1 would affect regional air pollutant emissions primarily through changes in regional transportation patterns due to mode shift and increased Metro ridership, which would decrease regional VMT throughout the Affected Area for air relative to the No Build Alternative. Additionally, the MSF would 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 Alternative 1 and the relative change from the No Build Alternative.

Alternative 1 would decrease daily regional air pollutant emissions compared to the No Build Alternative. As emissions decrease, there is no potential for the Project to cause a new NAAQS or CAAQS violation or exacerbate an existing NAAQS or CAAQS violation. Under NEPA, Alternative 1 would not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.10. Daily Operational Emissions—Alternative 1 (2042)

Scenario/Source	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Alternative 1 VMT	26,953.0	789,073.0	194,228.6	3,545.7	141,703.2	39,159.2
Alternative 1 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
Alternative 1 Total	26,956.9	789,078.6	194,230.8	3,545.7	141,705.6	39,160.0
No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
Net Change	(28.7)	(612.2)	(192.5)	(2.9)	(89.7)	(25.1)
SCAQMD Threshold	55	550	55	150	150	55

Source: Metro 2021i, SCAQMD 2015

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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 oxide; SO_x = sulfur oxides; PM_{2.5} = fine particulate matter of diameter less than 2.5 microns; PM₁₀ = 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 would result through project implementation. Alternative 1 would reduce daily regional VMT by 391,500 miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air. Under NEPA, Alternative 1 would not result in adverse effects related to MSAT emissions.

Transportation Conformity

Regional Transportation Conformity: The Project 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 Project 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. Additionally, the Project is listed in the 2019 FTIP (FTIP ID is LA0G1094), although it is currently only programmed as a Project Study. The FHWA and FTA determined that Amendment No. 19-12 to the SCAG 2019 FTIP and accompanying conformity analysis satisfied all air quality conformity requirements in the same letter on June 5, 2020. The Project is accurately programmed (for study only) in both the SCAG 2020-2045 RTP/SCS and the 2019 FTIP; therefore, Alternative 1 would satisfy the regional Transportation Conformity requirements.

Project-Level Transportation Conformity: Project-level conformity requires that the Project demonstrate it would not result in a new local CO, PM₁₀, 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 2016 included maximum 1- and 8-hour concentrations of 4.4 and 3.9 parts per million (ppm). These concentrations were below the 1- and 8-hour NAAQS of 20 and 9 ppm. The Project is planned to open in 2028. As indicated in the CARB EMFAC model, CO emission rates would be substantially less in 2028 than in 2003 when CO attainment was demonstrated in the AQMP. Therefore, Alternative 1 would not generate a CO hot spot.

Regarding PM hot-spots, the Project is within a nonattainment area for the federal PM_{2.5} NAAQS and a maintenance area for the PM₁₀ NAAQS. Therefore, pursuant to 40 CFR 93, project-level PM_{2.5} and PM₁₀ 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 Project is an electrically powered transit project that would not directly increase diesel truck traffic on the roadway network. Therefore, Alternative 1 would not influence the level-of-service associated with increased traffic volumes from a significant number of diesel vehicles. In addition, the project corridor has not been identified as including possible violation sites in the PM_{2.5} Implementation Plan or PM₁₀ Implementation Plan or submission. Metro presented the Project 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 Project would not be a Project of Air Quality Concern, thereby establishing that PM emissions from diesel trucks would not present localized air quality concerns along roadways affected by the Project. Under NEPA, Alternative 1 would not result in adverse effects related to worsening existing or contributing to new localized PM hot-spots.

4.5.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

As shown in Table 4.5.3, implementation of Alternative 2 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 215,000 miles relative to Existing Conditions. By 2042, Alternative 2 would reduce daily VMT by approximately 377,400 compared to the No Build Alternative.

Criteria Pollutant and Ozone Precursor Emissions

Alternative 2 includes the same emission sources as Alternative 1. Table 4.5.11 presents the results of the daily operational emissions modeling for Alternative 2 and the relative change from the No Build Alternative. Alternative 2 would decrease daily regional air pollutant emissions when compared to the No Build Alternative. As emissions decrease, there is no potential for Alternative 2 to cause a new NAAQS or CAAQS violation or exacerbate an existing NAAQS or CAAQS violation. Under NEPA, Alternative 2 would not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.11. Daily Operational Emissions—Alternative 2 (2042)

Scenario/Source	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Alternative 2 VMT	26,966.9	789,140.1	194,260.3	3,546.1	141,707.0	39,160.6
Alternative 2 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
Alternative 2 Total	26,970.8	789,145.7	194,262.5	3,546.1	141,709.4	39,161.3
No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
Net Daily Change	(14.8)	(545.1)	(160.8)	(2.4)	(85.9)	(23.7)
SCAQMD Threshold	55	550	55	150	150	55

Source: Metro 2021i, SCAQMD 2019

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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 oxide; SO_x = sulfur oxides; PM_{2.5} = fine particulate matter of diameter less than 2.5 microns; PM₁₀ = respirable particulate matter of diameter less than 10 microns; () = reduction/decrease

Mobile Source Air Toxics

Alternative 2 would reduce daily regional VMT by 377,400 miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air. Under NEPA, Alternative 2 would not result in adverse effects related to MSAT emissions.

Transportation Conformity

The Transportation Conformity analysis for Alternative 2 is identical to the analysis presented for Alternative 1. The Project is identified in the 2020-2045 RTP/SCS and listed in the 2019 FTIP (FTIP ID is LA0G1094). Alternative 2 would comply with regional Transportation Conformity requirements prior to receiving a Record of Decision (ROD) and would comply with project-level Transportation Conformity requirements. Similar to Alternative 1, the TCWG concurred that the Project would not be a Project of Air Quality Concern and would not present localized air quality concerns along roadways affected by the Project. Under NEPA, Alternative 2 would not result in adverse effects related to transportation conformity.

4.5.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

As shown in Table 4.5.3, implementation of Alternative 3 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 71,800 miles relative to Existing Conditions. By 2042, Alternative 3 would reduce daily VMT by approximately 130,900 compared to the No Build Alternative.

Criteria Pollutant and Ozone Precursor Emissions

Alternative 3 includes the same emission sources as Alternatives 1 and 2. Table 4.5.12 presents the results of the daily operational emissions modeling for Alternative 3 and the relative change from the No Build Alternative. Alternative 3 would decrease daily regional air pollutant emissions when compared to the No Build Alternative. As emissions decrease, there is no potential for Alternative 3 to cause a new NAAQS or CAAQS violation or exacerbate an existing NAAQS or CAAQS violation. Under NEPA, Alternative 3 would not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.12. Daily Operational Emissions—Alternative 3 (2042)

Scenario/Source	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Alternative 3 VMT	26,980.9	789,569.1	194,405.7	3,547.9	141,764.6	39,176.5
Alternative 3 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
Alternative 3 Total	26,984.8	789,574.7	194,407.9	3,547.9	141,767.0	39,177.2
No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
Net Daily Change	(0.8)	(116.0)	(15.4)	(0.7)	(28.3)	(7.8)
SCAQMD Threshold	55	550	55	150	150	55

Source: Metro 2021i, SCAQMD 2019

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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 oxide; SO_x = sulfur oxides; PM_{2.5} = fine particulate matter of diameter less than 2.5 microns; PM₁₀ = respirable particulate matter of diameter less than 10 microns; () = reduction/decrease

Mobile Source Air Toxics

Alternative 3 would reduce daily regional VMT by 130,900 miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air. Under NEPA, Alternative 3 would not result in adverse effects related to MSAT emissions.

Transportation Conformity

The Transportation Conformity analysis for Alternative 3 is identical to the analysis presented for the other Build Alternatives. Alternative 3 would comply with regional Transportation Conformity requirements prior to receiving a ROD and would comply with project-level Transportation Conformity requirements. Similar to Alternatives 1 and 2, the TCWG concurred that the Project would not be a Project of Air Quality Concern and would not present localized air quality concerns along roadways affected by the Project. Under NEPA, Alternative 3 would not result in adverse effects related to transportation conformity.

4.5.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

As shown in Table 4.5.3, implementation of Alternative 4 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 36,300 miles relative to Existing Conditions. By 2042, Alternative 4 would reduce daily VMT by approximately 70,800 compared to the No Build Alternative.

Criteria Pollutant and Ozone Precursor Emissions

Alternative 4 includes the same emission sources as Alternatives 1, 2, and 3. Table 4.5.13 presents the results of the daily operational emissions modeling for Alternative 4 and the relative change from the No Build Alternative. Alternative 4 would decrease daily regional air pollutant emissions compared to the No Build Alternative. Under NEPA, Alternative 4 would not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.13. Daily Operational Emissions—Alternative 4 (2042)

Scenario/Source	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Alternative 4 VMT	26,973.8	789,618.9	194,396.2	3,547.8	141,778.1	39,179.9
Alternative 4 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
Alternative 4 Total	26,977.7	789,624.5	194,398.4	3,547.8	141,780.5	39,180.6
No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
Net Daily Change	(7.9)	(66.3)	(24.9)	(0.7)	(14.8)	(7.8)
SCAQMD Threshold	55	550	55	150	150	55

Source: Metro 2021i, SCAQMD 2015

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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 oxide; SO_x = sulfur oxides; PM_{2.5} = fine particulate matter of diameter less than 2.5 microns; PM₁₀ = respirable particulate matter of diameter less than 10 microns; () = reduction/decrease

Mobile Source Air Toxics

Alternative 4 would reduce daily regional VMT by 70,800 miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air. Under NEPA, Alternative 4 would not result in adverse effects related to MSAT emissions.

Transportation Conformity

The Transportation Conformity analysis for Alternative 4 is identical to the analysis presented for the other Build Alternatives. Alternative 4 would comply with regional Transportation Conformity requirements prior to receiving a ROD and would comply with project-level Transportation Conformity requirements. Similar to Alternatives 1, 2, and 3, the TCWG concurred that the Project would not be a Project of Air Quality Concern and would not present localized air quality concerns along roadways affected by the Project. Under NEPA, Alternative 4 would not result in adverse effects related to transportation conformity.

4.5.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

Design Options 1 and 2 would involve sources of operational emissions consistent with those of Alternative 1. Design Option 1 would move the northern terminus of the project corridor to the LAUS MWD location instead of the Forecourt location, which would consequently change the project corridor configuration and accessibility at the northern terminus, and result in a change to regional on-road VMT patterns relative to Alternative 1. As shown in Table 4.5.3, implementation of Design Option 1 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 236,300 miles relative to Existing Conditions. By 2042, Design Option 1 would reduce daily VMT by approximately 437,800 compared to the No Build Alternative and would further reduce daily VMT compared to Alternative 1 by approximately 46,300 miles.

Under Design Option 2, a new underground Little Tokyo Station would spur increased LRT accessibility and ridership and result in a further reduction of roadway network VMT compared to Alternative 1. As shown in Table 4.5.3, implementation of Design Option 2 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 218,500 miles relative to Existing Conditions. By 2042, Design Option 2 would reduce daily VMT by approximately 398,400 miles relative to the No Build Alternative, which would represent an additional daily VMT decrease of 6,900 miles beyond that achieved by implementation of Alternative 1.

Criteria Pollutant and Ozone Precursor Emissions: Design Options 1 and 2 include the same emission sources as Alternative 1. Table 4.5.14 presents the results of the daily operational emissions modeling for the design options and the relative change from the No Build Alternative. Design Options 1 and 2 would marginally decrease daily regional air pollutant emissions when compared to the No Build Alternative. Design Options 1 and 2 would result in a greater benefit than Alternative 1. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to criteria pollutant and ozone precursor emissions.

Table 4.5.14. Daily Operational Emissions—Design Options 1 and 2 (2042)

Design Option	Scenario/Source	Measured in lbs/day					
		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
1	Design Option 1 VMT	26,947.8	788,999.1	194,199.6	3,545.4	141,692.2	39,156.1
	Design Option 1 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
	Design Option 1 Total	26,951.7	789,004.7	194,201.8	3,545.4	141,694.6	39,156.8
	No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
	Net Daily Change	(33.9)	(686.1)	(221.5)	(3.1)	(100.7)	(28.2)
	SCAQMD Threshold	55	550	55	150	150	55
2	Design Option 2 VMT	26,956.5	789,043.5	194,215.0	3,546.6	141,701.7	39,158.9
	Design Option 2 MSF ¹	3.9	5.6	2.2	<0.1	2.4	0.7
	Design Option 2 Total	26,960.4	789,049.1	194,217.2	3,546.6	141,704.1	39,159.6
	No Build Alternative	26,985.6	789,690.8	194,423.3	3,548.5	141,795.3	39,185.0
	Net Daily Change	(25.1)	(641.6)	(206.1)	(1.9)	(91.2)	(25.4)
	SCAQMD Threshold ²	55	550	55	150	150	55

Source: Metro 2021i, SCAQMD 2015

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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 oxide; SO_x = sulfur oxides; PM_{2.5} = fine particulate matter of diameter less than 2.5 microns; PM₁₀ = respirable particulate matter of diameter less than 10 microns; () = reduction/decrease

Mobile Source Air Toxics: Design Option 1 would reduce daily regional VMT by 437,800 miles relative to the No Build Alternative, thereby decreasing daily MSAT emissions throughout the Affected Area for air. Design Option 2 would reduce daily regional VMT by 398,400 miles relative to the No Build Alternative. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to MSAT emissions.

Transportation Conformity: The Transportation Conformity analysis for Design Options 1 and 2 is identical to the analysis presented for the Build Alternatives. The design options would comply with regional Transportation Conformity requirements prior to receiving a ROD and would comply with project-level Transportation Conformity requirements. Under NEPA, Design Options 1 and 2 would not result in adverse effects related to transportation conformity.

4.5.3.7 Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option

Air pollutant emissions that would be generated by operation of the Paramount and Bellflower MSF site options were estimated using CalEEMod and are accounted for in the analyses of each Build Alternative presented in the prior sections. Operation of the two MSF site options would be similar and 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 Project and would not operate independently. The analysis of operational emissions generated by the MSF is therefore incorporated with the Build Alternatives analysis.

4.5.4 Project Measures and Mitigation Measures

No project or mitigation measures are required for Alternatives 1, 2, 3, and 4.

4.5.5 California Environmental Quality Act Determination

4.5.5.1 Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The following analyses address the No Project Alternative and Build Alternatives' consistency with applicable SCAQMD and SCAG policies, including the SCAQMD's 2016 AQMP and growth projections within the SCAG's 2016–2040 RTP/SCS. In accordance with the procedures established in the SCAQMD's *CEQA Air Quality Handbook* (SCAQMD 1993), the following criteria are required to be addressed in order to determine the consistency with applicable SCAQMD and SCAG policies:

- Would the proposed 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 proposed 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 Project is included in the 2016-2040 RTP/SCS under Project ID 1TR1011. On June 1, 2016, FHWA and FTA determined that the 2016-2040 RTP/SCS is in conformity with the SIP. Demonstrating conformity with the SIP is a crucial element of transportation planning, as it assures 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 (OPR) 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 Build Alternatives 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, and no new growth would be introduced to the County in terms of population, housing, or employment. Metro systemwide operations would not include the project corridor 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 2016 AQMP. Therefore, no impact on regional air quality would occur under the No Project Alternative and mitigation would not be required.

Alternative 1: Los Angeles Union Station to Pioneer Station

Implementation of Alternative 1 would not introduce new population or housing growth into Los Angeles County, and the expansion of Metro operations would 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 AQMP, and thus would not interfere with the region's ability to attain the air quality standards on the designated schedule.

Implementation of Alternative 1 would improve regional connectivity and encourage transit ridership, and would induce changes in regional transportation patterns by replacing vehicle trips with transit ridership, as discussed in Section 4.5.3.2. Every displaced vehicle start and VMT induced by project implementation would indirectly reduce regional emissions related to transportation. As shown in Table 4.5.3, implementation of Alternative 1 (if operational in 2017) would reduce daily VMT within the Affected Area for air by approximately 216,100 miles relative to Existing Conditions. By 2042, Alternative 1 would reduce daily VMT by approximately 391,500 miles compared to the No Project Alternative.

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

Implementation of Alternative 1 would reduce emissions of criteria pollutants and ozone precursors relative to the No Project Alternative. Therefore, Alternative 1 would result in a less than significant impact related to conflicts with the AQMP, and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

The same discussion of regional conformity presented above for Alternative 1 applies to Alternative 2. Alternative 2 would improve regional connectivity, encourage transit ridership, and decrease VMT on the regional roadway network. As shown in Table 4.5.3, the Existing + Alternative 2 scenario (if operational in 2017) would reduce daily VMT from 463,245,800 miles under Existing Conditions to 463,030,800 miles, a decrease of 215,000 VMT. By 2042 the daily VMT reduction with implementation of Alternative 2 would be 377,400 relative to the No Project Alternative. Table 4.5.11 presents the regional emissions that would be generated by Alternative 2 and compares them to the No Project Alternative. Daily regional emissions of criteria pollutants and ozone precursors would decrease relative to the No Project Alternative and would therefore not have the potential to exceed any applicable SCAQMD operational threshold.

Implementation of Alternative 2 would contribute to regional goals that support alternative modes of transportation, would not generate permanent emissions that exceed the SCAQMD operational significance thresholds, and would not interfere with implementation of the AQMP. Therefore, Alternative 2 would result in a less than significant impact related to potential conflicts with the AQMP, and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would improve regional connectivity, encourage transit ridership, and decrease VMT on the regional roadway network. As shown in Table 4.5.3, the Existing + Alternative 3 scenario (if operational in 2017) would reduce daily VMT from 463,245,800 miles under Existing Conditions to 463,174,000 miles, a decrease of 71,800 VMT. By 2042 the daily VMT reduction with implementation of Alternative 3 would be 130,900 relative to the No Project Alternative. Table 4.5.12 presents the regional emissions that would be generated by Alternative 3 and compares them to the No Project Alternative. Daily regional emissions of criteria pollutants and ozone precursors would decrease relative to the No Project Alternative and would therefore not have the potential to exceed any applicable SCAQMD operational threshold.

Implementation of Alternative 3 would contribute to regional goals that support alternative modes of transportation, would not generate permanent emissions that exceed the SCAQMD operational significance thresholds, and would not interfere with implementation of the AQMP. Therefore, Alternative 3 would result in a less than significant impact related to potential conflicts with the AQMP, and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would improve regional connectivity, encourage transit ridership, and decrease VMT on the regional roadway network. As shown in Table 4.5.3, the Existing + Alternative 4 scenario (if operational in 2017) would reduce daily VMT from 463,245,800 miles under Existing Conditions to 463,210,500 miles, a decrease of 36,300 VMT. By 2042 the daily VMT reduction with implementation of Alternative 3 would be 70,800 relative to the No Project Alternative. Table 4.5.13 presents the regional emissions that would be generated by Alternative 4 and compares them to the No Project Alternative. Daily regional emissions of criteria pollutants and ozone precursors would decrease relative to the No Project Alternative and would therefore not have the potential to exceed any applicable SCAQMD operational threshold.

Implementation of Alternative 4 would contribute to regional goals that support alternative modes of transportation, would not generate permanent emissions that exceed the SCAQMD operational significance thresholds, and would not interfere with implementation of the AQMP. Therefore, Alternative 4 would result in a less than significant impact related to potential conflicts with the AQMP, and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would improve regional connectivity, encourage transit ridership, and decrease VMT on the regional roadway network. Table 4.5.3, discussed in Section 4.5.3.6, summarizes the daily VMT reductions for the design options in the Existing + Design Option scenario and the 2042 scenario compared to the No Project Alternative. Table 4.5.14 presents the regional emissions that would be generated by the design options and compares them to the No Project Alternative. Daily regional emissions of criteria pollutants and ozone precursors would decrease relative to the No Project Alternative and would therefore not have the potential to exceed any applicable SCAQMD operational threshold.

Implementation of Design Options 1 and 2 would contribute to regional goals that support alternative modes of transportation, would not generate permanent emissions that would exceed the SCAQMD operational significance thresholds, and would not interfere with implementation of the AQMP. Therefore, the design options would result in a less than significant impact related to conflicts with the AQMP, and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: The MSF would be the predominant source of direct and indirect air pollutant emissions introduced to the SCAQMD jurisdiction during project operations, generating up to approximately 250 additional vehicle trips per day. The Project considers two MSF site options: the Paramount MSF site option and the Bellflower MSF site option. The AQMP consistency analyses for the Build Alternatives considers the MSF site options as a component of the Project, as the MSF would not function independently of the LRT corridor. Table 4.5.15 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. Daily emissions of criteria pollutants and ozone precursors would remain below applicable thresholds at both levels of analysis. Therefore, the MSF site options would result in a less than significant impact related to AQMP consistency for all Build Alternatives, and mitigation would not be required.

Table 4.5.15. MSF Daily Regional Operational Emissions

Source ¹	Measured in lbs/day					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Off-Site Mobile Trips	0.9	13.3	4.3	<0.1	2.9	0.8
On-Site Area Sources	3.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
On-Site Energy Consumption	< 0.1	0.4	0.5	<0.1	<0.1	<0.1
Total Regional Emissions	4.4	13.8	4.8	<0.1	2.9	0.8
SCAQMD Regional Threshold	55	550	55	150	150	55
Regional Threshold Exceeded?	No	No	No	No	No	No
Total On-Site Emissions	3.5	0.5	0.5	< 0.1	< 0.1	< 0.1
SRA 5 Localized Significance Threshold Value	—	1,480	172	—	4	2
Localized Threshold Exceeded?	—	No	No	—	No	No

Source: Metro 2021i, SCAQMD 2015

Notes: ¹As both the Bellflower and Paramount MSF site options can accommodate a fully operational MSF, it was assumed that the size of the MSF would not be constrained based on location, and facility emissions would be comparable.

lbs/day = pounds per day; 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;

PM₁₀ = respirable particulate matter of diameter less than 10 microns

4.5.5.2 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 Basin is the Affected Area for evaluation of cumulative impacts for air quality. The Basin is currently designated as in nonattainment of the federal and/or state AAQS for O₃, PM₁₀, and PM_{2.5}. Therefore, there is an ongoing cumulative impact associated with these air pollutants. The potential for the Project 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 each of the Build Alternatives and design options 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 project alignment and components would not be developed and the associated LRT corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

As discussed in Section 4.5.5.1, the Project is listed in the region's currently conforming 2020-2045 RTP/SCS. Furthermore, as shown in Table 4.5.10, Alternative 1 would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold. Permanent emissions associated with Alternative 1 emissions would not be cumulatively considerable; this impact would be less than significant; and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

As shown in Table 4.5.11, Alternative 2 would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold. The Project is also listed in the region's currently conforming 2020-2045 RTP/SCS. Therefore, Alternative 2 would not contribute to a cumulatively considerable impact, and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

As shown in Table 4.5.12, Alternative 3 would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold. The Project is also listed in the region's currently conforming 2020-2045 RTP/SCS. Therefore, Alternative 3 would not contribute to a cumulatively considerable impact, and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

As shown in Table 4.5.13, Alternative 4 would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold. The Project is also listed in the region's currently conforming 2020-2045 RTP/SCS. Therefore, Alternative 4 would not contribute to a cumulatively considerable impact, and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: As shown in Table 4.5.14, Design Options 1 and 2 would not result in an incremental increase in daily emissions that would exceed any applicable SCAQMD threshold. The Project is also listed in the region's currently conforming 2016-2040 RTP/SCS. Therefore, Design Options 1 and 2 would not contribute to a cumulatively considerable impact, and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: The MSF site options are considered a component in the Build Alternatives assessment of the potential for a cumulatively considerable net increase in criteria pollutant emissions analysis. Based on the assessment for each Build Alternative and the emissions presented in Table 4.5.15, the MSF, at either site option, would not contribute to a cumulatively considerable impact, and mitigation would not be required.

4.5.5.3 Would the Project expose sensitive receptors to substantial pollutant concentrations?

No Project Alternative

Under the No Project Alternative, the project alignment and components would not be developed, and the associated LRT corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would not introduce a new land use development that would constitute a substantial direct source of air pollutant emissions to the Affected Area for air during operation. Permanent sources of operational emissions associated with Alternative 1 would include LRT operations and maintenance activities at the MSF. The MSF, located at either site option, would constitute the only permanent, stationary source of direct emissions associated with Alternative 1. No direct source of air pollutant emissions along the Alternative 1 alignment would occur as the LRVs are powered by electrical propulsion. Operation of Alternative 1 would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, Alternative 2 would not introduce a substantial direct source of air pollutant emissions and no direct source of air pollutant emissions along the alignment would occur. LRT operations and MSF maintenance activities would be the only permanent sources of operational emissions. Therefore, Alternative 2 would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to Alternatives 1 and 2, Alternative 3 would not introduce a substantial direct source of air pollutant emissions and no direct source of air pollutant emissions along the alignment would occur. LRT operations and MSF maintenance activities would be the only permanent sources of operational emissions. Therefore, Alternative 3 would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternatives 1, 2, and 3, Alternative 4 would not introduce a substantial direct source of air pollutant emissions and no direct source of air pollutant emissions along the alignment would occur. LRT operations and MSF maintenance activities would be the only permanent sources of operational emissions. Therefore, Alternative 4 would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Similar to the Build Alternatives, Design Options 1 and 2 would not introduce a substantial direct source of air pollutant emissions, and permanent sources of operational emissions include LRT operations and MSF maintenance activities. Therefore, Design Options 1 and 2 would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: Operation of either the Paramount MSF site option or the Bellflower MSF site option would not constitute a substantial source of pollutant emissions within the Affected Area for air. Primary emissions sources on the MSF site during operation would be consumer product use (e.g., solvents and cleaners) and ancillary activities (i.e., landscaping and building upkeep). Table 4.5.15 presents the operational emissions that would be generated by the MSF regardless of location and compares the localized emissions to the applicable SCAQMD Localized Significance Threshold values for SRA 5, Southeast Los Angeles County. On-site operational emissions would be approximately 3.5 pounds per day of volatile organic compounds, less than 0.5 pound per day of CO and NO_x, and less than 0.1 pound per day of SO_x, PM₁₀, and PM_{2.5}. Emissions would remain substantially below the applicable SCAQMD Localized Significance Threshold values for SRA 5. Operation of the MSF would not have the potential to expose sensitive receptors to substantial pollutant concentrations; impacts would be less than significant; and mitigation would not be required.

4.5.5.4 Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Project Alternative

Under the No Project Alternative, the project alignment and components would not be developed, and the associated LRT corridor would remain unchanged. No new sources of air pollutant emissions would be introduced to the Affected Area for air 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 would 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 would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance), which prevents nuisance odor conditions. As a result, Alternative 1 would have a minor, if any, impact with respect to odors. Therefore, Alternative 1 would result in a less than significant impact related to operational odors.

Alternative 1 would not introduce a new substantial source of dust emissions to the Affected Area for air. As shown in Table 4.5.3, the Existing + Alternative 1 scenario (if operational in 2017) would reduce daily VMT by 216,100, which would reduce regional mobile source emissions associated with both vehicle exhaust and re-entrained dust on the roadways. By 2042, Alternative 1 would reduce daily VMT by approximately 391,500 compared to the No Project Alternative. As such, Alternative 1 would decrease road dust emissions in direct correlation with VMT. Therefore, Alternative 1 would result in a less than significant impact related to operational odors and dust, and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402

(Nuisance). Therefore, Alternative 2 would have a minor, if any, impact with respect to odors, and impacts would be less than significant.

As shown in Table 4.5.3, the Existing + Alternative 2 scenario (if operational in 2017) would reduce daily VMT by 215,000. By 2042, the daily VMT reduction with implementation of Alternative 2 would be 377,400 relative to the No Project Alternative. As such, Alternative 2 would decrease road dust emissions in direct correlation with VMT; impacts related to operational odors and dust would be less than significant; and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to Alternatives 1 and 2, any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance). Therefore, Alternative 3 would have a minor, if any, impact with respect to odors, and impacts would be less than significant.

As shown in Table 4.5.3, the Existing + Alternative 3 scenario (if operational in 2017) would reduce daily VMT by 71,800. By 2042, the daily VMT reduction with implementation of Alternative 3 would be 130,900 relative to the No Project Alternative. As such, Alternative 3 would decrease road dust emissions in direct correlation with VMT; impacts related to operational odors and dust would be less than significant; and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to the Alternatives 1, 2, and 3, any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance). Therefore, Alternative 4 would have a minor, if any, impact with respect to odors, and impacts would be less than significant impact.

As shown in Table 4.5.3, the Existing + Alternative 4 scenario (if operational in 2017) would reduce daily VMT by 36,300. By 2042, the daily VMT reduction with implementation of Alternative 4 would be 70,800 relative to the No Project Alternative. As such, Alternative 4 would decrease road dust emissions in direct correlation with VMT; impacts related to operational odors and dust would be less than significant; and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: Any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance). Therefore, Design Option 1 would have a minor, if any, impact with respect to odors, and impacts would be less than significant.

As shown in Table 4.5.3, the Existing + Design Option 1 scenario (if operational in 2017) would reduce daily VMT by 236,300. By 2042, the daily VMT reduction with implementation of Design Option 1 would be 437,800 relative to the No Project Alternative. As such, Design Option 1 would decrease road dust emissions in direct correlation with VMT; impacts related to operational odors and dust would be less than significant; and mitigation would not be required.

Design Option 2: Add Little Tokyo Station: Any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance). Therefore, Design Option 2 would have a minor, if any, impact with respect to odors, and impacts would be less than significant impact.

As shown in Table 4.5.3, the Existing + Design Option 2 scenario (if operational in 2017) would reduce daily VMT by 218,500. By 2042, the daily VMT reduction with implementation of Design Option 2 would be 398,400 relative to the No Project Alternative. As such, Design Option 2 would decrease road dust emissions in direct correlation with VMT; impacts related to operational odors and dust would be less than significant; and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: Operation of an MSF would not generate a substantial source of operational odors. Operational activities at the MSF would 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 site options would result in a less than significant impact related to operational odors.

Operation of the MSF would not introduce a new substantial source of dust emissions to the Affected Area for air. 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 property would be paved and would not involve large aggregate storage piles or other sources of fugitive dust emissions. Operation of the MSF would 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 would be present on the MSF site, operation of the MSF would result in a less than significant impact related to dust emissions, and mitigation would not be required.

4.6 Greenhouse Gas Emissions

This section summarizes the existing greenhouse gas (GHG) emissions in the Affected Area and evaluates the potential adverse effects and impacts as a result of the No Build and Build Alternatives, including design options and MSF site options under consideration. Information in this section is based on the *West Santa Ana Branch Transit Corridor Project Final Greenhouse Gas Emissions Impact Analysis Report* (Metro 2021f) (Appendix K).

4.6.1 Regulatory Setting and Methodology

4.6.1.1 Regulatory Setting

No federal plans, policies, or regulations are applicable regarding GHG emissions.

State

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.

Assembly Bill (AB) 32: 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 reduce emissions to 1990 levels by 2020.

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 32: 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.

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 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 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.

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.

EO S-3-05, EO B-16-12, EO B-30-2015, and EO B-55-18: 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.

Regional

SCAG 2016-2040 RTP/SCS (SCAG 2016a): The SCAG 2016-2040 RTP/SCS 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.

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 2011d), the *Green Construction Policy* (Metro 2011b), and the *Resiliency Indicator Framework Report* (Metro 2015c).

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 Build Alternatives. 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 would 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 Build Alternatives were quantified using CalEEMod Version 2016.3.2 and the EMFAC2017 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 Build Alternatives in 2017 in millions of miles per year and the annual roadway network VMT for the No Build Alternative and the Build Alternatives in 2042. The CARB EMFAC2017 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	%
No Build Alternative	—	—	—	210,396	—	—
Existing 2017	160,746	—	—	—	—	—
Alternative 1	160,671	(75)	(0.047%)	210,261	(136)	(0.065%)
Alternative 2	160,672	(75)	(0.046%)	210,266	(131)	(0.062%)
Alternative 3	160,721	(25)	(0.016%)	210,351	(45)	(0.022%)
Alternative 4	160,734	(13)	(0.008%)	210,372	(25)	(0.012%)
Design Option 1	160,664	(82)	(0.051%)	210,245	(152)	(0.072%)
Design Option 2	160,670	(76)	(0.047%)	210,258	(138)	(0.066%)

Source: Prepared for Metro in 2020

Notes: VMTs presented are rounded to the nearest million; mph = miles per hour; 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 Build Alternative and 2017 Existing Scenario

³ “2042 No Build Alternative Annual Total” evaluates the Build Alternative in year 2042

⁴ “2042 vs. No Build Alternative”: Difference between the 2042 Build Alternative and No Build Alternative

Rail System Propulsion

Implementation of the Project would generate indirect GHG emissions through the consumption of electricity required for rail propulsion throughout the LRT corridor. Under Existing Conditions and the No Build Alternative, there would be no additional LRT system revenue service miles. Revenue service miles refer to total miles traveled by transit service vehicles while in revenue service. Metro has published systemwide LRT energy use based on revenue miles in its *2018 Energy and Resource Report* (Metro 2019a) that were used to estimate GHG emissions associated with LRV propulsion. Table 4.6.2 presents the annual LRV revenue miles accounted for in the operational GHG emissions analysis for each of the Build Alternatives and Alternative 1 with the design options. The annual LRV revenue miles are specific to each Build Alternative and represent train miles traveled only for the identified Build Alternative. 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 – Build Alternatives

Build Alternatives and Design Options	Annual LRV Revenue Miles ¹
Alternative 1	2,109,200
Alternative 2	2,120,400
Alternative 3	1,604,300
Alternative 4	706,800
Design Option 1	2,109,200
Design Option 2	2,109,200

Source: Metro 2021f

Notes: LRV = light rail vehicle

¹ Rounded to nearest hundred.

Maintenance and Storage Facility Operations

Operation of an MSF would 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 were quantified using the CalEEMod Version 2016.3.2 (California Air Pollution Control Officers Association 2016). Sources of emissions related to MSF operation are accounted for in the analysis of each of the alternatives and are shown in the corresponding emissions tables under each impact criterion. The MSF is a critical component of the LRT project that would provide essential infrastructure and services to Metro operations; however, it would not be constructed or operated under the No Project Alternative or the No Build Alternative. Therefore, GHG emissions that would be generated by the MSF are analyzed cumulatively with the entirety of the LRT system. GHG emissions that would be generated by construction of the MSF site options were also estimated using CalEEMod and included in the GHG analysis for each of the Build Alternatives.

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 (CO₂), methane (CH₄), and nitrous oxide (N₂O). 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 CO₂ (CO₂e).

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 ₂ O)	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 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 majority of California GHG emissions are from automobile exhaust associated with the transportation sector, including public and private vehicles. As shown in Table 4.6.4, transportation emissions declined from 182 million metric tons of CO₂e (MMTCO₂e) to 174 MMTCO₂e between 2008 and 2017. 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 MMTCO₂e of unanticipated emissions in 2015 and an additional 0.52 MMTCO₂e in 2016 (CARB 2016). 2017 is the most recent CARB GHG inventory year available.

Table 4.6.4. California GHG Emissions Inventory

Sector	Annual MMTCO ₂ e Emissions									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Transportation	182	175	170	167	166	166	167	171	173	174
Industrial	100	98	102	101	102	104	105	103	101	101
Electric power	121	102	91	88	96	90	89	84	68	63
Commercial and residential	49	50	52	54	52	54	48	50	52	53
Agriculture	35	33	34	34	35	34	35	34	34	32
High global warming potential	12	12	14	15	15	17	18	19	19	20
Recycling and waste	8	8	8	8	8	9	9	9	9	9
Emissions total	507	478	471	467	474	474	471	470	456	452

Source: CARB 2019

Notes: The emission total may slightly vary within the years due to rounding of the CARB emissions inventory.

GHG = greenhouse gas; MMTCO₂e = million metric tons of CO₂e

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.

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 CO₂ 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).

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 432,000 MTCO₂e in 2017 (Metro 2020f). However, the Metro transit network offsets considerably more emissions than it generates. In 2017, Metro's net GHG emissions benefit was approximately 580,000 MTCO₂e due to displacement of on-road vehicle trips and land use benefits. 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 Build Alternatives that would increase GHG emissions. The No Build Alternative would not reduce regional GHG emissions to the same degree as the Build Alternatives. 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 Alternative 1: Los Angeles Union Station to Pioneer Station

The regional emission analysis shown in Table 4.6.5 includes construction emissions, which are recommended by the SCAQMD to be averaged over 30 years and added to operational emissions. With the exception of the MSF, Alternative 1 does not include a direct source of emissions; however, indirect GHG emissions would be generated through energy use (i.e., LRT propulsion, lighting and accessory equipment at station platforms, and MSF operations). As shown in Table 4.6.1, implementation of Alternative 1 would result in a reduction of approximately 136 million annual VMT compared to the No Build Alternative for 2042. Displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources. As shown in Table 4.6.5, Alternative 1 would reduce regional emissions by 34,824 metric tons of CO₂e (MTCO₂e) annually (0.061 percent decrease) relative to the No Build Alternative. The MSF emissions presented in Table 4.6.5 correspond to the Paramount site option, as the preliminary design for this site option has slightly more building area than the Bellflower site option, and therefore would have marginally higher emissions associated with building energy use. Under NEPA, Alternative 1 would not result in an adverse effect related to GHG emissions.

4.6.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, Alternative 2 does not include a direct source of emissions, with the exception of the MSF, and indirect GHG emissions would be generated through energy use. As shown in Table 4.6.1, implementation of Alternative 2 would result in a reduction of approximately 131 million annual VMT compared to the No Build Alternative for 2042. As shown in Table 4.6.5, Alternative 2 would reduce regional emissions by 27,234 MTCO₂e annually (0.048 percent decrease) relative to the No Build Alternative. The change in annual operational GHG emissions relative to the No Build Alternative is attributed to increased Metro ridership and enhanced circulation patterns. Under NEPA, Alternative 2 would not result in an adverse effect related to GHG emissions.

4.6.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have a shorter alignment than Alternatives 1 and 2, which would result in less VMT reduction. Alternative 3 would also require less energy to operate the LRT and stations as the shorter track length and reduced number of stations would consume less electricity for propulsion, lighting, and other end uses. As shown in Table 4.6.1, implementation of Alternative 3 would result in a reduction of approximately 45 million annual VMT compared to the No Build Alternative for 2042. Table 4.6.5 shows that Alternative 3 would reduce regional GHG emissions by approximately 1,681 MTCO₂e annually (0.003 percent decrease) relative to the No Build Alternative. This decrease in emissions represents a nominal to no change from the No Build Alternative. Under NEPA, Alternative 3 would not result in an adverse effect related to GHG emissions.

4.6.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3, which would result in less VMT reduction from the No Build Alternative but would also require less energy to operate the shorter LRT and fewer stations. As shown in Table 4.6.1, implementation of Alternative 4 would result in a reduction of approximately 25 million annual VMT compared to the No Build Alternative for 2042. Table 4.6.5 shows that Alternative 4 would reduce regional emissions by approximately 4,916 MTCO₂e annually (0.008 percent decrease) relative to the No Build Alternative. Under NEPA, Alternative 4 would not result in an adverse effect related to GHG emissions.

Table 4.6.5. Operational GHG Emissions

Emissions Source	Annual Greenhouse Gas Emissions (MTCO ₂ e/year)							
	Existing 2017	No Build Alternative 2042	Alternative 1 2042	Alternative 2 2042	Alternative 3 2042	Alternative 4 2042	Design Option 1 2042	Design Option 2 2042
Regional On-Road VMT	66,199,911	57,179,713	57,133,472	57,140,967	57,168,737	57,168,568	57,129,472	57,132,225
LRT Propulsion/Station/Parking Energy	–	–	8,179	8,213	6,633	3,885	8,179	8,179
MSF Operations ¹	–	–	1,834	1,834	1,834	1,834	1,834	1,834
Amortized Construction ²	–	–	1,404	1,466	828	511	1,446	1,483
Total Emissions	66,199,911	57,179,713	57,144,889	57,152,480	57,178,032	57,174,798	57,140,931	57,143,721
Change from No Build Alternative	–	–	(34,824)	(27,234)	(1,681)	(4,916)	(38,783)	(35,992)
Percent Change from No Build Alternative	–	–	(0.061%)	(0.048%)	(0.003%)	(0.008%)	(0.068%)	(0.063%)

Source: Metro 2021f

Notes: ¹The MSF operations emissions represent annual Paramount MSF site option emissions, excluding amortized construction, which are accounted for as part of total project construction.

²Construction emissions are analyzed in Section 4.19, Construction Impacts, and associated emissions are presented in Table 4.18-3. SCAQMD guidance states that amortized construction emissions over 30 years should be considered as part of operational emissions due to the cumulative nature of GHG emissions' environmental influence (SCAQMD 2008).

GHG = greenhouse gas; LRT = light rail transit; MSF = maintenance and storage facility; MTCO₂e = million metric tons of CO₂e; VMT = vehicle miles traveled

4.6.3.6 Design Options—Alternative 1

Table 4.6.5 shows the GHG emissions for Design Options 1 and 2 in comparison with the No Build Alternative and Alternative 1.

Design Option 1: LAUS at MWD: Implementation of Design Option 1 would result in similar LRT/station GHG emissions as Alternative 1. As shown in Table 4.6.1, the overall reduction in annual VMT would be approximately 152 million miles relative to the No Build Alternative for 2042, which would represent an additional decrease of 16 million VMT than Alternative 1. As shown in Table 4.6.5, Design Option 1 would reduce regional emissions by 38,783 MTCO₂e annually (0.068 percent decrease). Under NEPA, Design Option 1 would not result in an adverse effect related to GHG emissions.

Design Option 2: Add Little Tokyo Station: Implementation of Design Option 2 would result in similar LRT/station GHG emissions as Alternative 1. As shown in Table 4.6.1, the overall reduction in annual on-road VMT would be approximately 138 million miles relative to the No Build Alternative for 2042, which would represent an additional decrease of approximately 2 million more VMT than Alternative 1. As shown in Table 4.6.5, Design Option 2 would reduce regional emissions by 35,992 MTCO₂e annually (0.063 percent decrease). Under NEPA, Design Option 2 would not result in an adverse effect related to GHG emissions.

4.6.3.7 Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option

The Paramount and Bellflower MSF site options would 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 site option is an essential component of the Build Alternatives, MSF energy consumption and associated emissions are accounted for in the overall analysis of each of the Build Alternatives. Independently, it is estimated that the Paramount MSF site option would generate approximately 1,998 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions as discussed in detail in Section 4.19, Construction Impacts. The Bellflower MSF site option would generate approximately 1,885 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions. The MSF site options would comply with mandatory Title 24 and CALGreen Building Code requirements and would achieve a minimum Silver rating from the Leadership in Energy and Environmental Design (LEED) certification, as specified in the ECMP. The MSF site options would contribute to a net GHG emissions reduction compared to the No Build Alternative by contributing to implementation of the LRT and the associated VMT reductions. Under NEPA, the Paramount and Bellflower MSF site options would not result in an adverse effect related to GHG emissions.

4.6.4 Project Measures and Mitigation Measures

No project or mitigation measures are required for Alternatives 1, 2, 3, and 4.

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 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 Build Alternatives 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 and Section 3 of the Greenhouse Gas Emissions Impact Analysis Report (Appendix K). 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

Implementation of Alternative 1 would generate direct GHG emissions through operations at the MSF and indirect GHG emissions would 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 would also be substantially affected through induced mode shift emissions displacement. The *2017 Climate Change Scoping Plan* (CARB 2017) identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the state's 2030 and post-2030 emissions goals

without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 4.6.1, Alternative 1 (if operational in 2017) would result in a reduction of approximately 75 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro 2019a). Alternative 1 would result in a reduction of approximately 136 million annual VMT in 2042 compared to the No Build Alternative (Table 4.6.1), and the GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis in Table 4.6.5, implementation of Alternative 1 would reduce regional emissions by 34,824 MTCO₂e annually (0.061 percent decrease) in 2042. Implementation of Alternative 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 1 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, Alternative 1 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, with the exception of the MSF, Alternative 2 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Induced transportation mode shift would displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 2. As shown in Table 4.6.1, Alternative 2 (if operational in 2017) would result in a reduction of approximately 75 million annual VMT compared to the Existing (No Project) Conditions. Implementation of Alternative 2 would reduce annual VMT in 2042 by approximately 131 million compared to the No Build Alternative (Table 4.6.1), and the GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis summarized in Table 4.6.5, Alternative 2 would decrease regional emissions by 27,234 MTCO₂e annually (0.05 percent decrease) in 2042. Implementation of Alternative 2 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources and is consistent with the objectives of OPR and CARB plans and policies. Therefore, Alternative 2 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to Alternative 1, with the exception of the MSF, Alternative 3 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Alternative 3 would have a shorter alignment than Alternatives 1 and 2, would result in less VMT reduction from the No Build Alternative, and would also require less energy to operate the LRT and stations. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 3.

As shown in Table 4.6.1, Alternative 3, if operational in 2017 or 2042, would result in a reduction of annual VMT compared to the conditions without the Project under those same timeframes. Therefore, the GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis in Table 4.6.5, Alternative 3 would reduce regional emissions by approximately 1,681 MTCO₂e annually (0.003 percent decrease) in 2042. Implementation of Alternative 3 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources and is consistent with the objectives of OPR and CARB plans and policies. Therefore, Alternative 3 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternative 1, with the exception of the MSF, Alternative 4 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3; would result in less VMT reduction from the No Build Alternative; and would require less energy to operate the LRT and stations. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 4. As shown in Table 4.6.1, Alternative 4, if operational in 2017 or 2042, would result in a reduction of annual VMT compared to the conditions without the Project under those same timeframes. Therefore, GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis in Table 4.6.5, Alternative 4 would reduce regional emissions by 4,916 MTCO₂e annually (0.009 percent decrease). Implementation of Alternative 4 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources and is consistent with the objectives of OPR and CARB plans and policies. Therefore, Alternative 4 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: Similar to Alternative 1, with the exception of the MSF, Design Option 1 does not include a direct source of emissions and indirect GHG emissions would be generated through typical LRT and station energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Design Option 1. As shown in Table 4.6.1, Design Option 1 (if operational in 2017) would result in a reduction of approximately 82 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro 2019a). Design Option 1 would result in a reduction of approximately 152 million annual VMT in 2042 compared to the No Build Alternative (Table 4.6.1), and the GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis in Table 4.6.5, Design Option 1 would reduce regional emissions by 38,783 MTCO₂e annually (0.068 percent decrease). Implementation of Design Option 1 would enhance regional transportation planning efforts to reduce VMT and GHG

emissions from transportation sources and is consistent with the objectives of OPR and CARB plans and policies. Therefore, Design Option 1 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Design Option 2: Add Little Tokyo Station: Similar to Alternative 1, with the exception of the MSF, Design Option 2 does not include a direct source of emissions and indirect GHG emissions would be generated through typical LRT and station energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Design Option 2. As shown in Table 4.6.1, Design Option 2, if operational in 2017 or 2042, would result in a reduction of annual VMT compared to conditions without the Project under each timeframe. Therefore, the GHG emissions impact would be less than significant in accordance with OPR and CARB guidance.

As demonstrated by the analysis in Table 4.6.5, Design Option 2 would reduce regional emissions by 35,992 MTCO₂e annually (0.063 percent decrease). Implementation of Design Option 2 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources and is consistent with the objectives of OPR and CARB plans and policies. Therefore, Design Option 2 would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options would 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 Build Alternatives, energy consumption is accounted for in the overall analysis of the Build Alternatives.

It is estimated that the Paramount MSF site option would generate approximately 1,998 MTCO₂e per year, which includes 165 MTCO₂e of amortized construction emissions. Annual operational emissions would be approximately 1,834 MTCO₂e per year, as shown in Table 4.6.5. The Bellflower MSF site option would generate approximately 1,885 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions (Table 4.6.5). Annual operational emissions would be approximately 1,720 MTCO₂e per year, which is slightly less than the Paramount MSF site option.

The MSF site options would comply with mandatory Title 24 and CALGreen Building Code requirements, would achieve a minimum LEED Silver rating, and would contribute to a net GHG emissions reduction by contributing to implementation of the LRT and the associated VMT reductions. Therefore, the MSF site options would result in a less than significant impact related to the generation of GHG emissions, and mitigation would not be required.

4.6.5.2 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).

Alternative 1: Los Angeles Union Station to Pioneer Station

No state, regional, or local GHG reduction plans promote increased passenger vehicles on the roadway network. As described Section 4.6.5.1, reducing VMT is one of the three major means of reducing GHG emissions identified in the *2017 Climate Change Scoping Plan* (CARB 2017). CARB acknowledges that employing VMT as the metric of transportation impact statewide will help GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the state's 2030 and post-2030 emissions goals without reducing VMT growth. Implementation of Alternative 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 1 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, implementation of Alternative 1 would reduce annual on-road VMT by approximately 75 million VMT if operational in 2017 and would reduce annual on-road VMT by approximately 136 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. Alternative 1 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as presented in Table 4.6.5 and enhancing the Metro transit system's net displacement of GHG emissions. Therefore, Alternative 1 would result in a less than significant impact related to GHG reduction plans, and mitigation would not be required.

Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, Alternative 2 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as presented in Table 4.6.5 and enhancing the Metro transit system's net displacement of GHG emissions. Implementation of Alternative 2 would reduce annual on-road VMT by approximately 75 million VMT (if operational in 2017) and by approximately 131 million in 2042, as shown in Table 4.6.1. Therefore, Alternative 2 would result in a less than significant impact related to GHG reduction plans, and mitigation would not be required.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to Alternatives 1 and 2, Alternative 3 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as presented in Table 4.6.5 and enhancing the Metro transit system's net displacement of GHG emissions. Implementation of Alternative 3 would reduce annual on-road VMT by approximately 25 million VMT (if operational in 2017), and by approximately 45 million in 2042, as shown in Table 4.6.1. Therefore, Alternative 3 would result in a less than significant impact related to GHG reduction plans, and mitigation would not be required.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternatives 1, 2, and 3, Alternative 4 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as analyzed in Table 4.6.5 and enhancing the Metro transit system's net displacement of GHG emissions. As shown in Table 4.6.1, implementation of Alternative 4 would reduce

annual on-road VMT by approximately 13 million VMT (if operational in 2017) and by approximately 25 million in 2042. Therefore, Alternative 4 would result in a less than significant impact related to GHG reduction plans, and mitigation would not be required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Similar to Alternative 1, Design Options 1 and 2 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans. Therefore, Design Options 1 and 2 would result in a less than significant impact related to GHG reduction plans, and mitigation would not be required.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: The MSF site options would be designed and constructed in compliance with mandatory Title 24 and the CALGreen Building Code requirements and would achieve a minimum of a LEED Silver rating, as specified in the ECMP. The MSF is a necessary component of the Build Alternatives and would be consistent with applicable policies and plans designed to enhance sustainable development and reduce the regional GHG emissions inventory. The Paramount and Bellflower MSF site options would generate approximately 1,998 MTCO_{2e} and 1,885 MTCO_{2e} annually, respectively. However, the Build Alternatives would ultimately result in a substantial net reduction in regional GHG emissions. Therefore, the MSF would result in a less than significant impact related to GHG emission reduction plans, and mitigation would 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 Build Alternatives, MSFs, and design options, 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 2021j) (Appendix M).

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 following analysis assesses groundborne vibration (GBV) and groundborne noise (GBN). 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 of the transit structure excites the adjacent ground, creating vibration waves that propagate through the ground and into nearby buildings creating GBV effects that potentially interfere with activities. The vibrating building components may radiate sound, which is known as GBN. GBN occurs when vibration radiates through a building interior and creates a low-frequency sound, often described as a rumble, as a train passes by. GBN is assessed for below-grade and underground transit operations where the wayside noise of the train is shielded from the receivers. At- or above-grade transit operations do not consider GBN since the exterior wayside noise from train pass-bys would be greater than the GBN inside a building interior.

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 Federal Highway Administration, 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 Project would 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.

To satisfy NEPA requirements, the analysis utilized the FTA's *Transit Noise and Vibration Impact Assessment Manual* guidance 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 analyzed in accordance with Appendix G of the *CEQA Guidelines*, identified in Section 4.7.5 of this Draft 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.

The impact criteria were determined with a sliding scale dependent on the type of land use and existing noise levels. 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 following three impact levels are also illustrated in Figure 4.7-1. Sensitive land uses may experience an impact at levels defined as moderate or severe.

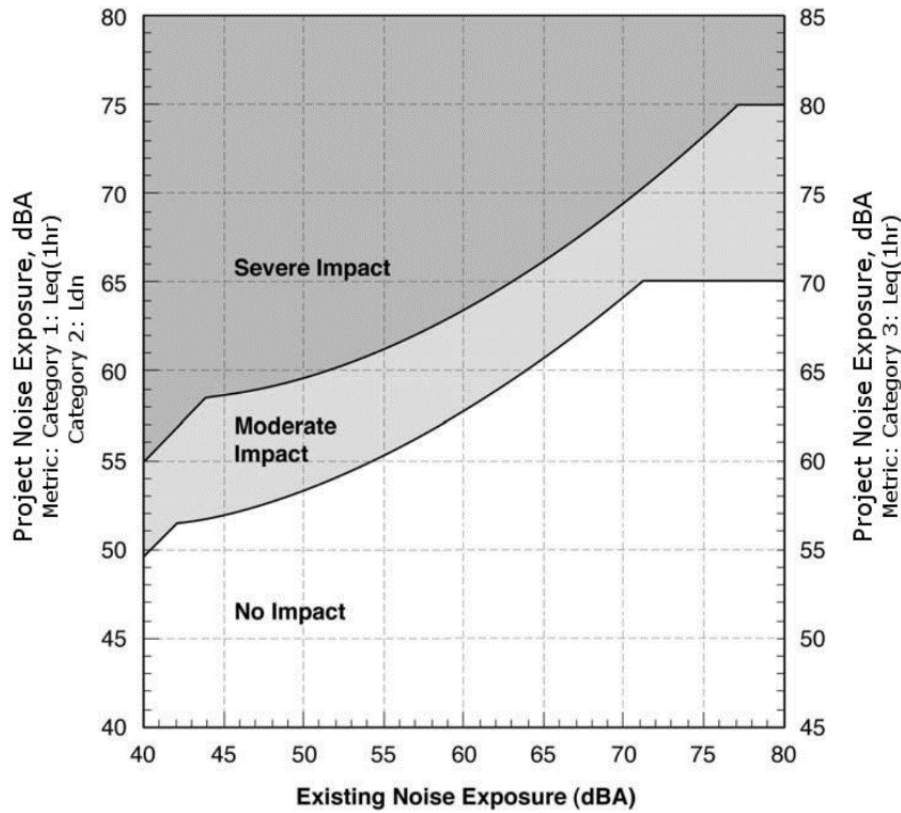
Table 4.7.1. Levels of Impact

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

The noise impact criteria for transit operations are summarized in Table 4.7.2. The first column shows the existing noise exposure and the remaining columns show the additional noise exposure caused by a transit project that would result in the two impact levels. As the existing noise exposure increases, the amount of allowable increase in noise exposure from the Build Alternatives decreases. For the purposes of this analysis, the FTA impact criteria was 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 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 a transit project.

Table 4.7.2. Noise Impact Criteria for Transit Operations

Existing Noise Exposure L_{eq} or L_{dn} (dBA)	Project Noise Impact Exposure, $L_{eq}(h)$ or L_{dn} (dBA)					
	Category 1 or 2 Sites			Category 3 Sites		
	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
<43	< Ambient + 10	Ambient + 10 to 15	>Ambient + 15	< Ambient + 15	Ambient + 15 to 20	>Ambient + 20
43	<52	52-58	>58	<57	57-63	63
44	<52	52-58	>58	<57	57-63	63
45	<52	52-58	>58	<57	57-63	63
46	<53	53-59	>59	<58	58-64	64
47	<53	53-59	>59	<58	58-64	64
48	<53	53-59	>59	<58	58-64	64
49	<54	54-59	>59	<59	59-64	64
50	<54	54-59	>59	<59	59-64	64
51	<54	55-60	>60	<59	59-65	65
52	<55	55-60	>60	<60	60-65	6
53	<55	55-60	>60	<60	60-65	65
54	<55	55-61	>61	<60	60-66	66
55	<56	55-61	>61	<61	61-66	66
56	<56	56-62	>62	<61	61-67	67
57	<57	57-62	>62	<62	62-67	67
58	<57	57-62	>62	<62	62-67	67
59	<58	58-63	>63	<63	63-68	68
60	<58	58-63	>63	<63	63-68	68
61	<59	59-64	>64	<64	64-69	69
62	<59	59-64	>64	<64	64-69	69
63	<60	60-65	>65	<65	65-70	70
64	<61	61-65	>65	<66	66-70	70
65	<61	61-66	>66	<66	66-71	71
66	<62	62-67	>67	<67	67-72	72
67	<63	63-67	>67	<68	68-72	72
68	<63	63-68	>68	<68	68-73	73
69	<64	64-69	>69	<69	69-74	74
70	<65	65-69	>69	<70	70-74	74

Existing Noise Exposure L_{eq} or L_{dn} (dBA)	Project Noise Impact Exposure, $L_{eq}(h)$ or L_{dn} (dBA)					
	Category 1 or 2 Sites			Category 3 Sites		
	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
71	<66	66-70	>70	<71	71-75	75
72	<66	66-71	>71	<71	71-76	76
73	<66	66-71	>71	<71	71-76	76
74	<66	66-72	>72	<71	71-77	77
75	<66	66-73	>73	<71	71-78	78
76	<66	66-74	>74	<71	71-79	79
77	<66	66-74	>74	<71	71-79	79
>77	<66	66-75	>75	<71	71-80	80

Source: FTA 2018

Note: dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq}(h)$ = hourly equivalent noise level; L_{dn} = day-night noise level

Vibration

The primary source of vibration would be train movements either above ground, at-grade, or below ground. A model was developed to predict vibration levels based on train speed, trackwork, transit structure, and propagation characteristics. The vibration model used was the FTA General Vibration Assessment that used 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 that were developed specifically for transit vibration sources operating on fixed guideways. However, because actual levels of groundborne vibration sometimes differ substantially from the general assessment predictions, the following FTA guidelines are used to interpret vibration impact:

- If predicted ground-borne vibration is below the impact threshold, vibration impact is unlikely.
- If the predicted ground-borne vibration is 0 to 5 dB greater than the impact threshold, there is a strong chance that actual ground-borne vibration levels would be below the impact threshold. More detailed studies to refine the vibration impact analysis at these locations should be conducted during the engineering phase for the Final EIS/EIR.
- If predicted ground-borne vibration is 5 dB or greater than the impact threshold, a vibration impact is probable and a Detailed Vibration Analysis must be conducted during the engineering phase for the Final EIS/EIR 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.

FTA has developed impact criteria for acceptable levels of ground-borne noise and vibration. These criteria, as summarized in Table 4.7.3, are presented in terms of acceptable indoor ground-borne vibration and noise levels. Ground-borne noise occurs when vibration radiates through a building interior and creates a low-frequency sound, often described as a rumble, as a train passes by. Impact will occur if these levels are exceeded. Criteria for ground-borne vibration are expressed in terms of RMS velocity levels in VdB, and criteria for GBN are expressed in terms of A-weighted sound pressure levels in dBA. 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 4.7.3. Since the Project would have more than 70 train pass-bys per day, the FTA criteria for frequent events is used to assess potential impact.

Table 4.7.3. Ground-borne Vibration and Ground-borne Noise Impact Criteria

Land Use Category	GBV Impact Levels (VdB, 1 micro-inch/sec)			GBN Impact Levels (dBA, 20 micro Pascals)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration would interfere with interior operations	65	65	65	N/A	N/A	N/A
Category 2: Residences and buildings where people normally sleep	72	75	80	35	38	43
Category 3: Institutional land uses with primarily daytime use	75	78	83	40	43	48
Special Use – Concert halls, TV studios, and recording studios	65	65	65	25	25	25
Special Use – Auditoriums	72	80	80	30	38	38
Special Use – Theaters	72	80	80	35	43	43

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

dBA = A-weighted decibels; GBN = ground-borne noise; GBV = ground-borne vibration; N/A = not applicable; VdB = decibel notation

The limit of 0.12 inches per second (in/sec) for fragile historic structures is among the most restrictive limits used for vibration damage risk to buildings. A damage risk criterion of 0.2 in/sec (PPV) is protective of all but the most fragile buildings.

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 Draft EIS/EIR. The noise environment in urban areas is dominated by traffic noise. Several industrial areas along the alignment for the Build Alternatives 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. Monitoring was completed at 8 long-term locations (24-hour measurements) and 31 short-term locations (30-minute measurements) along the alignment of the Build Alternatives during October and November 2017, including near the Bellflower MSF site option. Additional measurements were taken at the Paramount MSF site option on November 27, 2018. 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 (Appendix M) for a detailed discussion of the existing noise environment.

4.7.2.2 Vibration

The Project would be located in an urban center. Primary existing sources of GBV include trucks traveling along roadways, construction utilizing heavy equipment, and active freight lines within the corridor. According to FTA guidance, the background vibration levels are expected to 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 project alignments where potential impacts may occur based on existing land use activities. Existing ambient vibration levels were not measured at these locations.

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



Source: Prepared for Metro in 2020

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



Source: Prepared for Metro in 2020

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



Source: Prepared for Metro in 2020

4.7.3 Environmental Consequences/Environmental Impacts

4.7.3.1 No Build Alternative

Under the No Build Alternative, the Build Alternative 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. Projects under the No Build Alternative would generate noise and vibration levels typical to urban long-term transportation noise and would have their own environmental evaluations with mitigation identified, if necessary. Under the No Build Alternative, no changes related to the Build Alternatives 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 Alternative 1: Los Angeles Union Station to Pioneer Station

Noise

LRT Pass-by (underground): The subterranean portions of Alternative 1 would not generate pass-by noise audible to surface receptors. Ventilation shaft and station noise is assessed below in the Ancillary Facilities subsection. Under NEPA, Alternative 1 would not result in adverse effects related to underground LRT pass-by 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. A total of 31 protected at-grade crossings with crossing signals would contribute to LRT noise at sensitive uses. 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 San Pedro Subdivision ROW to Randolph Street; the second curve is the transition from Randolph Street to Long Beach Boulevard; and the third curve serves as the transition point from the Pacific Electric Right-of-Way (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 4.7.4 provides a summary of sensitive land uses considered for the analysis of LRT pass-by noise. Refer to Appendix A of the Noise and Vibration Impact Analysis Report (Appendix M) for additional site-specific information. Under Alternative 1, Category 2 clusters would experience 76 moderate impacts and 171 severe impacts. Ten Category 3 clusters would experience moderate impacts and two would experience severe impacts. No Category 1 clusters would experience impacts. 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 to other areas that would result in noise impacts. Under NEPA, Alternative 1 would result in adverse effects related to LRT pass-by noise.

Table 4.7.4. Summary of Alternative 1 LRT Pass-by Noise Impacts

Land Use	FTA Land Use Category ²	Impacts		
		Moderate	Severe	Total
Kairos Music	1	0	0	0
Residential clusters ¹	2	76	171	247
Templo Asamblea De Oracion	3	1	0	1
Huntington Park High School	3	1	0	1
Trinity Bible Church	3	1	0	1
American Indian Bible Church	3	1	0	1
Paramount High School	3	0	1	1
Door Christian Fellowship Church	3	1	0	1
Los Angeles County Fire Museum	3	1	0	1
Bristol Civic Auditorium	3	1	0	1
Bellflower Health Center	3	1	0	1
Rio Hondo Metal Health Clinic	3	1	0	1
Artesia Historical Museum	3	1	0	1
Wan Yuen Temple	3	0	1	1
Total Number of Impacts				259

Source: Prepared for Metro in 2021

Notes: ¹ Cluster sites (groups of sensitive land uses) are shown in the Noise and Vibration Impact Analysis Report (Appendix M).

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; LRT = light rail transit

Ancillary Facilities: TPSSs are a transit system ancillary facility 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. Alternative 1 would require 19 at-grade TPSS units. Each underground station would typically include a TPSS to power the LRT. Although the underground alignment of the Build Alternatives would differ, the TPSS facilities would be located underground and would therefore not be audible to aboveground receivers.

Emergency, standby, and critical operations power system generators, located along the alignment, at maintenance facilities, and at a rail operations control center would 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 would not be a part of regular operation and would 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 underground station entrances would also include ventilation shafts and ventilation equipment. Ventilation shafts and emergency ventilation fans would be designed in accordance with Metro systemwide design criteria noise guidelines (or equivalent policy) for residential areas. The

ventilation system would adhere to a noise ceiling of 60 dBA for train pass-by noise and 50 dBA for fan noise at a distance of 50 feet. Compliance with these standards would ensure ventilation noise would be inaudible above the existing noise environment. During emergency situations, the ventilation system noise limits would not apply, and ventilation system noise may be audible. However, these situations would not occur during regular operation of the Project.

The at-grade and aerial portions of the alignment would utilize the same TPSS units. Of the proposed TPSS site locations, 26 would be located near a residence. Table 4.7.5 summarizes affected land uses. Five moderate impacts and two severe impacts would occur. Under NEPA, Alternative 1 would result in adverse effects related to ancillary facility noise.

Parking Facilities: Alternative 1 includes five stations with parking: Firestone Station, I-105/C Line Station, Paramount/Rosecrans Station, Bellflower Station, and Pioneer Station. According to FTA guidance, the appropriate screening distance to identify sensitive receivers for parking facilities is 125 feet. Sensitive receivers would be located within 125 feet of each of the parking facilities, except for the Firestone Station parking facility. Under NEPA, Alternative 1 would not result in adverse effects related to parking facility noise.

Freight Track Relocation: Relocation of existing freight tracks would be required to the 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 Build Alternative alignments and maintain existing operations along the ROW where the proposed LRT tracks would overlap.

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 Facade Avenue to account for existing freight that was not captured during noise measurements.

Relocated freight tracks would generally differ from their current alignments by only a few feet and would 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 would be added, and the frequency of freight trains would not change. However, the freight tracks would be relocated closer to sensitive receivers at two locations. At the first location, there would be an approximately 20-foot shift of the centerline of the freight tracks to the south of the La Habra Branch ROW along Randolph Street. This would bring the freight tracks within approximately 50 feet from inhabited structures along the southern side of Randolph Street. Freight trains are anticipated to travel at a speed of 10 mph along Randolph Street and would be required to sound their warning horns due to grade crossings.

The other location would be near the I-105 freeway, where the centerline of the freight tracks would be shifted approximately 15 feet. This relocation would be in proximity to residences along Facade Avenue and near Rosecrans Avenue. Freight trains are anticipated to travel at a speed of 10 mph along Facade Avenue and would 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 4.7.4.

Table 4.7.5. 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	
18(e)	South of E Martin Luther King Jr Blvd on the west side of Long Beach Ave and within private property	SFR/MFR to the south, west, and north	15	66.8	66.9	62.0	67.3	Moderate
17	South of E 51st St on the west side of Long Beach Ave within private property	SFR/MFR to the west	15	70.5	66.9	64.7	69.8	Moderate
17b	Just north of E 52nd St on the west side of Long Beach Ave within private property	SFR/MFR to the west, north, and south	15	70.5	66.9	64.7	69.8	Moderate
17a	Between E 52nd and 53rd St on the west side of Long Beach Ave within private property	SFR/MFR to the west, north, and south	15	70.5	66.9	64.7	69.8	Moderate
15(e)	East of Stafford Ave and north of Randolph St within private property	SFR to the west, east, and south	15	61.8	66.9	58.3	64.3	Severe
8(e)	Just southwest of Arthur Ave/Rose St and north of Rosecrans Ave within public-owned property	SFR to the north	20	58.7	64.4	57.1	62.8	Severe
2	Northwest of the crossing at Gridley Rd and 183rd St within Metro-owned property	SFR to the north	40	51.2	58.3	53.8	59.9	Moderate

Source: Prepared for Metro in 2021

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; MFR = multifamily residential; SFR = single-family residential; TPSS = traction power substation

In summary, under Alternative 1, 30 Category 2 clusters would experience moderate impacts and 24 would experience severe impacts. Five Category 3 clusters would experience moderate impacts and two would experience severe impacts. Category 3 clusters along Randolph Street are unlikely to regularly experience impacts due to a combination of freight and LRT noise because Category 3 uses are daytime uses and would not typically be open when the freight is traversing Randolph Street at night. Under NEPA, Alternative 1 would result in adverse effects related to relocated freight track noise.

Vibration

LRT Pass-by (underground): Subterranean train travel could generate perceptible GBV or GBN at surface land uses. Under Alternative 1, GBV are predicted not to exceed the FTA threshold of 72 VdB and the GBN FTA threshold of 35 dBA, with the exception of cluster 7 residents near McGarry Street and 14th Street in the City of Los Angeles. At this location, the GBV is predicted to exceed the FTA GBV threshold by 7 VdB and GBN and the GBN FTA threshold by 9 dB. Therefore, where the projected GBV and GBN are predicted to be greater than the FTA threshold by more than 5 dB, there is a strong chance that an adverse effect may occur. Under NEPA, Alternative 1 may result in an adverse effect related to underground LRT pass-by vibration.

LRT Pass-by (at-grade and aerial): Train travel would vibrate the transit structure and create GBV that could interfere with land use activities. No impacts were identified at Category 3 institutional facilities, including, but not limited to, schools, medical facilities, or religious facilities. However, the FTA vibration thresholds would be exceeded at 101 Category 2 residential clusters. These predicted GBV levels are in the range of 1 to 20 VdB above the FTA vibration criteria. Thirty-eight clusters are predicted to exceed the impact criteria by more than 5 VdB. Therefore, under NEPA, where the projected ground-borne vibration is 1 to 5 dB greater than the impact threshold, there is a strong chance that actual ground-borne vibration levels would be below the impact threshold and would not result in an adverse effect related to projected groundborne vibration. Where the projected ground-borne vibration is 5 dB greater than the impact threshold, vibration impact is probable. Under NEPA, Alternative 1 could result in an adverse effect related to at-grade and aerial LRT pass-by vibration.

Freight Track Relocation: Under Alternative 1, freight tracks would be relocated 15 feet closer to the residences along Facade Avenue near Rosecrans Avenue. The vibration level associated with freight trains at the new location operating at 20 mph would be 78 VdB at occupied building structures along Facade Avenue. These levels are based on at-grade ballast and tie track. Freight train vibration would be infrequent as only two to three trains are estimated to travel near this location in any one day. The FTA impact criterion for residential properties exposed to infrequent vibration events is 80 VdB. Under NEPA, Alternative 1 projected freight train vibration would not exceed the impact threshold and would not result in adverse effects related to freight track relocation vibration.

4.7.3.3 Alternative 2: 7th St/Metro Center to Pioneer Station

Noise

LRT Pass-by (underground): The subterranean portions of Alternative 2 would not generate pass-by noise audible to surface receptors. Under NEPA, Alternative 2 would not result in adverse effects related to underground LRT pass-by noise.

LRT (at-grade and aerial): Alternative 2 would follow the same alignment for at-grade and aerial segments as Alternative 1. LRT pass-by noise impacts related to Alternative 2 would be primarily the same as Alternative 1. However, headways under Alternative 2 would decrease to 2.5 minutes during one hour of each weekday peak period between 7th St/Metro Center Station and the Slauson/A Line Station. Clusters 12, 23, 29, 34, and 44 would experience severe impacts instead of moderate impacts.

Cluster 33 would change from no impact to moderate impact. Alternative 2 would result in 72 moderate impacts and 176 severe impacts at Category 2 clusters. Impacts at Category 3 clusters would remain the same as Alternative 1. Under NEPA, Alternative 2 would result in adverse effects related to LRT pass-by noise.

Ancillary Facilities: Alternative 2 would utilize the same ancillary facility locations as Alternative 1, with the exception of underground TPSS sites. Underground TPSS sites would not produce audible noise at aboveground sensitive receptors. Ancillary facility noise impacts related to Alternative 2 would be the same as Alternative 1. Under NEPA, Alternative 2 would result in adverse effects related to ancillary facility noise.

Parking Facilities: Alternative 2 would utilize the same parking facilities as Alternative 1. Consistent with Alternative 1 and consistent with NEPA, Alternative 2 would not result in adverse effects related to parking facility noise.

Freight Track Relocation: Alternative 2 would follow the same alignment for at-grade and aerial segments as Alternative 1. Freight track relocation noise impacts related to Alternative 2 would be the same as Alternative 1. Under NEPA, Alternative 2 would result in adverse effects related to relocated freight track noise.

Vibration

LRT Pass-by (underground): The analysis did not identify impacts related to LRT pass-by vibration associated with the underground portion of Alternative 2. Under NEPA, Alternative 2 would not result in adverse effects related to underground LRT pass-by vibration.

LRT (at-grade and aerial): Alternative 2 would follow the same alignment for at-grade and aerial segments as Alternative 1 and would have the same potential impacts. Therefore, under NEPA, where the projected ground-borne vibration is 1 to 5 dB greater than the impact threshold, there is a strong chance that actual ground-borne vibration levels would be below the impact threshold and would not result in an adverse effect. Where the projected ground-borne vibration is 5 dB greater than the impact threshold, vibration impact is probable. None of the vibration Category 3 receivers are predicted to exceed the FTA vibration impact threshold. Under NEPA, Alternative 2 would result in adverse effects related to LRT pass-by vibration.

Freight Track Relocation: Alternative 2 freight track relocation would be the same as Alternative 1. Under NEPA, Alternative 2 projected freight train vibration would not exceed the impact threshold and would not result in adverse effects related to freight track relocation vibration.

4.7.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Noise

LRT Pass-by: Noise impacts related to Alternative 3 would largely be the same as Alternatives 1 and 2. Alternative 3 would be entirely at-grade or aerial and, therefore, no noise impacts related LRT pass-by underground would occur. However, noise impacts would be reduced overall due to the shortened length of the alignment. The northern tail tracks would end at civil station 645+50, which would reduce speeds and noise levels at clusters 33 through 45. Alternative 3 would affect clusters 33 through 347 and would result in moderate impacts at 59 of 289 Category 2 clusters and severe impacts at 153 Category 2 clusters. Impacts at Category 3 clusters would remain the same as Alternatives 1 and 2. Under NEPA, Alternative 3 would result in adverse effects related to LRT pass-by noise.

Ancillary Facilities: Seventeen TPSS locations are proposed for Alternative 3. Two severe impacts would occur at TPSS site 15e and TPSS site 8e. One moderate impact would occur at TPSS site 2. Under NEPA, Alternative 3 would result in adverse effects related to ancillary facility noise.

Parking Facilities: Alternative 3 would utilize the same parking facilities as Alternatives 1 and 2. Under NEPA, Alternative 3 would not result in adverse effects related to parking facility noise.

Freight Track Relocation: Freight tracks would be relocated at the same locations as Alternatives 1 and 2. Noise impacts related to freight track relocation would be the same as Alternatives 1 and 2. Under NEPA, Alternative 3 would result in adverse effects related to relocated freight track noise.

Vibration

LRT Pass-by: Vibration impacts related to Alternative 3 would largely be the same as Alternative 1 and 2. Alternative 3 would be entirely at-grade or aerial and, therefore, no vibration impacts related to underground LRT pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment. Alternative 3 would affect vibration clusters 41 through 233. Under Alternative 3, LRT pass-by vibration would result in 96 impacts exceeding the FTA impact criteria of 72 VdB. Thirty-five clusters are predicted to exceed the impact criteria by more than 5 VdB. Under NEPA, Alternative 3 would result in adverse effects related to LRT pass-by vibration.

Freight Track Relocation: Alternative 3 freight track relocation would be the same as Alternatives 1 and 2. Under NEPA, Alternative 3 projected freight train vibration would not exceed the impact threshold and would not result in adverse effects related to freight train vibration.

4.7.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Noise

LRT Pass-by: Noise impacts related to Alternative 4 would be similar south of the I-105/C Line as Alternatives 1, 2, and 3. Alternative 4 would be entirely at-grade or aerial and, therefore, no noise impacts related to LRT pass-by underground would occur. However, noise impacts would be reduced overall due to the shortened length of the alignment. Alternative 4 would affect clusters 181 through 347 and would result in moderate impacts at 15 of 149 Category 2 clusters and severe impacts at 117 Category 2 clusters. Six of 18 Category 3 clusters would experience moderate impacts and two would experience severe impacts. Under NEPA, Alternative 4 would result in adverse noise effects related to LRT pass-by noise.

Ancillary Facilities: Eight TPSS locations are proposed for Alternative 4. One severe impact would occur at TPSS site 8e and one moderate impact would occur at TPSS site 2. Under NEPA, Alternative 4 would result in adverse effects related to ancillary facility noise.

Parking Facilities: Alternative 4 would utilize four of the five parking facilities as Alternatives 1, 2, and 3—the Firestone parking facility would not be required due to the shortened length of Alternative 4. Similar to Alternatives 1, 2, and 3, under NEPA, Alternative 4 would not result in adverse effects related to parking facility noise.

Freight Track Relocation: Alternative 4 would not require the relocation of freight tracks north of civil station 1068+50, near the Main Street grade crossing. Freight track relocation would therefore only affect clusters 183 to 213. Freight train noise at both of these locations have been added to the LRT noise. Under Alternative 4, six Category 2 clusters would experience moderate impacts and 15 would experience severe impacts. One Category 3 cluster would experience a moderate impact. Under NEPA, Alternative 4 would result in adverse effects related to relocated freight track noise.

Vibration

LRT Pass-by: Vibration impacts related to Alternative 4 would largely be the same as Alternatives 1, 2, and 3. Alternative 4 would be entirely at-grade or aerial and, therefore, no vibration impacts related to underground LRT pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment. Alternative 4 would affect vibration clusters 125 through 233. Under Alternative 4, LRT pass-by vibration would result in 62 impacts exceeding the FTA impact criterion of 72 VdB. Twenty-eight clusters are predicted to exceed the impact criteria by more than 5 VdB. Under NEPA, Alternative 4 would result in adverse effects related to LRT pass-by vibration.

Freight Track Relocation: Alternative 4 would not require the relocation of freight tracks north of civil station 1068+50, near the Main Street grade crossing. South of the Main Street grade crossing, Alternative 4 freight track relocation would be the same as Alternative 1. Under NEPA, Alternative 4 projected freight train vibration would not exceed the impact threshold and would not result in adverse effects related to freight train vibration.

4.7.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

Noise: Noise related to underground LRT would not be readily transmitted to surface-level receivers, similar to those analyzed for Alternative 1. Design Options 1 and 2 would not include additional impacts beyond those described above for Alternative 1.

Vibration: GBV and GBN levels were modeled at each cluster along the underground segment for Design Options 1 and 2. No clusters would experience levels that are predicted to exceed the FTA impact criteria. Design Options 1 and 2 would not include additional impacts beyond those described above for Alternative 1.

4.7.3.7 Maintenance and Storage Facility

Paramount MSF Site Option

Noise: MSF noise sources include train movements within the MSF and on lead tracks, wheels striking special trackwork, wheel squeal on curves, maintenance shops, the car wash, and associated vehicular traffic from employee trips. Noise levels related to these sources were modeled at the 18 sensitive use clusters near the Paramount MSF site option, and noise levels would not exceed the FTA impact criteria at nearby sensitive uses. Under NEPA, the Paramount MSF site option would not result in adverse effects related to noise.

Vibration: Vibration impacts may occur related to the light rail vehicles moving around the MSF, at lead tracks, and near special trackwork. The Paramount MSF site option is more than 200 feet from any residential land uses. GBV from train movements through crossover trackwork at 10 mph in the yard are not predicted to exceed the FTA impact threshold of 72 VdB. Lead tracks to the Paramount MSF site option would enter the site along its western edge approximately 0.3 mile south of the WSAB mainline track. Movement of the LRT trains on the lead tracks in and out of the facility at 20 mph would result in a GBV level of 70 VdB at the nearest residential property. No vibration impacts would occur from the vehicle movements on the lead tracks. The lead tracks would require relocation of the existing freight track 15 feet closer to the residential properties along Facade Avenue. GBV levels caused by the relocation of the freight line at the clusters near the Paramount MSF site option and the lead tracks were modeled. Freight train operations would be infrequent as only two to three trains are estimated to travel past this location in any one day. The FTA impact criterion for residential properties exposed to infrequent vibration events is 80 VdB. Thus, the GBV is predicted not to exceed the impact criterion and no adverse

effects related to vibration are predicted to occur as a result of realignment of the freight tracks. Under NEPA, the Paramount MSF site option would not result in adverse effects related to vibration.

Bellflower MSF Site Option

Noise: Noise levels related to MSF noise sources were modeled at the 57 sensitive use clusters near the Bellflower MSF site option, and noise levels would not exceed the FTA noise impact criteria at nearby sensitive uses. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to noise.

Vibration: The Bellflower MSF site option 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 would 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. Under NEPA, the Bellflower MSF site option would not result in adverse effects related to vibration.

4.7.4 Project Measures and Mitigation Measures

4.7.4.1 Project Measures

There are no project measures required by law or permit related to noise and vibration.

4.7.4.2 Mitigation Measures

Noise

NOI-1 Soundwalls. Soundwalls would be placed at the edge of the right-of-way 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 to meet Federal Transit Administration requirements.

NOI-1 LRT Soundwall Locations

Civil Station	Alternative(s)	Location	Track Side	Placement	Height
562+00 to 570+00	1 and 2	Between 21st St and 24th St	Left	Aerial	4 Feet
563+00 to 571+50	1 and 2	Between 22nd St and 25th St	Right	Aerial	4 Feet
577+00 to 658+25	1 and 2	Between Adams Blvd. and 57th St	Right	Aerial	4 Feet
596+50 to 627+00	1 and 2	Between 41st Pl and 48th Pl	Left	Aerial	4 Feet
635+75 to 660+75	1 and 2	Between 51st St and 57th St	Left	Aerial	4 Feet
764+00 to 779 +15	1, 2, and 3	Between Boyle Ave and Hollenbeck St	Right	Edge of Right-of-Way	8 feet
777+40 to 792+50	1, 2, and 3	Between Hollenbeck St and Benedict Wy	Right	Aerial	4 Feet
803+25 to 813+50	1, 2, and 3	Between Gage Ave and Bell Ave	Left	Edge of Right-of-Way	8 feet

Civil Station	Alternative(s)	Location	Track Side	Placement	Height
815+15 to 829+15	1, 2, and 3	Between Bell Ave and Florence Ave	Left	Edge of Right-of-Way	8 feet
807+50 to 812+50	1, 2, and 3	Between Iris Ave and Bell Ave	Right	Edge of Right-of-Way	8 feet
840+00 to 869+00	1, 2, and 3	Between Live Oak St and Otis Ave	Right	Edge of Right-of-Way	8 feet
840+00 to 861+50	1, 2, and 3	Between Live Oak St and Olive St	Left	Edge of Right-of-Way	8 feet
871+00 to 877+50	1, 2, and 3	Between Otis Ave and Santa Ana St	Right	Edge of Right-of-Way	8 feet
872+50 to 878+00	1, 2, and 3	Between Otis Ave and Santa Ana St	Left	Edge of Right-of-Way	8 feet
881+20 to 893+50	1, 2, and 3	Between Santa Ana St and Cecilia St	Left	Edge of Right-of-Way	8 feet
957+50 to 968+00	1, 2, and 3	Between Southern Ave and center of Los Angeles River Channel	Right	Edge of Right-of-Way	8 feet
960+00 to 973+00	1, 2, and 3	Between McCallum Ave and center of Los Angeles River Channel	Right	Aerial	4 Feet
968+00 to 982+00	1, 2, and 3	Between center of Los Angeles River Channel and Frontage Rd	Left	Aerial	4 feet
1067+75 to 1073+50	1, 2, 3, and 4	Between Main St and Lincoln Ave	Left	Edge of Right-of-Way	8 feet
1070+50 to 1074+00	1, 2, 3, and 4	Between Harding Ave and Lincoln Ave	Right	Edge of Right-of-Way	8 feet
1083+50 to 1084+50	1, 2, 3, and 4	Between Century Blvd and Grove St	Right	Edge of Right-of-Way	8 feet
1088+00 to 1107+75	1, 2, 3, and 4	Between I-105 Fwy and Racine Ave	Right	Edge of Right-of-Way	8 feet
1089+50 to 1108+00	1, 2, 3, and 4	Between I-105 Fwy and Rose St	Left	Edge of Right-of-Way	8 feet
1095+00 to 1136+25	1, 2, 3, and 4	Between Denver St and approximately 300 feet east of 144th St	Left	Aerial	4 feet
1095+00 to 1108+00	1, 2, 3, and 4	Between Denver St and Rose St	Right	Aerial	4 feet
1141+00 to 1155+50	1, 2, 3, and 4	Between Paramount High School railroad pedestrian crossing and Downey Ave	Left	Aerial	4 feet

4 Affected Environment and Environmental Consequences

Civil Station	Alternative(s)	Location	Track Side	Placement	Height
1140+00 to 1167+00	1, 2, 3, and 4	Between Paramount High School railroad pedestrian crossing and approximately 400 feet west Somerset Blvd	Right	Aerial	4 feet
1167+00 to 1171+00	1, 2, 3, and 4	Between approximately 400 feet west of Somerset Blvd and Somerset Blvd	Right	Edge of Right-of-Way	8 feet
1173+00 to 1184+00	1, 2, 3, and 4	Between Somerset Blvd and Lakewood Blvd	Right	Edge of Right-of-Way	8 feet
1186+50 to 1215+70	1, 2, 3, and 4	Between Lakewood Blvd and approximately 400 feet west of Clark Ave	Right	Edge of Right-of-Way	8 feet
1198+50 to 1215+70	1, 2, 3, and 4	Between approximately 50 feet west of Virginia Ave and Clark Ave	Left	Edge of Right-of-Way	8 feet
1217+00 to 1222+00	1, 2, 3, and 4	Between Clark Ave and Alondra Blvd	Left	Edge of Right-of-Way	8 feet
1224+00 to 1241+75	1, 2, 3, and 4	Between Alondra Blvd and Orchard Ave	Right	Edge of Right-of-Way	8 feet
1226+50 to 1241+75	1, 2, 3, and 4	Between approximately 220 feet southeast of Alondra Blvd and Orchard Ave	Left	Edge of Right-of-Way	8 feet
1248+50 to 1255+50	1, 2, 3, and 4	Between Bellflower Blvd and approximately 120 feet northwest of Civic Center Dr	Left	Edge of Right-of-Way	8 feet
1250+00 to 1263+00	1, 2, 3, and 4	Between approximately 350 feet southeast of Bellflower Blvd and Pacific Ave	Right	Edge of Right-of-Way	8 feet
1261+00 to 1286+00	1, 2, 3, and 4	Between Pacific Ave and approximately 70 feet southeast of California Ave	Left	Aerial	4 Feet
1261+00 to 1286+00	1, 2, 3, and 4	Between Pacific Ave and approximately 270 feet southeast of California Ave	Right	Aerial	4 Feet
1286+00 to 1303+00	1, 2, 3, and 4	Between California Ave and Beach St	Right	Edge of Right-of-Way	8 feet
1286+00 to 1300+00	1, 2, 3, and 4	Between California Ave and approximately 100 feet northwest of Beach St	Left	Edge of Right-of-Way	8 feet
1309+00 to 1316+00	1, 2, 3, and 4	Between SR-91 Fwy and approximately 220 feet southeast of San Gabriel River Channel	Right	Edge of Right-of-Way/Structure	4 feet

Civil Station	Alternative(s)	Location	Track Side	Placement	Height
1355+10 to 1360+00	1, 2, 3, and 4	Between Rosewood Park and approximately 450 feet northwest of Harvest Ave	Left	Edge of Right-of-Way	8 feet
1360+00 to 1389+00	1, 2, 3, and 4	Between approximately 900 feet northwest of Harvest Ave and approximately 300 feet northwest of 186th St	Left	Aerial	4 Feet
1374+50 to 1389+00	1, 2, 3, and 4	Between 183rd St and approximately 300 feet northwest of 186th St	Right	Aerial	4 Feet
1390+00 to 1392+40	1, 2, 3, and 4	Between approximately 200 feet northwest of 186th St and approximately 150 feet northwest of 186th St	Left	Edge of Right-of-Way	8 feet
1390+00 to 1391+50	1, 2, 3, and 4	Between approximately 200 feet northwest of 186th St and approximately 150 feet northwest of 186th St	Right	Edge of Right-of-Way	8 feet
1393+75 to 1401+20	1, 2, 3, and 4	Between 186th St and 187th St	Left	Edge of Right-of-Way	8 feet
1393+40 to 1400+75	1, 2, 3, and 4	Between 186th St and 187th St	Right	Edge of Right-of-Way	8 feet
1409+50 to 1417+87	1, 2, 3, and 4	Between Pioneer Blvd and South St	Left	Edge of Right-of-Way	8 feet
1409+20 to 1413+60	1, 2, 3, and 4	Between Pioneer Blvd and approximately 300 feet northwest of South St	Right	Edge of Right-of-Way	8 feet

LRT = light rail transit

NOI-2 Low Impact Frogs. Low impact frogs (crossing point of two rails) would be installed at the identified locations shown in the following table to reduce crossover impact noise. Locations will be verified during final design.

NOI-2 Low Impact Frog Locations

Civil Station	Alternative(s)	Location
602+00	1 and 2	Between 41st Pl and 42nd St
655+00	1, 2, and 3	Between 55th St and 57th St
740+50	1, 2, and 3	Between Templeton St and Miles Ave
808+00	1, 2, and 3	Between Iris Ave and Nevada St
874+00	1, 2, and 3	Between Otis Ave and Santa Ana St
1075+50	1, 2, 3, and 4	Between Lincoln Ave and Florence Ave
1179+00	1, 2, 3, and 4	Between Castana Ave and Olivia Ave

Civil Station	Alternative(s)	Location
1229+50	1, 2, 3, and 4	Between Alondra Blvd and Harvard St
1289+50	1, 2, 3, and 4	Between Flora Vista St and Park St
1294+00	1, 2, 3, and 4	Between Flora Vista St and Park St
1399+00	1, 2, 3, and 4	Between 184th St and 186th St
1411+50	1, 2, 3, and 4	Between Pioneer Blvd and South Ave

NOI-3 Wheel Squeal Noise Monitoring. Metro would conduct wheel squeal noise monitoring prior to the start of revenue operations to determine if wheel squeal is occurring at the curves identified in the following table. If wheel squeal occurs, Metro would use wayside rail lubrication.

NOI-3 Wheel Squeal Wayside Friction Applicator Locations

Civil Station	Alternative(s)	Curve
670+00	1, 2, and 3	Curve from Randolph St to Long Beach Ave
788+00	1, 2, and 3	Curve from San Pedro Subdivision Right-of-Way to Randolph St
1109+00	1, 2, 3, and 4	Curve from PEROW to San Pedro Subdivision Right-of-Way following Arthur Ave

NOI-4 Crossing Signal Bells. Crossing signal bells at the locations identified in the following table would be equipped with shrouds to direct bell noise away from sensitive receivers. Crossing signal bell noise would not exceed 104 dBA SEL at 50 feet. This measure is subject to California Public Utilities Commission approval.

NOI-4 Crossing Signal Bells Shroud Locations

Civil Station	Alternative(s)	Grade Crossing Locations
709+00	1, 2, and 3	Santa Fe Ave
716+50	1, 2, and 3	Malabar St
732+50	1, 2, and 3	Seville Ave
743+00	1, 2, and 3	Miles Ave
756+50	1, 2, and 3	Arbutus Ave
763+00	1, 2, and 3	State St/Boyle Ave
801+00	1, 2, and 3	Gage Ave
814+50	1, 2, and 3	Bell Ave
830+50	1, 2, and 3	Florence Ave
869+50	1, 2, and 3	Otis Ave
879+50	1, 2, and 3	Santa Ana St
1067+00	1, 2, and 3	Main St

Civil Station	Alternative(s)	Grade Crossing Locations
1083+00	1, 2, 3, and 4	Century Blvd
1172+50	1, 2, 3, and 4	Somerset Blvd
1185+50	1, 2, 3, and 4	Lakewood Blvd
1216+50	1, 2, 3, and 4	Clark Ave
1223+00	1, 2, 3, and 4	Alondra Blvd
1247+50	1, 2, 3, and 4	Bellflower Blvd
1393+00	1, 2, 3, and 4	186th St
1408+00	1, 2, 3, and 4	Pioneer Blvd

NOI-5 Gate-Down-Bell-Stop Variance. Metro would 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 sensitive receivers. Crossing signal noise would not exceed 30 seconds in duration. This measure is subject to California Public Utilities Commission approval.

NOI-5 Gate Down Stop Variance Locations

Civil Station	Alternative(s)	Grade Crossing Locations
814+50	1, 2, and 3	Bell Ave
1083+00	1, 2, 3, and 4	Century Blvd
1393+00	1, 2, 3, and 4	186th St

NOI-6 TPSS Noise Reduction. At the TPSS locations identified in the following table, Metro would 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 HVAC equipment away from sensitive receivers
- Utilize 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-6 TPSS Locations

Civil Station	Alternative(s)	TPSS	Location	FTA Impact Criteria (dBA, L _{dn})
589+00	1 and 2	18 (e)	South of E Martin Luther King Jr Blvd on the west side of Long Beach Ave and within private property	62.0
638+00	1 and 2	17	South of E 51st St on the west side of Long Beach Ave within private property	64.7

Civil Station	Alternative(s)	TPSS	Location	FTA Impact Criteria (dBA, L _{dn})
640+00	1 and 2	17b	Just north of E 52nd St on the west side of Long Beach Ave within private property	64.7
642+25	1 and 2	17a	Between E 52nd and 53rd St on the west side of Long Beach Ave within private property	64.7
737+75	1, 2, and 3	15(e)	East of Stafford Ave and north of Randolph St within private property	58.8
1110+50	1, 2, 3, and 4	8(e)	Just southwest of Arthur Ave/Rose St and north of Rosecrans Ave within public-owned property	57.1
1372+50	1, 2, 3, and 4	2	Northwest of the crossing at Gridley Rd and 183rd St within Metro-owned property	53.8

Note: dBA = A-weighted decibel; FTA = Federal Transit Administration; L_{dn} = day-night noise level; TPSS = traction power substation; Leq = equivalent sound level

Mitigated Ancillary Facility Noise: Implementation of Mitigation Measure NOI-6 (TPSS Noise Reduction) would 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 would be determined as part of final design. Therefore, under NEPA, adverse effects for Alternatives 1, 2, 3, and 4 could remain related to ancillary facility noise.

NOI-7 Freight Track Relocation Soundwalls. Soundwalls would 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 to meet Federal Transit Administration requirements.

NOI-7 Freight Track Relocation Soundwalls

Civil Station	Alternative(s)	Location	Track Side	Placement	Height
1111+00 to 1121+00	1, 2, 3, and 4	Between Arthur Ave and Colorado Ave	Left	Edge of Right-of-Way	8 feet
1088+00 to 1107+75	1, 2, 3, and 4	Between I-105 Fwy and Rose St	Right	Edge of Right-of-Way	8 feet
1089+50 to 1108+00	1, 2, 3, and 4	Between I-105 Fwy and Rose St	Left	Edge of Right-of-Way	8 feet

Mitigated LRT Noise: As shown in Table 4.7.6, after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), and NOI-3 (Wheel Squeal Noise Monitoring), Alternatives 1 and 2 would result in 110 moderate and 60 severe impacts. Alternative 3 would have 101 moderate impacts and 59 severe impacts, and Alternative 4 would have 59 moderate impacts and 44 severe impacts. Implementation of mitigation would reduce impacts at many receptors, if not eliminating them. Mitigation under Alternative 1 would result in 165 benefited receptors, 166 benefited receptors under Alternative 2, 132 benefited receptors under Alternative 3, and 89 benefited receptors under Alternative 4. Mitigated impacts and impacts remaining after mitigation are shown in Table 4.7.7 through Table 4.7.10 and Figure 4.7-5 through Figure 4.7-11. Some impacts are not mitigable due to physical features preventing installation of soundwalls or 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. Mitigation Measures NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) may result in additional reductions in impacts but would require California Public Utilities Commission (CPUC) approval before implementation. Therefore, under NEPA, adverse effects for Alternatives 1, 2, 3, and 4 would 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 4.7.6. Summary of Mitigated LRT Noise Impacts by Alternative

Alternative	Benefited Receptors ¹	Impacts Remaining		
		Moderate	Severe	Total
1	165	110	60	170
2	166	110	60	170
3	132	101	59	160
4	89	59	44	103

Source: Prepared for Metro in 2021

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

Table 4.7.7. Mitigated LRT Noise – Alternative 1

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	
N2	2	SFR/MFR	Yes	4	NOI-1	56.3	68.3	60.3	55.9	61.7	Moderate
N3	2	SFR/MFR	Yes	4	NOI-1	56.3	64.1	59.1	55.9	61.7	Moderate
N4	2	SFR/MFR	Yes	4	NOI-1	56.3	70.8	61.8	55.9	61.7	Severe
N5	2	SFR/MFR	Yes	4	NOI-1	56.3	63.5	58.5	55.9	61.7	Moderate
N6	2	SFR/MFR	Yes	4	NOI-1	56.3	68.3	60.3	55.9	61.7	Moderate
N7	2	SFR/MFR	Yes	4	NOI-1	56.3	63.5	58.5	55.9	61.7	Moderate
N10	2	SFR/MFR	Yes	4	NOI-1	66.8	63.5	57.5	62.0	67.3	No
N11	2	SFR/MFR	Yes	4	NOI-1	66.8	64.7	58.7	62.0	67.3	No
N12	2	SFR/MFR	Yes	4	NOI-1	66.8	66.9	59.9	62.0	67.3	No
N13	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	68.7	58.7	62.0	67.3	No
N14	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	71.9	59.9	62.0	67.3	No
N15	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	70.9	59.9	62.0	67.3	No
N16	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	68.5	58.5	62.0	67.3	No
N17	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	80.6	65.6	62.0	67.3	Moderate
N18	2	SFR/MFR	Yes	4	NOI-1	66.8	65.9	59.9	62.0	67.3	No
N19	2	SFR/MFR	Yes	4	NOI-1	66.8	75.6	65.6	62.0	67.3	Moderate
N20	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	71.9	59.9	62.0	67.3	No
N21	2	SFR/MFR	Yes	4	NOI-1	66.8	62.3	57.3	62.0	67.3	No
N22	2	SFR/MFR	Yes	4	NOI-1	66.8	62.3	57.3	62.0	67.3	No
N23	2	SFR/MFR	Yes	4	NOI-1	66.8	66.9	59.9	62.0	67.3	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	
N24	2	SFR	Yes	4	NOI-1	66.8	72.6	62.6	62.0	67.3	Moderate
N25	2	SFR/MFR	Yes	4	NOI-1	66.8	68.3	60.3	62.0	67.3	No
N27	2	SFR/MFR	Yes	4	NOI-1	66.8	62.6	57.6	62.0	67.3	No
N29	2	SFR/MFR	Yes	4	NOI-1	66.8	66.9	59.9	62.0	67.3	No
N30	2	SFR/MFR	Yes	4	NOI-1	66.8	63.7	58.7	62.0	67.3	No
N32	2	SFR/MFR	Yes	4	NOI-1	70.5	67.0	55.0	64.7	69.8	No
N34	2	MFR	Yes	4	NOI-1	70.5	69.6	58.6	64.7	69.8	No
N35	2	SFR/MFR	Yes	4	NOI-1	70.5	68.3	57.3	64.7	69.8	No
N37	2	MFR	Yes	4	NOI-1	70.5	66.1	55.1	64.7	69.8	No
N38	2	MFR	Yes	4	NOI-1	70.5	65.2	58.2	64.7	69.8	No
N40	2	SFR	Yes	4	NOI-1, NOI-2	70.5	67.3	56.3	64.7	69.8	No
N42	2	SFR/MFR	Yes	4	NOI-1, NOI-2	70.5	70.6	55.6	64.7	69.8	No
N43	2	SFR	Yes	4	NOI-1, NOI-2	70.5	75.6	58.6	64.7	69.8	No
N44	2	SFR	Yes	4	NOI-1, NOI-2	70.5	69.7	57.7	64.7	69.8	No
N45	2	SFR	No	0	NOI-2	70.5	66.5	61.5	64.7	69.8	No
N50	2	SFR/MFR	No	0	NOI-3	65.4	74.0	64.0	61.1	66.4	Moderate
N54	2	SFR	No	0	NOI-4	68.0	64.4	64.4	62.9	68.1	Moderate
N56	2	SFR	No	0	NOI-4	68.0	67.0	67.0	62.9	68.1	Moderate
N58	2	SFR/MFR	No	0	NOI-4	68.0	64.4	64.4	62.9	68.1	Moderate
N60	2	SFR/MFR	No	0	NOI-4	68.0	68.6	68.6	62.9	68.1	Severe
N61	2	SFR	No	0	NOI-4	68.0	64.9	64.9	62.9	68.1	Moderate

4 Affected Environment and Environmental Consequences

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	
N62	3	Templo Asamblea De Oracion	No	0	NOI-4	64.2	73.9	66.2	65.3	70.7	Moderate
N65	2	SFR/MFR	No	0	NOI-4	68.0	65.8	65.8	62.9	68.1	Moderate
N71	2	MFR	No	0	NOI-4	61.8	67.0	67.0	58.8	64.3	Severe
N73	2	SFR/MFR	No	0	NOI-2, NOI-4	61.8	68.0	65.4	58.8	64.3	Severe
N74	2	SFR/MFR	No	0	NOI-2	61.8	63.3	58.3	58.8	64.3	No
N75	2	MFR	No	0	NOI-2	61.8	59.9	54.9	58.8	64.3	No
N76	2	SFR/MFR	No	0	NOI-2	61.8	67.0	62.0	58.8	64.3	Moderate
N77	2	SFR/MFR	No	0	NOI-2	61.8	63.0	58.0	58.8	64.3	No
N78	2	SFR/MFR	No	0	NOI-2, NOI-4	61.8	63.1	59.2	58.8	64.3	Moderate
N79	2	SFR/MFR	No	0	NOI-2, NOI-4	61.8	71.2	67.9	58.8	64.3	Severe
N80	2	SFR/MFR	No	0	NOI-2, NOI-4	61.8	70.6	67.6	58.8	64.3	Severe
N81	2	SFR	No	0	NOI-2	61.8	61.0	56.0	58.8	64.3	No
N82	2	SFR/MFR	No	0	NOI-4	61.8	59.6	59.6	58.8	64.3	Moderate
N83	3	Huntington Park High School	No	0	NOI-4	63.8	71.9	65.8	65.1	70.5	Moderate
N85	2	SFR/MFR	No	0	None ²	61.8	62.4	62.4	58.8	64.3	Moderate
N86	2	SFR/MFR	No	0	NOI-4	61.8	67.6	67.6	58.8	64.3	Severe
N88	2	SFR/MFR	No	0	NOI-4	61.8	66.1	66.1	58.8	64.3	Severe
N89	2	SFR/MFR	No	0	None ²	63.1	62.9	62.9	59.6	65.1	Moderate
N92	2	SFR/MFR	No	0	NOI-4	63.1	61.6	61.6	59.6	65.1	Moderate
N93	2	SFR	No	0	NOI-4	63.1	67.0	67.0	59.6	65.1	Severe
N94	2	SFR/MFR	No	0	NOI-4	63.1	64.3	64.3	59.6	65.1	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	
N96	2	SFR	No	0	NOI-4	63.1	62.4	62.4	59.6	65.1	Moderate
N98	2	SFR/MFR	No	0	NOI-4	63.1	63.1	63.1	59.6	65.1	Moderate
N99	2	SFR/MFR	No	0	NOI-4	63.1	60.9	60.9	59.6	65.1	Moderate
N102	2	SFR	Yes	8	NOI-1	63.1	62.6	58.6	59.6	65.1	No
N104	2	SFR	Yes	4	NOI-1	63.1	61.9	57.9	59.6	65.1	No
N105	2	SFR/MFR	Yes	4	NOI-1, NOI-3	63.1	76.0	55.0	59.6	65.1	No
N107	2	SFR	No	0	NOI-2, NOI-4	66.8	66.1	62.6	62.0	67.3	Moderate
N108	2	SFR	Yes	8	NOI-1, NOI-2, NOI-4	66.8	78.4	65.6	62.0	67.3	Moderate
N109	2	SFR	Yes	8	NOI-1, NOI-2	66.8	62.2	48.2	62.0	67.3	No
N110	2	SFR	Yes	8	NOI-1, NOI-2	66.8	64.9	53.9	62.0	67.3	No
N111	2	SFR	Yes	8	NOI-1	66.8	67.6	62.6	62.0	67.3	Moderate
N112	2	SFR/MFR	Yes	8	NOI-1, NOI-4, NOI-5	66.8	68.3	59.6	62.0	67.3	No
N113	2	SFR/MFR	Yes	8	NOI-1, NOI-2, NOI-4, NOI-5	66.8	77.1	71.6	62.0	67.3	Severe
N114	2	SFR	No	0	NOI-4NOI-5	66.8	66.0	66.0	62.0	67.3	Moderate
N116	2	SFR/MFR	Yes	8	NOI-1, NOI-4, NOI-5	64.0	74.2	71.6	60.2	65.6	Severe
N118	2	SFR	Yes	8	NOI-1	64.0	67.6	59.6	60.2	65.6	No
N119	2	SFR	Yes	8	NOI-1, NOI-4	64.0	69.4	63.2	60.2	65.6	Moderate
N120	2	SFR	No	0	NOI-4	64.0	60.3	60.3	60.2	65.6	Moderate
N133	2	SFR	Yes	8	NOI-1	63.1	62.9	58.9	59.6	65.1	No

4 Affected Environment and Environmental Consequences

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	
N135	2	SFR	Yes	8	NOI-1	63.1	60.3	57.3	59.6	65.1	No
N137	2	SFR	Yes	8	NOI-1	63.1	65.6	57.6	59.6	65.1	No
N140	2	MFR	Yes	8	NOI-1	63.1	62.7	56.7	59.6	65.1	No
N141	2	SFR	Yes	8	NOI-1	63.1	64.1	59.1	59.6	65.1	No
N144	2	SFR	Yes	8	NOI-1	63.1	64.9	58.9	59.6	65.1	No
N146	2	SFR	Yes	8	NOI-1	63.1	63.4	59.4	59.6	65.1	No
N149	2	SFR	Yes	8	NOI-1	63.1	63.4	59.4	59.6	65.1	No
N153	2	SFR	Yes	8	NOI-1	63.1	65.2	59.2	59.6	65.1	No
N155	2	SFR	Yes	8	NOI-1	63.1	60.3	56.3	59.6	65.1	No
N156	2	SFR	Yes	8	NOI-1	63.1	63.8	58.8	59.6	65.1	No
N157	2	SFR	Yes	4	NOI-1	61.1	61.4	61.4	58.4	64.0	Moderate
N158	2	SFR	Yes	4	NOI-1	61.1	67.8	66.8	58.4	64.0	Severe
N159	2	SFR	Yes	4	NOI-1	61.1	64.2	65.2	58.4	64.0	Severe
N160	2	SFR	Yes	8	NOI-1, NOI-4	61.1	65.5	62.2	58.4	64.0	Moderate
N161	2	SFR	No	0	NOI-4	61.1	67.8	67.8	58.4	64.0	Severe
N162	2	SFR	Yes	8	NOI-1, NOI-2, NOI-4	61.1	69.1	60.4	58.4	64.0	Moderate
N163	2	SFR/MFR	Yes	8	NOI-1, NOI-2, NOI-4	61.1	71.6	61.9	58.4	64.0	Moderate
N164	2	SFR/MFR	Yes	8	NOI-1, NOI-2	61.1	65.8	54.8	58.4	64.0	No
N165	2	MFR	No	0	NOI-4	61.1	64.0	64.0	58.4	64.0	Severe
N166	2	MFR	Yes	8	NOI-1, NOI-4	61.1	68.6	61.9	58.4	64.0	Moderate
N168	2	Mobile Homes	Yes	8	NOI-1	61.1	64.9	58.9	58.4	64.0	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	
N169	2	Motel	No	0	None ²	68.0	63.1	63.1	62.9	68.1	Moderate
N170	2	SFR	Yes	4	NOI-1, NOI-4	58.7	61.9	60.1	57.1	62.8	Moderate
N171	2	SFR	Yes	4	NOI-1	58.7	59.4	57.4	57.1	62.8	Moderate
N172	2	SFR	Yes	4	NOI-1	58.7	62.2	60.2	57.1	62.8	Moderate
N173	2	SFR	Yes	4	NOI-1	58.7	63.5	60.5	57.1	62.8	Moderate
N174	2	SFR	Yes	4	NOI-1	68.0	65.9	62.9	62.9	68.1	No
N175	2	SFR	Yes	4	NOI-1	58.7	63.5	59.5	57.1	62.8	Moderate
N176	2	MFR	Yes	4	NOI-1	58.7	65.7	60.7	57.1	62.8	Moderate
N177	2	Thunderbird Villa Mobile Home Estates	Yes	4	NOI-1	57.4	65.9	59.9	56.4	62.2	Moderate
N178	2	Thunderbird Villa Mobile Home Estates	Yes	4	NOI-1	57.4	64.9	59.9	56.4	62.2	Moderate
N179	2	Thunderbird Villa Mobile Home Estates	Yes	4	NOI-1	57.4	67.8	61.8	56.4	62.2	Moderate
N180	2	Thunderbird Villa Mobile Home Estates	Yes	4	NOI-1	57.4	73.4	64.4	56.4	62.2	Severe
N181	3	Trinity Bible Church	No	0	NOI-4	75.3	78.9	76.9	70.0	78.4	Moderate
N184	3	American Indian Bible Church	No	0	NOI-4	74.7	76.7	76.7	70.0	78.0	Moderate
N185	2	SFR	Yes	8	NOI-1, NOI-2	59.9	58.3	45.3	57.7	63.3	No
N188	2	SFR	No	0	NOI-4, NOI-5	60.3	58.4	58.4	58.0	63.5	Moderate
N189	2	SFR	No	0	NOI-4, NOI-5	61.2	60.0	60.0	58.5	64.0	Moderate
N190	2	SFR	No	0	NOI-4, NOI-5	63.7	70.2	70.2	60.0	65.4	Severe
N191	2	SFR	Yes	8	NOI-1	64.0	69.6	62.6	60.2	65.6	Moderate

4 Affected Environment and Environmental Consequences

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	
N192	2	SFR	Yes	8	NOI-1	64.0	71.3	63.3	60.2	65.6	Moderate
N193	2	SFR	Yes	8	NOI-1	64.0	72.6	63.6	60.2	65.6	Moderate
N194	2	SFR	Yes	8	NOI-1	64.0	67.8	60.8	60.2	65.6	Moderate
N195	2	SFR	Yes	8	NOI-1	64.0	60.7	56.7	60.2	65.6	No
N196	2	SFR	Yes	8	NOI-1	64.0	67.8	60.8	60.2	65.6	Moderate
N197	2	SFR	Yes	8	NOI-1	64.0	72.6	63.6	60.2	65.6	Moderate
N199	2	SFR	Yes	4	NOI-1	57.9	62.8	58.8	56.7	62.4	Moderate
N200	2	SFR	Yes	4	NOI-1	66.7	75.6	65.6	62.0	67.3	Moderate
N201	2	SFR	Yes	4	NOI-1	66.1	69.2	59.2	61.6	66.9	No
N202	2	SFR	Yes	4	NOI-1	58.9	63.5	52.5	57.2	62.9	No
N203	2	SFR	No	0	NOI-3	50.3	65.8	55.8	53.5	59.7	Moderate
N204	2	SFR	No	0	NOI-3	50.3	70.4	60.4	53.5	59.7	Severe
N205	2	SFR	Yes	4	NOI-1, NOI-3	59.9	64.1	49.1	57.7	63.3	No
N206	2	SFR	Yes	4	NOI-1, NOI-3	65.1	76.8	56.8	60.9	66.3	No
N207	2	SFR	Yes	4	NOI-1, NOI-3	58.7	69.8	50.8	57.1	62.8	No
N208	2	SFR	Yes	4	NOI-1, NOI-3	64.6	66.3	50.3	60.6	66.0	No
N209	2	SFR	Yes	4	NOI-1, NOI-3	67.5	68.8	53.8	62.5	67.8	No
N210	2	SFR	Yes	4	NOI-1, NOI-3	60.6	74.4	55.4	58.1	63.7	No
N213	2	SFR	Yes	4	NOI-1	65.2	61.2	49.2	61.0	66.3	No
N214	2	MFR	Yes	4	NOI-1	51.7	60.4	56.4	53.9	60.0	Moderate
N215	2	SFR	Yes	4	NOI-1	58.0	67.4	59.4	56.7	62.4	Moderate
N216	2	SFR	Yes	4	NOI-1	58.0	68.9	59.9	56.7	62.4	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	
N217	2	SFR	Yes	4	NOI-1	58.0	67.4	60.4	56.7	62.4	Moderate
N218	2	SFR	Yes	4	NOI-1	58.0	68.6	60.6	56.7	62.4	Moderate
N219	2	SFR	Yes	4	NOI-1	58.0	68.0	62.0	56.7	62.4	Moderate
N220	2	SFR	Yes	4	NOI-1	58.0	67.7	60.7	56.7	62.4	Moderate
N221	3	Paramount High School	Yes	4	NOI-1	53.7	66.0	58.0	59.7	65.7	No
N222	2	SFR	Yes	4	NOI-1	51.7	67.7	61.7	53.9	60.0	Severe
N223	2	SFR	Yes	4	NOI-1, NOI-2	51.7	67.5	59.5	53.9	60.0	Moderate
N224	2	SFR	Yes	8	NOI-1, NOI-4	51.7	66.6	59.8	53.9	60.0	Moderate
N225	2	SFR	No	0	None ²	51.7	61.4	61.4	53.9	60.0	Severe
N226	2	SFR	No	0	NOI-4	51.7	67.2	67.2	53.9	60.0	Severe
N227	2	SFR	Yes	8	NOI-1, NOI-2, NOI-4	51.7	79.9	68.0	53.9	60.0	Severe
N228	2	SFR	Yes	8	NOI-1, NOI-2	51.7	66.8	55.8	53.9	60.0	Moderate
N229	2	SFR	Yes	8	NOI-1, NOI-2	51.7	69.8	58.8	53.9	60.0	Moderate
N230	2	SFR	Yes	8	NOI-1, NOI-2	51.7	75.0	63.0	53.9	60.0	Severe
N231	2	SFR	Yes	8	NOI-1, NOI-4	51.7	70.4	65.5	53.9	60.0	Severe
N232	2	SFR	No	0	NOI-4	51.7	67.7	67.7	53.9	60.0	Severe
N233	2	SFR/MFR	No	0	None ²	51.7	61.6	61.6	53.9	60.0	Severe
N234	2	Mobile Homes	Yes	8	NOI-1	52.0	58.3	52.3	54.1	60.1	No
N235	2	Mobile Homes	Yes	8	NOI-1	52.0	67.0	59.0	54.1	60.1	Moderate
N236	2	SFR	Yes	8	NOI-1	52.0	64.8	56.8	54.1	60.1	Moderate
N237	2	SFR	Yes	8	NOI-1	52.0	62.8	54.8	54.1	60.1	Moderate

4 Affected Environment and Environmental Consequences

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	
N238	2	SFR	Yes	8	NOI-1	52.0	60.5	53.5	54.1	60.1	No
N239	2	SFR	Yes	8	NOI-1	48.1	62.5	56.5	52.8	59.2	Moderate
N240	2	SFR	Yes	8	NOI-1	48.1	65.3	59.3	52.8	59.2	Severe
N241	2	SFR	Yes	8	NOI-1	52.0	62.9	55.9	54.1	60.1	Moderate
N242	2	SFR	Yes	8	NOI-1	52.0	61.5	53.5	54.1	60.1	No
N243	2	SFR	Yes	8	NOI-1	52.0	67.0	59.0	54.1	60.1	Moderate
N245	2	MFR	No	0	None ²	51.2	66.4	66.4	53.8	59.9	Severe
N246	2	MFR	No	0	NOI-4	51.2	70.9	70.9	53.8	59.9	Severe
N247	2	SFR	No	0	NOI-4	51.2	68.2	68.2	53.8	59.9	Severe
N248	2	MFR	Yes	8	NOI-1	51.2	62.5	57.5	53.8	59.9	Moderate
N249	2	SFR	No	0	NOI-4	59.5	64.6	64.6	57.5	63.1	Severe
N251	2	SFR	No	0	NOI-4	59.5	67.4	67.4	57.5	63.1	Severe
N252	3	Door Christian Fellowship Church	No	0	NOI-4	61.5	64.0	64.0	63.6	69.2	Moderate
N253	2	SFR	No	0	NOI-4	59.5	65.4	65.4	57.5	63.1	Severe
N254	2	SFR	Yes	8	NOI-1, NOI-2	59.5	66.6	57.6	57.5	63.1	Moderate
N255	2	Aztec Mobile Home	Yes	8	NOI-1, NOI-2	59.5	69.0	56.0	57.5	63.1	No
N259	2	SFR	Yes	8	NOI-1	59.5	59.4	55.4	57.5	63.1	No
N261	2	SFR/MFR	No	0	NOI-4, NOI-5	59.5	65.8	65.8	57.5	63.1	Severe
N264	2	MFR	No	0	NOI-4	59.5	57.7	57.7	57.5	63.1	Moderate
N266	3	Los Angeles County Fire Museum	No	0	NOI-4	58.0	61.7	61.7	61.7	67.4	Moderate
N267	2	MFR	No	0	NOI-4, NOI-5	56.0	69.9	69.9	55.7	61.6	Severe

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	
N268	2	MFR	No	0	None ²	56.0	66.4	66.4	55.7	61.6	Severe
N270	2	MFR	Yes	8	NOI-1	56.0	63.3	57.3	55.7	61.6	Moderate
N271	2	MFR	Yes	8	NOI-1	56.0	63.7	59.7	55.7	61.6	Moderate
N272	3	Bristol Civic Auditorium	Yes	8	NOI-1	58.0	66.8	58.8	61.7	67.4	No
N273	3	Bellflower Health Center	Yes	4	NOI-1	58.0	64.5	60.5	61.7	67.4	No
N274	2	SFR	Yes	4	NOI-1	56.0	67.8	62.8	55.7	61.6	Severe
N275	2	MFR	Yes	4	NOI-1	56.0	64.1	62.1	55.7	61.6	Severe
N276	2	MFR	Yes	4	NOI-1	69.4	68.4	63.4	63.9	69.1	No
N277	2	SFR	Yes	4	NOI-1	69.4	66.2	59.2	63.9	69.1	No
N278	2	SFR/MFR	Yes	4	NOI-1	69.4	74.0	65.0	63.9	69.1	Moderate
N279	2	SFR	Yes	4	NOI-1	69.4	67.9	61.9	63.9	69.1	No
N281	2	MFR	Yes	4	NOI-1	69.4	68.1	62.1	63.9	69.1	No
N282	2	MFR	Yes	4	NOI-1	69.4	68.7	64.7	63.9	69.1	Moderate
N283	2	SFR	Yes	4	NOI-1	57.7	71.4	67.4	56.6	62.3	Severe
N284	2	SFR	Yes	4	NOI-1	57.7	66.4	63.4	56.6	62.3	Severe
N285	2	SFR	Yes	8	NOI-1, NOI-2	57.7	71.1	61.1	56.6	62.3	Moderate
N286	2	Bel Tooren Villa Convalescent Hospital	Yes	4	NOI-1	69.4	68.0	61.0	63.9	69.1	No
N287	2	SFR	Yes	4	NOI-1	57.7	71.8	64.8	56.6	62.3	Severe
N288	2	SFR	Yes	4	NOI-1	57.7	65.4	61.4	56.6	62.3	Moderate
N289	2	SFR	Yes	8	NOI-1, NOI-2	57.7	70.8	57.8	56.6	62.3	Moderate

4 Affected Environment and Environmental Consequences

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	
N290	2	SFR	Yes	8	NOI-1, NOI-2	57.7	73.3	59.3	56.6	62.3	Moderate
N291	2	SFR	Yes	8	NOI-1, NOI-2	57.7	69.8	58.8	56.6	62.3	Moderate
N292	2	SFR	Yes	8	NOI-1, NOI-2	57.7	63.3	54.3	56.6	62.3	No
N293	2	SFR	Yes	8	NOI-1, NOI-2	57.7	66.2	57.2	56.6	62.3	Moderate
N294	2	SFR	Yes	8	NOI-1, NOI-2	57.7	71.7	61.7	56.6	62.3	Moderate
N295	2	SFR	Yes	8	NOI-1	57.7	62.8	54.8	56.6	62.3	No
N296	2	SFR	Yes	8	NOI-1, NOI-2	57.7	63.5	54.5	56.6	62.3	No
N297	2	SFR	Yes	8	NOI-1, NOI-2	57.7	72.0	60.0	56.6	62.3	Moderate
N298	2	SFR	Yes	4	NOI-1	57.7	65.0	62.0	56.6	62.3	Moderate
N299	2	SFR	Yes	4	NOI-1	57.7	63.0	59.0	56.6	62.3	Moderate
N300	2	SFR	Yes	4	NOI-1	57.7	65.8	61.8	56.6	62.3	Moderate
N301	2	SFR	Yes	4	NOI-1	57.7	66.1	62.1	56.6	62.3	Moderate
N303	3	Rio Hondo Metal Health Clinic	No	0	NOI-4	61.4	63.7	63.7	63.6	69.1	Moderate
N306	2	SFR	Yes	8	NOI-1	51.2	65.6	57.6	53.8	59.9	Moderate
N307	2	SFR	Yes	8	NOI-1	51.2	71.8	64.8	53.8	59.9	Severe
N308	2	SFR	Yes	4	NOI-1	51.2	65.6	60.6	53.8	59.9	Severe
N309	2	SFR	Yes	4	NOI-1	51.2	71.8	61.8	53.8	59.9	Severe
N310	2	SFR	Yes	4	NOI-1	51.2	71.8	61.8	53.8	59.9	Severe
N311	2	SFR	Yes	4	NOI-1	51.2	67.3	61.3	53.8	59.9	Severe
N312	2	SFR	Yes	4	NOI-1	51.2	71.8	62.8	53.8	59.9	Severe
N313	2	SFR	Yes	4	NOI-1	51.2	66.4	60.4	53.8	59.9	Severe

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	
N314	2	SFR	Yes	4	NOI-1	51.2	70.4	59.4	53.8	59.9	Moderate
N315	2	SFR	Yes	4	NOI-1	51.2	72.8	57.8	53.8	59.9	Moderate
N316	2	SFR	Yes	4	NOI-1	51.2	63.2	51.2	53.8	59.9	No
N317	2	SFR	Yes	4	NOI-1	51.2	65.4	55.4	53.8	59.9	Moderate
N318	2	SFR	Yes	4	NOI-1	51.2	68.4	57.4	53.8	59.9	Moderate
N319	2	SFR	Yes	4	NOI-1	51.2	71.8	58.8	53.8	59.9	Moderate
N320	2	SFR	Yes	4	NOI-1	51.2	63.9	52.9	53.8	59.9	No
N321	2	SFR	Yes	4	NOI-1	48.0	65.6	61.6	52.7	59.2	Severe
N322	2	SFR	Yes	4	NOI-1, NOI-4, NOI-5	48.0	75.8	69.8	52.7	59.2	Severe
N323	2	SFR	Yes	4	NOI-1	48.0	72.3	64.3	52.7	59.2	Severe
N324	2	SFR	Yes	4	NOI-1	48.0	65.8	60.8	52.7	59.2	Severe
N325	2	SFR	Yes	4	NOI-1	48.0	67.3	63.3	52.7	59.2	Severe
N326	2	SFR	Yes	4	NOI-1, NOI-4, NOI-5	48.0	74.9	70.0	52.7	59.2	Severe
N327	2	MFR	No	0	NOI-4, NOI-5	48.0	64.6	64.6	52.7	59.2	Severe
N328	2	SFR, MFR	Yes	8	NOI-1, NOI-2, NOI-4, NOI-5	48.0	73.5	65.2	52.7	59.2	Severe
N329	2	SFR	Yes	8	NOI-1	48.0	60.6	54.6	52.7	59.2	Moderate
N330	2	SFR	Yes	8	NOI-1, NOI-2	48.0	59.6	48.6	52.7	59.2	No
N331	2	MFR, SFR	Yes	8	NOI-1, NOI-2	48.0	72.0	60.0	52.7	59.2	Severe
N332	3	Artesia Historical Museum	Yes	8	NOI-1, NOI-2	50.0	64.4	53.4	58.4	64.6	No

4 Affected Environment and Environmental Consequences

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	
N333	2	SFR	No	0	None ²	48.0	59.4	59.4	52.7	59.2	Severe
N334	2	SFR	Yes	8	NOI-1, NOI-2, NOI-4, NOI-5	48.0	74.1	66.2	52.7	59.2	Severe
N335	2	SFR, MFR	No	0	None ²	48.0	58.6	58.6	52.7	59.2	Moderate
N336	2	SFR	Yes	8	NOI-1, NOI-2	48.0	61.9	48.9	52.7	59.2	No
N337	3	Wan Yuen Temple	Yes	8	NOI-1, NOI-2	50.0	66.5	54.5	58.4	64.6	No
N338	2	SFR, MFR	Yes	8	NOI-1, NOI-2	48.0	63.4	50.4	52.7	59.2	No
N339	2	SFR, MFR	Yes	8	NOI-1, NOI-2	48.0	68.9	57.9	52.7	59.2	Moderate
N340	2	SFR	No	0	NOI-2	48.0	57.6	52.6	52.7	59.2	No
N341	2	SFR	No	0	NOI-2	48.0	63.2	58.2	52.7	59.2	Moderate
N342	2	SFR	No	0	NOI-2	48.0	64.5	59.5	52.7	59.2	Severe
N343	2	SFR	No	0	NOI-2	48.0	57.6	52.6	52.7	59.2	No
N344	2	SFR	Yes	8	NOI-1, NOI-2	52.0	64.0	52.0	54.1	60.1	No
N346	2	SFR	Yes	8	NOI-1, NOI-2	52.0	61.0	49.0	54.1	60.1	No
N347	2	SFR	Yes	8	NOI-1	52.0	55.5	48.5	54.1	60.1	No

Source: Prepared for Metro in 2021

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; 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
N85	2	SFR/MFR	None	Soundwall not physically feasible, design speed reduced at this location.
N89	2	SFR/MFR	None	Soundwall not physically feasible, design speed reduced at this location.
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.
N225	2	SFR	None	Receptor at intersection and implementation of soundwall not physically feasible.
N233	2	SFR/MFR	None	Receptor at intersection and implementation of soundwall not physically feasible.
N245	2	MFR	None	Receptor greater than height of soundwall and located near intersection.
N268	2	MFR	None	Receptor greater than height of soundwall.
N333	2	SFR	None	Receptor at intersection and implementation of soundwall not physically feasible.
N335	2	SFR	None	Receptor at intersection and implementation of soundwall not physically feasible.

Source: Prepared for Metro in 2021

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; SFR = single-family residential; MFR = multifamily residential

Table 4.7.9. Mitigated LRT Noise – Alternative 2

Cluster No.	Cat. ¹	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N2	2	SFR/MFR	Yes	4	NOI-1	56.3	68.7	60.7	55.9	61.7	Moderate
N3	2	SFR/MFR	Yes	4	NOI-1	56.3	64.6	59.6	55.9	61.7	Moderate
N4	2	SFR/MFR	Yes	4	NOI-1	56.3	71.2	62.2	55.9	61.7	Severe
N5	2	SFR/MFR	Yes	4	NOI-1	56.3	64.0	59.0	55.9	61.7	Moderate
N6	2	SFR/MFR	Yes	4	NOI-1	56.3	68.7	60.7	55.9	61.7	Moderate
N7	2	SFR/MFR	Yes	4	NOI-1	56.3	64.0	59.0	55.9	61.7	Moderate
N10	2	SFR/MFR	Yes	4	NOI-1	66.8	63.6	58.0	62.0	67.3	No
N11	2	SFR/MFR	Yes	4	NOI-1	66.8	65.1	59.1	62.0	67.3	No
N12	2	SFR/MFR	Yes	4	NOI-1	66.8	67.4	60.4	62.0	67.3	No
N13	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	69.2	59.2	62.0	67.3	No
N14	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	72.4	60.4	62.0	67.3	No
N15	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	71.3	60.3	62.0	67.3	No
N16	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	69.0	59.0	62.0	67.3	No
N17	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	81.0	66.0	62.0	67.3	Moderate
N18	2	SFR/MFR	Yes	4	NOI-1	66.8	66.3	60.3	62.0	67.3	No
N19	2	SFR/MFR	Yes	4	NOI-1	66.8	76.0	66.0	62.0	67.3	Moderate
N20	2	SFR/MFR	Yes	4	NOI-1, NOI-2	66.8	72.4	60.4	62.0	67.3	No
N21	2	SFR/MFR	Yes	4	NOI-1	66.8	62.7	57.7	62.0	67.3	No
N22	2	SFR/MFR	Yes	4	NOI-1	66.8	62.7	57.7	62.0	67.3	No
N23	2	SFR/MFR	Yes	4	NOI-1	66.8	67.4	60.4	62.0	67.3	No
N24	2	SFR	Yes	4	NOI-1	66.8	73.0	63.0	62.0	67.3	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
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N25	2	SFR/MFR	Yes	4	NOI-1	66.8	68.7	60.7	62.0	67.3	No
N27	2	SFR/MFR	Yes	4	NOI-1	66.8	63.0	58.0	62.0	67.3	No
N29	2	SFR/MFR	Yes	4	NOI-1	66.8	67.4	60.4	62.0	67.3	No
N30	2	SFR/MFR	Yes	4	NOI-1	66.8	64.2	59.2	62.0	67.3	No
N32	2	SFR/MFR	Yes	4	NOI-1	70.5	67.4	55.4	64.7	69.8	No
N33	2	MFR	Yes	4	NOI-1	70.5	64.8	58.8	64.7	69.8	No
N34	2	MFR	Yes	4	NOI-1	70.5	70.0	59.0	64.7	69.8	No
N35	2	SFR/MFR	Yes	4	NOI-1	70.5	68.7	57.7	64.7	69.8	No
N37	2	MFR	Yes	4	NOI-1	70.5	66.5	55.5	64.7	69.8	No
N38	2	MFR	Yes	4	NOI-1	70.5	66.0	58.6	64.7	69.8	No
N40	2	SFR	Yes	4	NOI-1, NOI-2	70.5	67.7	56.7	64.7	69.8	No
N42	2	SFR/MFR	Yes	4	NOI-1, NOI-2	70.5	71.0	56.0	64.7	69.8	No
N43	2	SFR	Yes	4	NOI-1, NOI-2	70.5	76.0	59.0	64.7	69.8	No
N44	2	SFR	Yes	4	NOI-1, NOI-2	70.5	70.1	58.1	64.7	69.8	No
N45	2	SFR	No	0	NOI-2	70.5	66.9	61.9	64.7	69.8	No
N50	2	SFR/MFR	No	0	NOI-3	65.4	74.4	64.4	61.1	66.4	Moderate

Source: Prepared for Metro in 2021

Notes: Only clusters (groups of sensitive uses) that would have different effects from Alternative 1 are shown.

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; L_{dn} = day-night noise level; L_{eq} = equivalent sound level; LRT = light rail transit; MFR = multifamily residential; SFR = single-family residential

Table 4.7.10. Mitigated LRT Noise – Alternative 3

Cluster No.	Cat. ¹	Land Use	Soundwalls	Soundwall Height	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
						Existing	Unmitigated	Mitigated	Impact Threshold		
									Moderate	Severe	
N43	2	SFR	No	0	NOI-2	70.5	66.0	61.0	64.7	69.8	No

Source: Prepared for Metro in 2021

Notes: Only clusters (groups of sensitive uses) that would have different effects from Alternative 1 are shown.

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; L_{dn} = day-night noise level; L_{eq} = equivalent sound level; LRT = light rail transit; SFR = single-family residential

Figure 4.7-5. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (Southeast Los Angeles to Florence)



Source: Prepared for Metro in 2021

Figure 4.7-6. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (Florence to City of Huntington Park)



Source: Prepared for Metro in 2021

Figure 4.7-7. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Huntington Park to City of Cudahy)



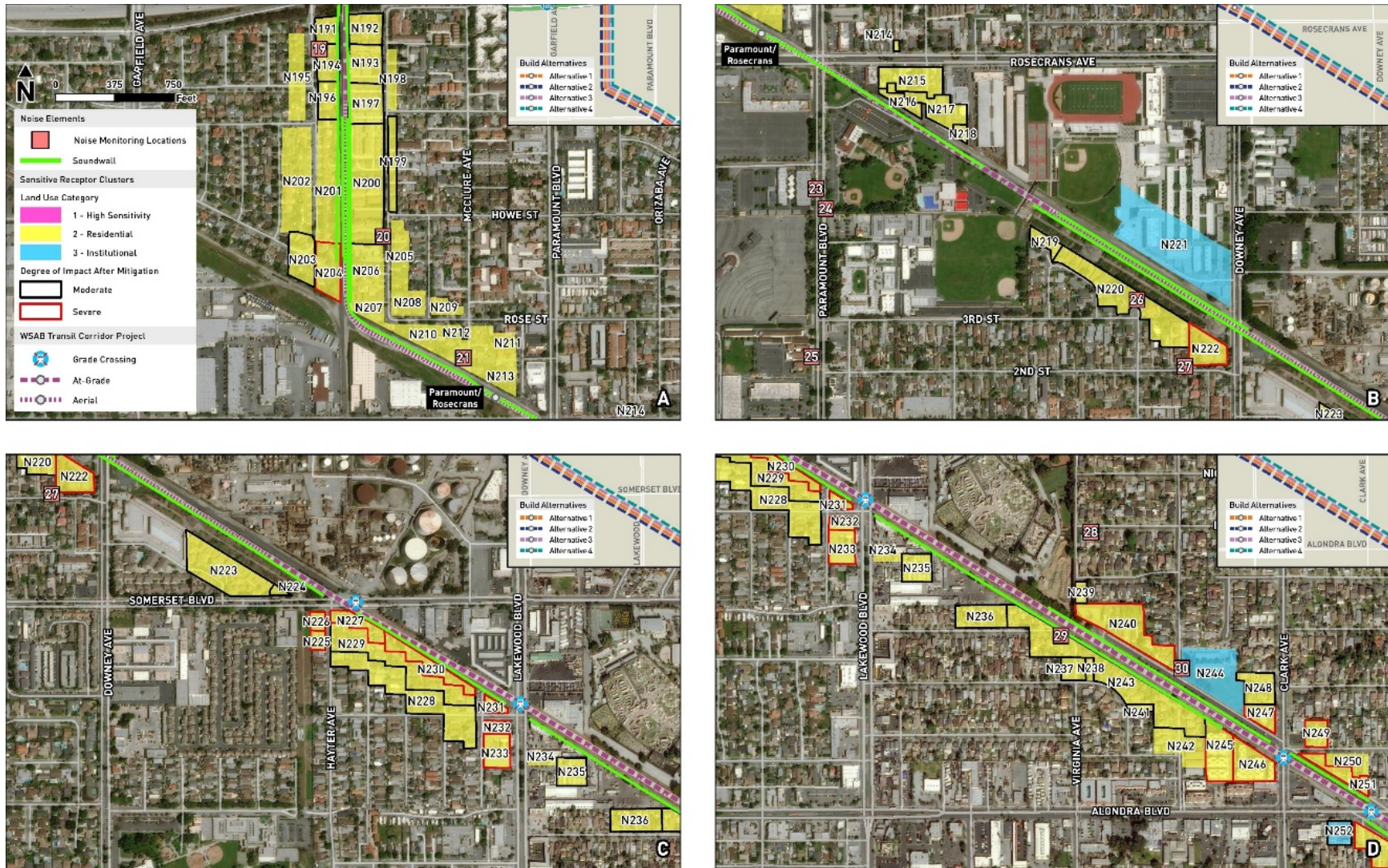
Source: Prepared for Metro in 2021

Figure 4.7-8. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of South Gate)



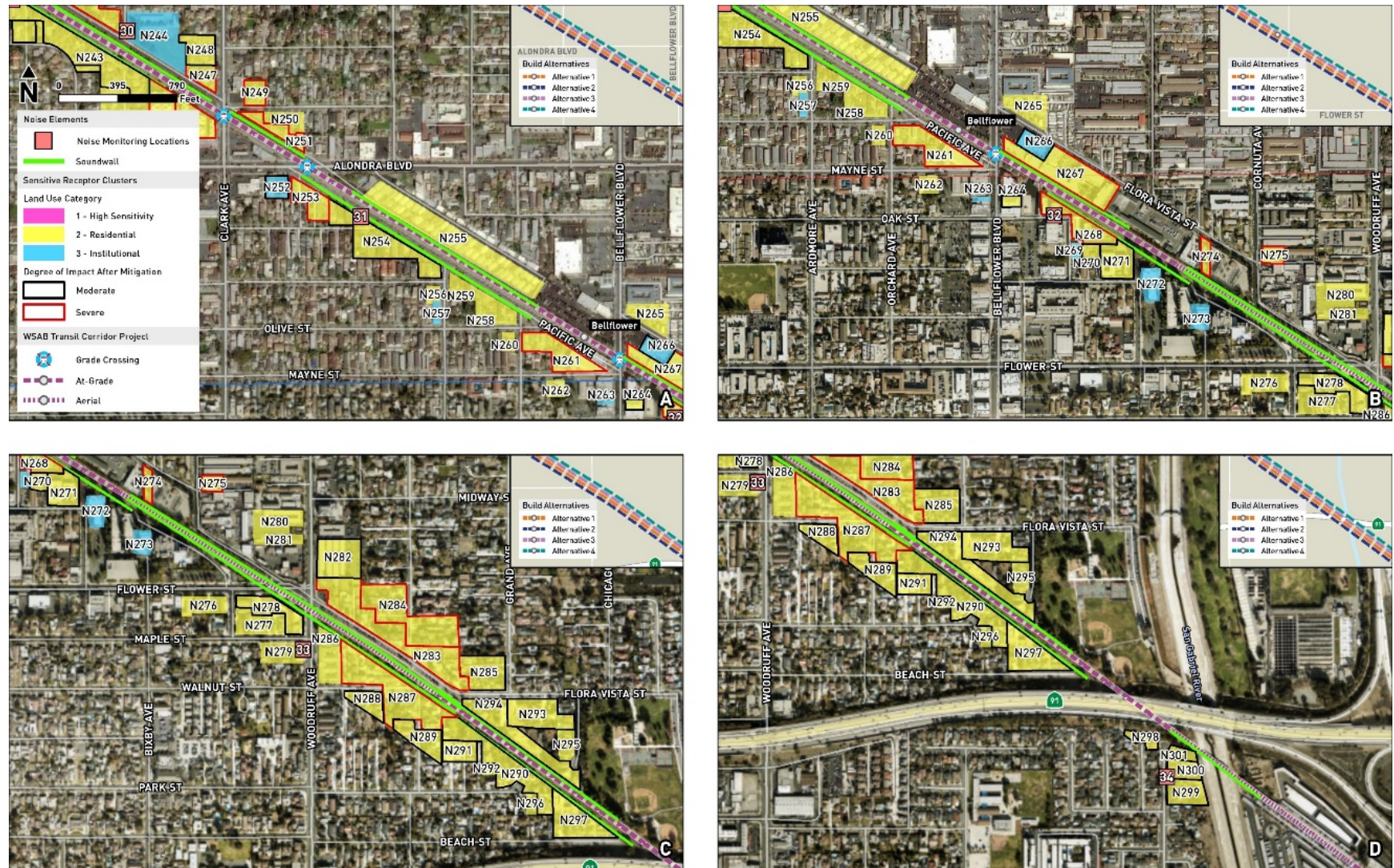
Source: Prepared for Metro in 2021

Figure 4.7-9. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Paramount to City of Bellflower)



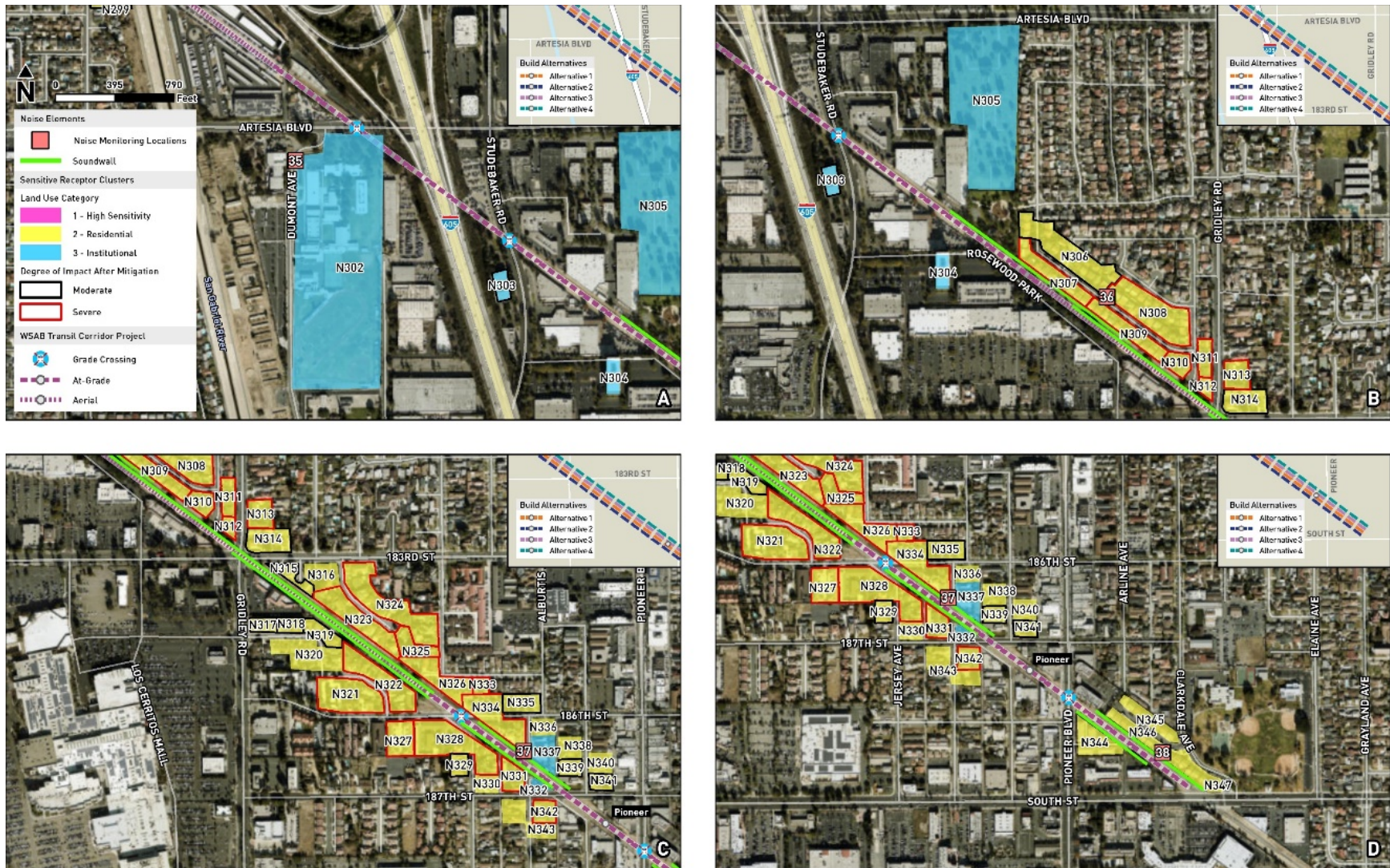
Source: Prepared for Metro in 2021

Figure 4.7-10. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Bellflower to City of Cerritos)



Source: Prepared for Metro in 2021

Figure 4.7-11. LRT Noise Impacts Remaining After Mitigation, including Soundwalls (City of Cerritos to City of Artesia)



Source: Prepared for Metro in 2021

Mitigated Freight Noise: In many cases, mitigation of the LRT would 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-5, which include soundwalls, low impact frogs, wheel squeal noise monitoring, crossing signal bells, and gate-down-bell-stop variance, would apply to LRT noise, which would reduce overall noise impact related to freight track relocation. However, the analysis does not take into account reductions associated with Mitigation Measures NOI-4 (Crossing Signal Bells) or NOI-5 (Gate-Down-Bell-Stop Variance) because they would first require CPUC approval. Additional soundwalls necessary to mitigate noise related to freight track relocation have been proposed under Mitigation Measure NOI-7 (Freight Track Relocation Soundwalls). Mitigated impacts and impacts remaining after mitigation are shown in Figure 4.7-12 and Figure 4.7-13.

Mitigated noise levels for Alternative 1 are shown in Table 4.7.11. Under Alternative 1, nine clusters would be reduced from a moderate impact to no impact, and four clusters would be reduced from severe to no impact for a total of 13 benefited clusters. Thirty-three moderate impacts and nine severe impacts would 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-7 (Freight Track Relocation Soundwalls). Four moderate impacts and two severe impacts would 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 would not typically be open when the freight is traversing Randolph Street at night. Mitigation Measures NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) would provide noise reductions to impacted clusters near grade crossing should CPUC approval be obtained. Mitigated impacts related to freight track relocation for Alternatives 2 and 3 would be the same as Alternatives 1. Mitigated noise levels for Alternative 4 are shown in Table 4.7.12. Under Alternative 4, four clusters would be reduced from a moderate impact to no impact, and four clusters would be reduced from severe to no impact for a total of eight benefited clusters. Thirteen moderate impacts and one severe impact would 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-7 (Freight Track Relocation Soundwalls). One moderate impact would remain at Category 3 clusters. Therefore, under NEPA, adverse effects for Alternatives 1, 2, 3, and 4 would remain adverse even after implementation of mitigation.

Table 4.7.11. Mitigated Freight Track Relocation Noise – Alternatives 1, 2, and 3

Street	Cluster No.	Cat. ¹	Land Use	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
Randolph Street	N50	2	SFR/MFR	NOI-3	68.9	74.3	66.3	63.5	68.7	Moderate
	N51	3	Lillian Street Elementary	NOI-2	71.6	73.5	73.0	70.0	76.7	Moderate
	N54	2	SFR	NOI-4	71.0	67.2	67.2	65.1	70.2	Moderate
	N56	2	SFR	NOI-4	71.0	68.5	68.5	65.1	70.2	Moderate
	N58	2	SFR/MFR	NOI-4	71.0	66.8	66.8	65.1	70.2	Moderate
	N60	2	SFR/MFR	NOI-4	71.0	69.4	69.4	65.1	70.2	Moderate
	N61	2	SFR	NOI-4	71.0	67.1	67.1	65.1	70.2	Moderate
	N62	3	Templo Asamblea De Oracion	NOI-4	71.1	73.2	73.2	70.0	75.9	Moderate
	N65	2	SFR/MFR	NOI-4	71.0	68.0	68.0	65.1	70.2	Moderate
	N66	2	MFR	NOI-4	71.0	65.9	65.2	65.1	70.2	Moderate
	N67	3	UEI College	NOI-4	70.4	71.8	71.8	70	75.4	Moderate
	N71	2	MFR	NOI-4	64.8	69.1	69.1	60.7	66.1	Severe
	N73	2	SFR/MFR	NOI-2, NOI-4	64.8	68.9	66.8	60.7	66.1	Severe
	N74	2	SFR/MFR	NOI-2	64.8	64.4	61.0	60.7	66.1	Moderate
	N75	2	MFR	NOI-2	64.8	61.5	58.7	60.7	66.1	No
	N76	2	SFR/MFR	NOI-2	64.8	68.9	66.4	60.7	66.1	Severe
	N77	2	SFR/MFR	NOI-2	64.8	64.7	62	60.7	66.1	Moderate
	N78	2	SFR/MFR	NOI-2, NOI-4	64.8	63.9	61	60.7	66.1	Moderate
	N79	2	SFR/MFR	NOI-2, NOI-4	64.8	72.0	69.5	60.7	66.1	Severe
	N80	2	SFR/MFR	NOI-2, NOI-4	64.8	71.1	68.6	60.7	66.1	Severe
N81	2	SFR	NOI-2	64.8	62.4	59.5	60.7	66.1	No	
N82	2	SFR/MFR	NOI-4	64.8	61.8	61.9	60.7	66.1	Moderate	
N83	3	Huntington Park High School	NOI-4	70.6	71.3	71.3	70.0	75.5	Moderate	

4 Affected Environment and Environmental Consequences

Street	Cluster No.	Cat. ¹	Land Use	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
	N85	2	SFR/MFR	None	64.8	65	65.1	60.7	66.1	Moderate
	N86	2	SFR/MFR	NOI-4	64.8	69.1	69.1	60.7	66.1	Severe
	N88	2	SFR/MFR	NOI-4	64.8	68.1	68.1	60.7	66.1	Severe
	N89	2	SFR/MFR	None	66.1	65.2	65.2	61.6	66.9	Moderate
	N92	2	SFR/MFR	NOI-4	66.1	63.4	63.4	61.6	66.9	Moderate
	N93	2	SFR	NOI-4	66.1	68.2	68.2	61.6	66.9	Severe
	N94	2	SFR/MFR	NOI-4	66.1	65.8	65.8	61.6	66.9	Moderate
	N96	2	SFR	NOI-4	66.1	65.2	65.1	61.6	66.9	Moderate
	N98	2	SFR/MFR	NOI-4	66.1	65.6	65.5	61.6	66.9	Moderate
	N99	2	SFR/MFR	NOI-4	66.1	62.7	62.7	61.6	66.9	Moderate
	N100	3	San Antonio Elementary	NOI-1, NOI-4	69.8	70.4	63.5	70.0	75.3	No
	N101	2	SFR	NOI-1	66.1	61.8	57.8	61.6	66.9	No
	N102	2	SFR	NOI-1	66.1	65.3	60.4	61.6	66.9	No
Facade Avenue	N181	3	Trinity Bible Church	NOI-4	75.2	78.6	78.6	70.0	78.4	Severe
	N182	2	SFR	NOI-4	59.3	58.9	57.5	57.1	62.8	Moderate
	N184	3	American Indian Bible Church	NOI-4	70.6	77.5	77.5	70.0	75.1	Severe
	N185	2	SFR	NOI-1, NOI-2	59.9	60.8	52.9	57.4	63	No
	N186	2	SFR	NOI-1	59.3	57.6	53.6	57.1	62.8	No
	N187	2	SFR	NOI-2	59.9	59.5	58	57.4	63	Moderate
	N188	2	SFR	NOI-4, NOI-5	60.3	60.7	60.8	57.6	63.2	Moderate
	N189	2	SFR	NOI-4, NOI-5	61.2	62.5	62.5	58.1	63.7	Moderate
	N190	2	SFR	NOI-4, NOI-5	63.7	70.9	70.9	59.5	65	Severe
	N191	2	SFR	NOI-1, NOI-7	64.0	71.0	63.7	60.2	65.6	Moderate
	N192	2	SFR	NOI-1, NOI-7	64.0	71.9	64.3	60.2	65.6	Moderate
N193	2	SFR	NOI-1, NOI-7	64.0	73.1	64.3	60.2	65.6	Moderate	

Street	Cluster No.	Cat. ¹	Land Use	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
	N194	2	SFR	NOI-1, NOI-7	64.0	69.8	62.5	60.2	65.6	Moderate
	N195	2	SFR	NOI-1, NOI-7	64.0	61.3	57.1	60.2	65.6	No
	N196	2	SFR	NOI-1, NOI-7	64.0	70.0	62.7	60.2	65.6	Moderate
	N197	2	SFR	NOI-1, NOI-7	64.0	73.2	64.5	60.2	65.6	Moderate
	N199	2	SFR	NOI-1, NOI-7	57.9	63.1	59	56.3	62	Moderate
	N200	2	SFR	NOI-1, NOI-7	66.7	75.9	66.1	61.3	66.6	Moderate
	N201	2	SFR	NOI-1, NOI-7	66.1	70.9	61.7	60.9	66.3	Moderate
	N202	2	SFR	NOI-1, NOI-7	58.9	63.9	53.4	56.7	62.4	No
	N205	2	SFR	NOI-1, NOI-3, NOI-7	57.7	64.3	51.0	56.2	61.9	No
	N209	2	SFR	NOI-1, NOI-3, NOI-7	58.0	68.9	54.2	56.4	62.1	No
	N210	2	SFR	NOI-1, NOI-3, NOI-7	65.6	75.0	60.7	60.6	66	Moderate
	N212	2	SFR	NOI-1, NOI-7	60.1	59.1	49.0	57.4	63	No
	N213	2	SFR	NOI-1, NOI-7	65.2	66.9	59.0	60.3	65.7	No

Source: Prepared for Metro in 2021

Notes: ¹Category 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; L_{dn} = day-night noise level; L_{eq} = equivalent sound level; LRT = light rail transit; MFR = multifamily residential; SFR = single-family residential

Table 4.7.12. Mitigated Freight Track Relocation Noise – Alternative 4

	Cluster No.	Cat. ¹	Land Use	Mitigation Measures	Noise Level (Cat. 2 dBA, L _{dn}) (Cat. 3 dBA, L _{eq})					Impact
					Existing	Unmitigated	Mitigated	Impact Threshold		
								Moderate	Severe	
Facade Avenue	N184	3	American Indian Bible Church	NOI-4	70.6	77.5	70.2	70.0	75.1	Moderate
	N185	2	SFR	NOI-1, NOI-2	59.9	60.8	52.4	57.4	63.0	No
	N187	2	SFR	NOI-2	59.9	59.5	57.5	57.4	63.0	Moderate

Source: Prepared for Metro in 2020

Notes: ¹Category 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.

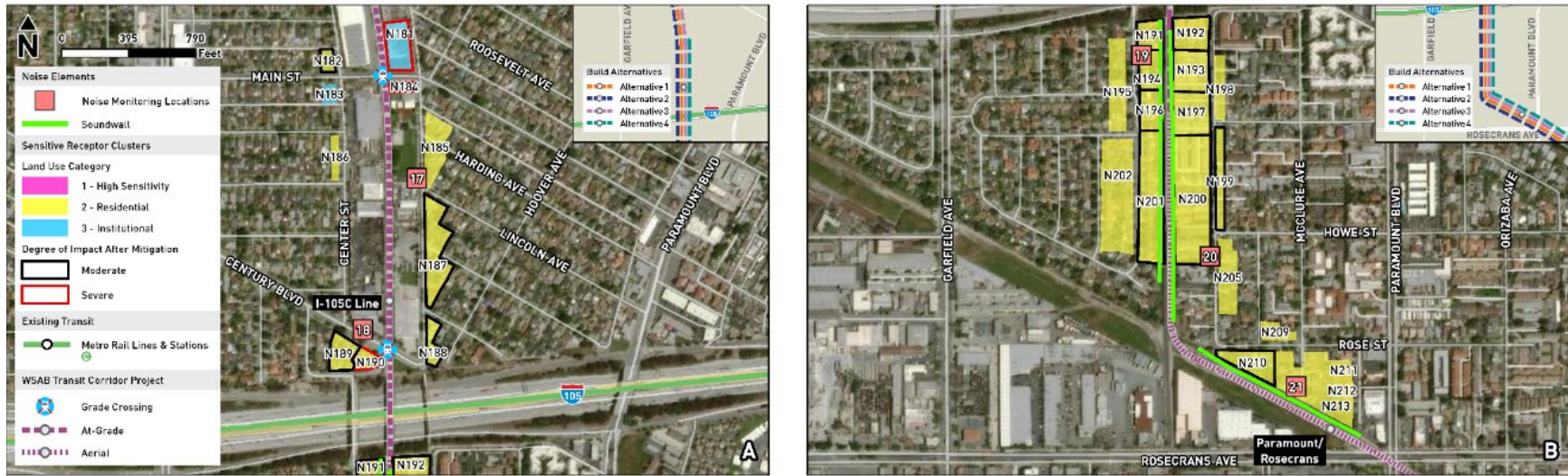
Cat. = category; dBA = A-weighted decibel; L_{dn} = day-night noise level; L_{eq} = equivalent sound level; SFR = single-family residential

Figure 4.7-12. Freight Noise Impacts Remaining After Mitigation, including Soundwalls



Source: Prepared for Metro in 2021

Figure 4.7-13. Freight Noise Impacts Remaining After Mitigation, including Soundwalls



Source: Prepared for Metro in 2021

Vibration

VIB-1 Ballast Mat or Resilient Rail Fasteners. At the locations identified in the following table where vibration impacts would occur, Metro would 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 will be verified during final design.

VIB-1 Ballast Mat or Resilient Rail Fasteners

Civil Station	Alternative(s)	Location
705+00 to 757+00	1, 2, and 3	Between Albany St and Arbutus Ave
802+00 to 893+00	1, 2, and 3	Between Gage Ave and Cecilia St
1082+00 to 1135+00	1, 2, 3, and 4	Between Nevada Ave and Paramount High School
1162+00 to 1232+00	1, 2, 3, and 4	Between approximately 600 feet southeast of Downey Ave and Ardmore Ave
1251+00 to 1257+00	1, 2, 3, and 4	Between approximately 300 feet southeast of Bellflower Blvd and approximately 200 feet northeast of Civic Center Dr
1273+00 to 1311+00	1, 2, 3, and 4	Between Flower St and San Gabriel River Channel
1363+00 to 1403+00	1, 2, 3, and 4	Between approximately 500 feet southeast of Rosewood Park and 187th St
1410+00 to 1419+00	1, 2, 3, and 4	Between Pioneer Blvd and South St

VIB-2 Low Impact Frogs. Low impact frogs would be used at the turnout and crossover track locations identified in the following table where exceedance of the Federal Transit Administration impact thresholds has been identified. These locations would be verified during final design.

VIB-2 Low Impact Frogs

Civil Station	Alternative(s)	Location	Clusters
415+50	1	Between Flower St and Hope St	8, 9, and 10
602+00	1 and 2	Between 41st Pl and 42nd St	31, 33, and 34
655+00	1, 2, and 3	Between 55th St and 57th St	43
740+50	1, 2, and 3	Between Templeton St and Miles Ave	62, 63, and 64
808+00	1, 2, and 3	Between Iris Ave and Nevada St	81
874+00	1, 2, and 3	Between Otis Ave and Santa Ana St	115 and 116
1179+00	1, 2, 3, and 4	Between Lincoln Ave and Florence Ave	153, 154, and 156
1229+50	1, 2, 3, and 4	Between Castana Ave and Olivia Ave	172, 173, 174, and 175
1289+50	1, 2, 3, and 4	Between Alondra Blvd and Harvard St	192, 193, and 194
1294+00	1, 2, 3, and 4	Between Flora Vista St and Park St	195, 196, 197, and 198
1399+00	1, 2, 3, and 4	Between 186th St and 187th St	221, 222, and 223
1411+50	1, 2, 3, and 4	Between Pioneer Blvd and South Ave	230, 231 and 232

Mitigated LRT Vibration: An FTA Detailed Vibration Assessment will be conducted during the final design for those locations identified as exceeding the FTA impact thresholds along the Project. A Detailed Vibration Assessment at these locations may show that vibration impacts would not occur and control measures are not needed. Nonetheless, under NEPA, adverse effects for Alternatives 1, 2, 3, and 4 would remain even after implementation of mitigation. Residual impacts are shown in Figure 4.7-14 through Figure 4.7-19.

Alternative 1: Los Angeles Union Station to Pioneer Station: As shown in Table 4.7.13, although Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would reduce vibration impacts, 14 clusters would still remain impacted in the range of 1 VdB to 5 VdB. Mitigated impacts and impacts remaining after mitigation are shown in Figure 4.7-14 through Figure 4.7-19. According to FTA guidance, there is a strong chance that after mitigation ground-borne vibration levels at the 14 clusters would be below the impact threshold. Vibration impacts at the one cluster exceeding the FTA impact threshold by more than 5 VdB would remain after mitigation. Nonetheless, under NEPA, Alternative 1 impacts would be adverse even after implementation of mitigation. No vibration impacts have been identified at the freight track relocations.

Alternative 2: 7th St/Metro Center to Pioneer Station: Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would apply to Alternative 2. The underground segment of Alternative 2 would not result in vibration impacts. The remainder of Alternative 2 would follow the same alignment as Alternative 1. As shown in Table 4.7.13, although Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would reduce vibration impacts, 14 clusters would still remain impacted in the range of 1 VdB to 5 VdB. According to FTA guidance, there is a strong chance that after mitigation, ground-borne vibration levels at the 14 clusters would be below the impact threshold. Vibration impacts at the one cluster exceeding the FTA impact threshold by more than 5 VdB would remain after mitigation. Nonetheless, under NEPA, Alternative 2 impacts would be adverse even after implementation of mitigation. No vibration impacts have been identified at the freight track relocations.

Alternative 3: Slauson/A Line (Blue) to Pioneer Station: Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would apply to Alternative 3. No underground portion is proposed and, therefore, no vibration impacts related to underground LRT pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment. Alternative 3 would affect vibration clusters 41 through 233. As shown in Table 4.7.13, although Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would reduce vibration impacts, 13 clusters would still be impacted by LRT vibration in the range of 1 VdB to 5 VdB. According to FTA guidance, there is a strong chance that after mitigation, ground-borne vibration levels at these 13 clusters would be below the impact threshold. Nonetheless, under NEPA, Alternative 3 impacts would be adverse even after implementation of mitigation. No vibration impacts have been identified at the freight track relocations.

Table 4.7.13. Mitigated LRT Vibration

Cluster No.	Alternative	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
V7	1, 2	SFR/MFR	6	35	79	Resilient DF Rail Fasteners	74	72	Yes
V31	1, 2	SFR/MFR	40	55	80 ³	Resilient DF Rail Fasteners and Low Impact Frog	69	72	No
V33	1, 2	SFR/MFR	40	55	78 ³	Resilient DF Rail Fasteners and Low Impact Frog	68	72	No
V34	1, 2	SFR/MFR	110	55	74 ³	Resilient DF Rail Fasteners and Low Impact Frog	65	72	No
V37	1, 2	SFR/MFR	40	55	73	Resilient DF Rail Fasteners	68	72	No
V48	1, 2, 3	SFR	55	35	73	Ballast Mat	65	72	No
V53	1, 2, 3	SFR/MFR	40	35	75	Ballast Mat	67	72	No
V56	1, 2, 3	SFR/MFR	55	35	73	Ballast Mat	65	72	No
V58	1, 2, 3	MFR	55	35	73	Ballast Mat	65	72	No
V59	1, 2, 3	SFR/MFR	50	35	74	Ballast Mat	66	72	No
V62	1, 2, 3	SFR/MFR	110	35	74 ³	Ballast Mat and Low Impact Frog	60	72	No
V63	1, 2, 3	SFR/MFR	50	35	81 ³	Ballast Mat and Low Impact Frog	65	72	No
V66	1, 2, 3	SFR/MFR	40	35	75	Ballast Mat	67	72	No
V67	1, 2, 3	SFR/MFR	50	35	74	Ballast Mat	66	72	No
V68	1, 2, 3	SFR/MFR	50	35	74	Ballast Mat	66	72	No
V69	1, 2, 3	SFR/MFR	45	35	75	Ballast Mat	67	72	No
V72	1, 2, 3	SFR	50	35	74	Ballast Mat	66	72	No
V81	1, 2, 3	SFR	20	55	92 ³	Ballast Mat and Low Impact Frog	74	72	Yes

4 Affected Environment and Environmental Consequences

Cluster No.	Alternative	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
V82	1, 2, 3	SFR	90	55	77	Ballast Mat	69	72	No
V84	1, 2, 3	SFR/MFR	35	50	79	Ballast Mat	71	72	No
V86	1, 2, 3	SFR/MFR	25	50	80	Ballast Mat	72	72	No
V88	1, 2, 3	SFR	25	55	81	Ballast Mat	73	72	Yes
V89	1, 2, 3	SFR	30	40	78	Ballast Mat	70	72	No
V94	1, 2, 3	SFR/MFR	55	45	75	Ballast Mat	67	72	No
V96	1, 2, 3	SFR	80	55	73	Ballast Mat	65	72	No
V99	1, 2, 3	SFR	60	55	75	Ballast Mat	67	72	No
V101	1, 2, 3	SFR	80	55	73	Ballast Mat	65	72	No
V102	1, 2, 3	SFR	50	55	77	Ballast Mat	69	72	No
V103	1, 2, 3	SFR	85	55	73	Ballast Mat	65	72	No
V105	1, 2, 3	SFR	80	55	73	Ballast Mat	65	72	No
V108	1, 2, 3	SFR	65	55	75	Ballast Mat	67	72	No
V110	1, 2, 3	SFR	75	55	74	Ballast Mat	66	72	No
V112	1, 2, 3	SFR	70	55	74 ³	Ballast Mat and Low Impact Frog	66	72	No
V113	1, 2, 3	SFR	80	55	73 ³	Ballast Mat and Low Impact Frog	65	72	No
V114	1, 2, 3	SFR	75	55	74 ³	Ballast Mat and Low Impact Frog	66	72	No
V115	1, 2, 3	SFR	140	55	75 ³	Ballast Mat and Low Impact Frog	60	72	No
V116	1, 2, 3	SFR/MFR	80	55	80 ³	Ballast Mat and Low Impact Frog	65	72	No
V117	1, 2, 3	MFR	75	55	74	Ballast Mat	66	72	No
V119	1, 2, 3	Mobile Homes	85	55	73	Ballast Mat	65	72	No
V127	1, 2, 3, 4	SFR	60	55	75	Ballast Mat	67	72	No

Cluster No.	Alternative	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
V128	1, 2, 3, 4	SFR	25	55	81	Ballast Mat	73	72	Yes
V129	1, 2, 3, 4	SFR	15	55	84	Ballast Mat	76	72	Yes
V130	1, 2, 3, 4	SFR	24	55	81	Ballast Mat	73	72	Yes
V131	1, 2, 3, 4	SFR	20	55	82	Resilient DF Rail Fasteners	77	72	Yes
V132	1, 2, 3, 4	SFR	34	55	79	Ballast Mat	71	72	No
V133	1, 2, 3, 4	SFR	20	55	82	Ballast Mat	74	72	Yes
V134	1, 2, 3, 4	SFR	20	55	82	Ballast Mat	74	72	Yes
V135	1, 2, 3, 4	SFR	25	55	81	Ballast Mat	73	72	Yes
V140	1, 2, 3, 4	SFR	70	55	74	Ballast Mat	66	72	No
V141	1, 2, 3, 4	SFR	60	55	75	Ballast Mat	67	72	No
V142	1, 2, 3, 4	SFR	72	55	74	Ballast Mat	66	72	No
V144	1, 2, 3, 4	SFR	66	55	75	Ballast Mat	67	72	No
V149	1, 2, 3, 4	SFR	125	55	75 ³	Ballast Mat and Low Impact Frog	61	72	No
V152	1, 2, 3, 4	SFR	20	55	82	Ballast Mat	74	72	Yes
V153	1, 2, 3, 4	SFR	33	55	84 ³	Ballast Mat and Low Impact Frog	71	72	No
V154	1, 2, 3, 4	SFR	31	55	90 ³	Ballast Mat and Low Impact Frog	72	72	No
V155	1, 2, 3, 4	SFR	50	55	77 ³	Ballast Mat and Low Impact Frog	69	72	No
V157	1, 2, 3, 4	Mobile Homes	70	55	74	Ballast Mat	66	72	No
V158	1, 2, 3, 4	SFR	66	55	75	Ballast Mat	67	72	No
V160	1, 2, 3, 4	SFR	70	55	74	Ballast Mat	66	72	No
V162	1, 2, 3, 4	SFR	65	55	75	Ballast Mat	67	72	No
V163	1, 2, 3, 4	SFR	75	55	74	Ballast Mat	66	72	No

4 Affected Environment and Environmental Consequences

Cluster No.	Alternative	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
V165	1, 2, 3, 4	MFR	80	55	73	Ballast Mat	65	72	No
V166	1, 2, 3, 4	MFR	65	55	75	Ballast Mat	67	72	No
V171	1, 2, 3, 4	SFR	60	55	75	Ballast Mat	67	72	No
V173	1, 2, 3, 4	SFR	117	55	76 ³	Ballast Mat and Low Impact Frog	62	72	No
V174	1, 2, 3, 4	Aztec Mobile Home	25	55	91 ³	Ballast Mat and Low Impact Frog	73	72	Yes
V175	1, 2, 3, 4	SFR	120	55	76 ³	Ballast Mat and Low Impact Frog	62	72	No
V180	1, 2, 3, 4	MFR	25	55	81	Ballast Mat	73	72	Yes
V181	1, 2, 3, 4	MFR	60	55	75	Ballast Mat	67	72	No
V187	1, 2, 3, 4	SFR/MFR	40	55	78	Ballast Mat	70	72	No
V189	1, 2, 3, 4	SFR	25	55	81 ³	Ballast Mat and Low Impact Frog	73	72	Yes
V192	1, 2, 3, 4	SFR	60	55	84 ³	Ballast Mat and Low Impact Frog	67	72	No
V193	1, 2, 3, 4	SFR	50	55	86 ³	Ballast Mat and Low Impact Frog	67	72	No
V194	1, 2, 3, 4	SFR	30	55	90 ³	Ballast Mat and Low Impact Frog	72	72	No
V195	1, 2, 3, 4	SFR	45	55	78 ³	Ballast Mat and Low Impact Frog	70	72	No
V197	1, 2, 3, 4	SFR	58	55	76 ³	Ballast Mat and Low Impact Frog	68	72	No
V199	1, 2, 3, 4	SFR	65	55	75	Ballast Mat	67	72	No
V202	1, 2, 3, 4	SFR	65	55	75	Ballast Mat	67	72	No
V204	1, 2, 3, 4	SFR	50	55	77	Ballast Mat	69	72	No
V205	1, 2, 3, 4	SFR	60	55	75	Ballast Mat	67	72	No
V206	1, 2, 3, 4	SFR	45	55	77	Ballast Mat	69	72	No
V207	1, 2, 3, 4	SFR	40	55	78	Ballast Mat	70	72	No
V210	1, 2, 3, 4	SFR	60	55	75	Ballast Mat	67	72	No

Cluster No.	Alternative	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
V211	1, 2, 3, 4	SFR	40	55	78	Ballast Mat	70	72	No
V212	1, 2, 3, 4	SFR	50	55	77	Ballast Mat	69	72	No
V213	1, 2, 3, 4	SFR	80	55	73	Ballast Mat	65	72	No
V214	1, 2, 3, 4	SFR	50	55	77	Ballast Mat	69	72	No
V215	1, 2, 3, 4	SFR	78	55	73	Ballast Mat	65	72	No
V216	1, 2, 3, 4	SFR	40	55	78	Ballast Mat	70	72	No
V217	1, 2, 3, 4	SFR	56	55	76	Ballast Mat	69	72	No
V218	1, 2, 3, 4	SFR	50	55	77	Ballast Mat	68	72	No
V219	1, 2, 3, 4	SFR	39	55	79	Ballast Mat	70	72	No
V221	1, 2, 3, 4	SFR/MFR	64	55	81 ³	Ballast Mat and Low Impact Frog	67	72	No
V222	1, 2, 3, 4	SFR/MFR	42	55	83 ³	Ballast Mat and Low Impact Frog	70	72	No
V223	1, 2, 3, 4	SFR	45	45	81 ³	Ballast Mat and Low Impact Frog	68	72	No
V225	1, 2, 3, 4	SFR/MFR	80	55	73	Ballast Mat	65	72	No
V226	1, 2, 3, 4	SFR/MFR	58	55	76	Ballast Mat	68	72	No
V228	1, 2, 3, 4	SFR	80	45	79	Ballast Mat	71	72	No
V230	1, 2, 3, 4	SFR	52	45	84 ³	Ballast Mat and Low Impact Frog	67	72	No
V232	1, 2, 3, 4	SFR	50	45	85 ³	Ballast Mat and Low Impact Frog	67	72	No
V233	1, 2, 3, 4	SFR	57	55	76 ³	Ballast Mat and Low Impact Frog	68	72	No

Source: Prepared for Metro in 2021

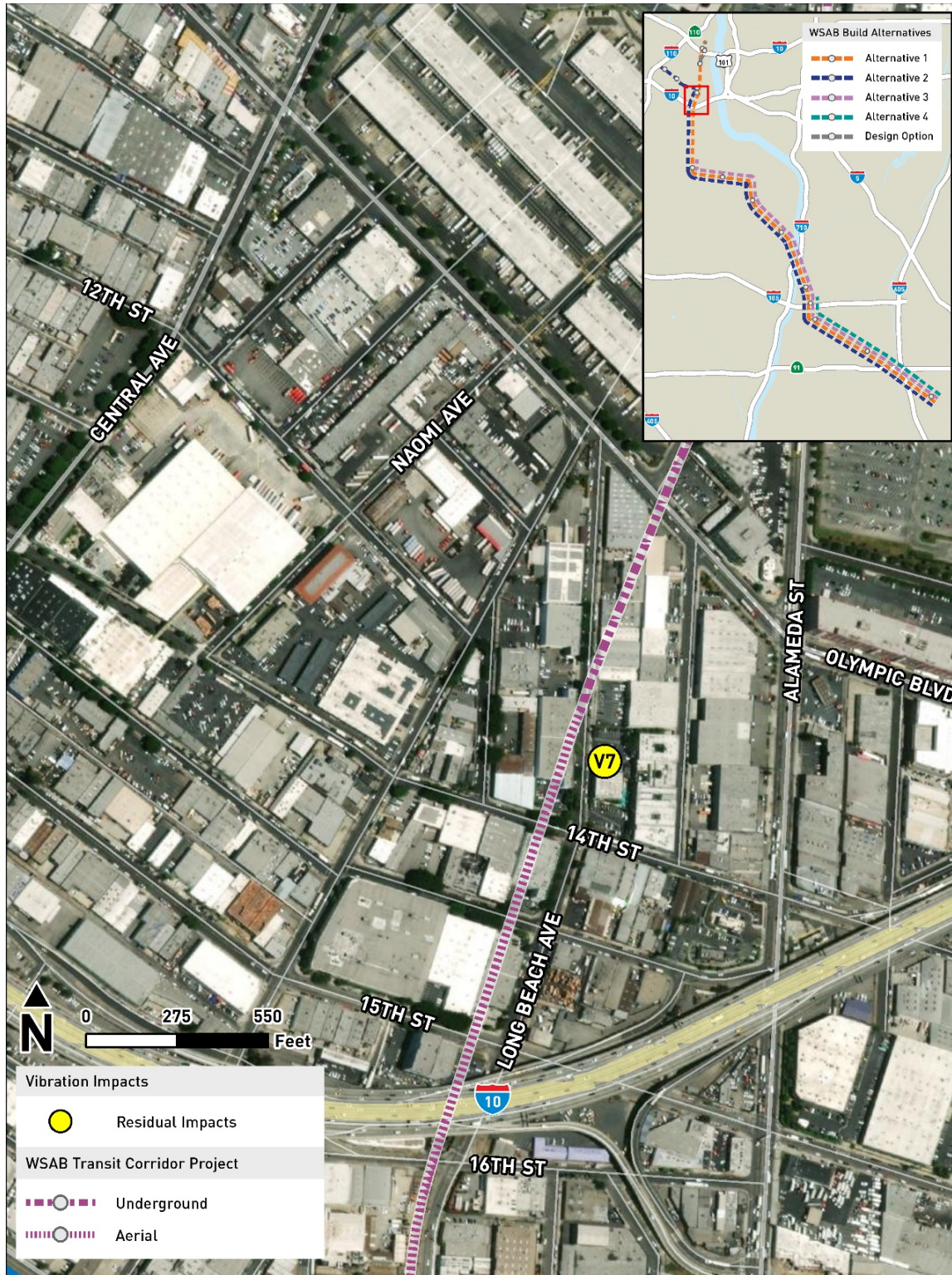
Notes: ¹ A vibration level is considered to exceed the impact criteria if it meets or exceeds the threshold.

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.

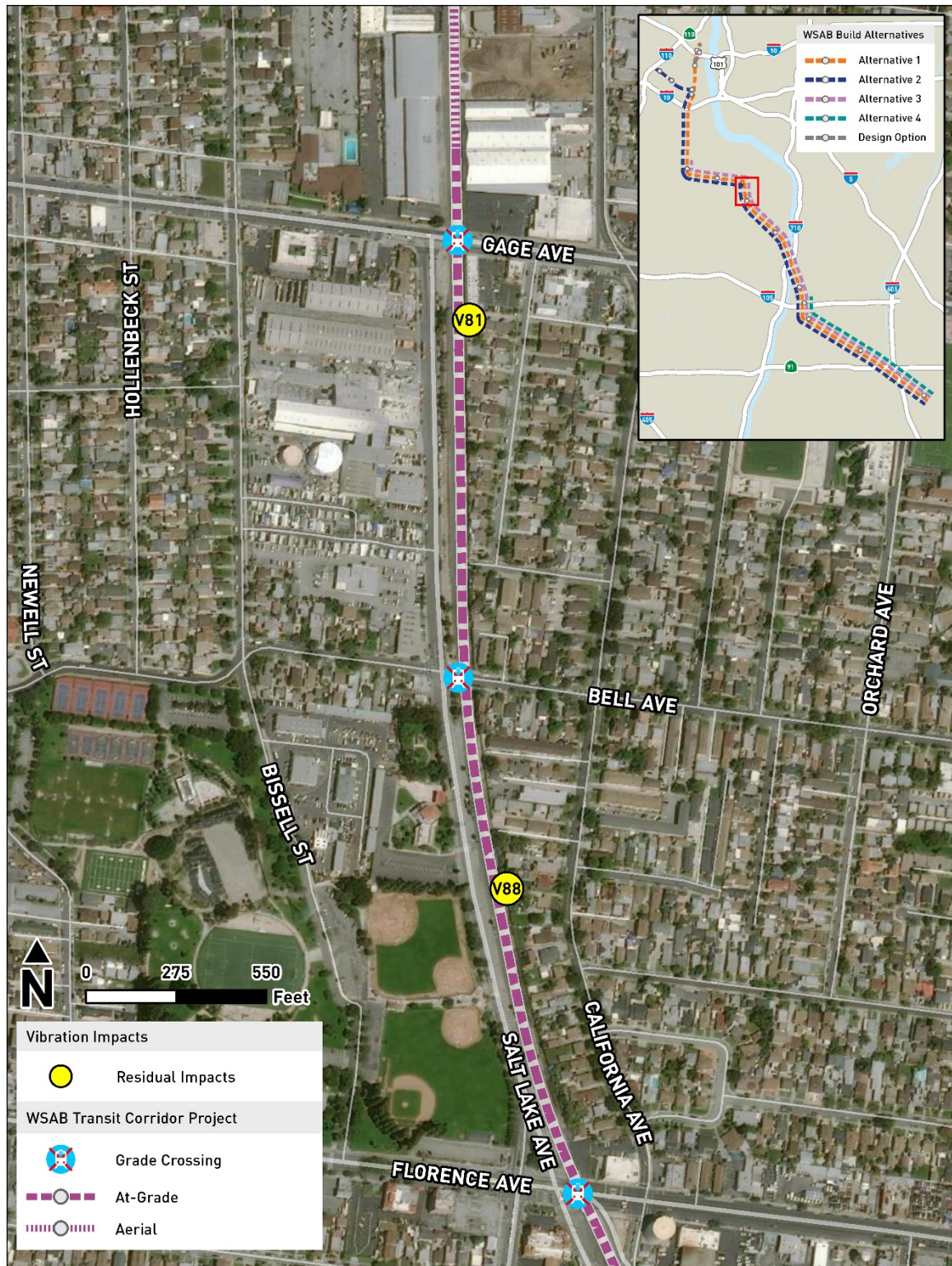
DF = direct fixation; FTA = Federal Transit Administration; GBV = ground-borne vibration; LRT = light rail transit; mph = miles per hour; MFR = multifamily residential; SFR = single-family residential; VdB = vibration decibels

Figure 4.7-14. Vibration Impacts Remaining After Mitigation (Southeast Los Angeles)



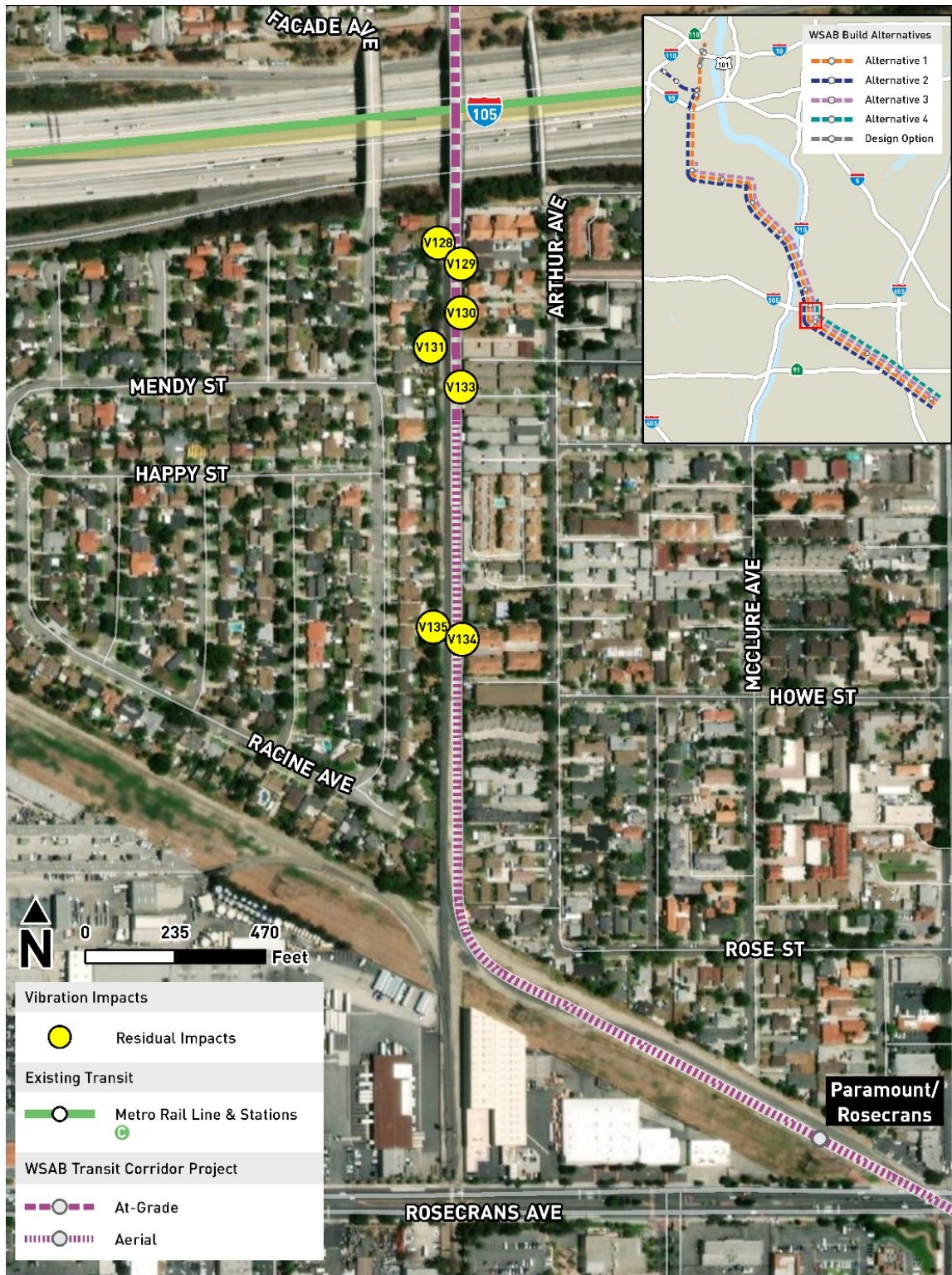
Source: Prepared for Metro in 2020

Figure 4.7-15. Vibration Impacts Remaining After Mitigation (City of Huntington Park to City of Bell)



Source: Prepared for Metro in 2020

Figure 4.7-16. Vibration Impacts Remaining After Mitigation (City of Paramount)



Source: Prepared for Metro in 2020

Figure 4.7-17. Vibration Impacts Remaining After Mitigation (City of Paramount to City of Bellflower)



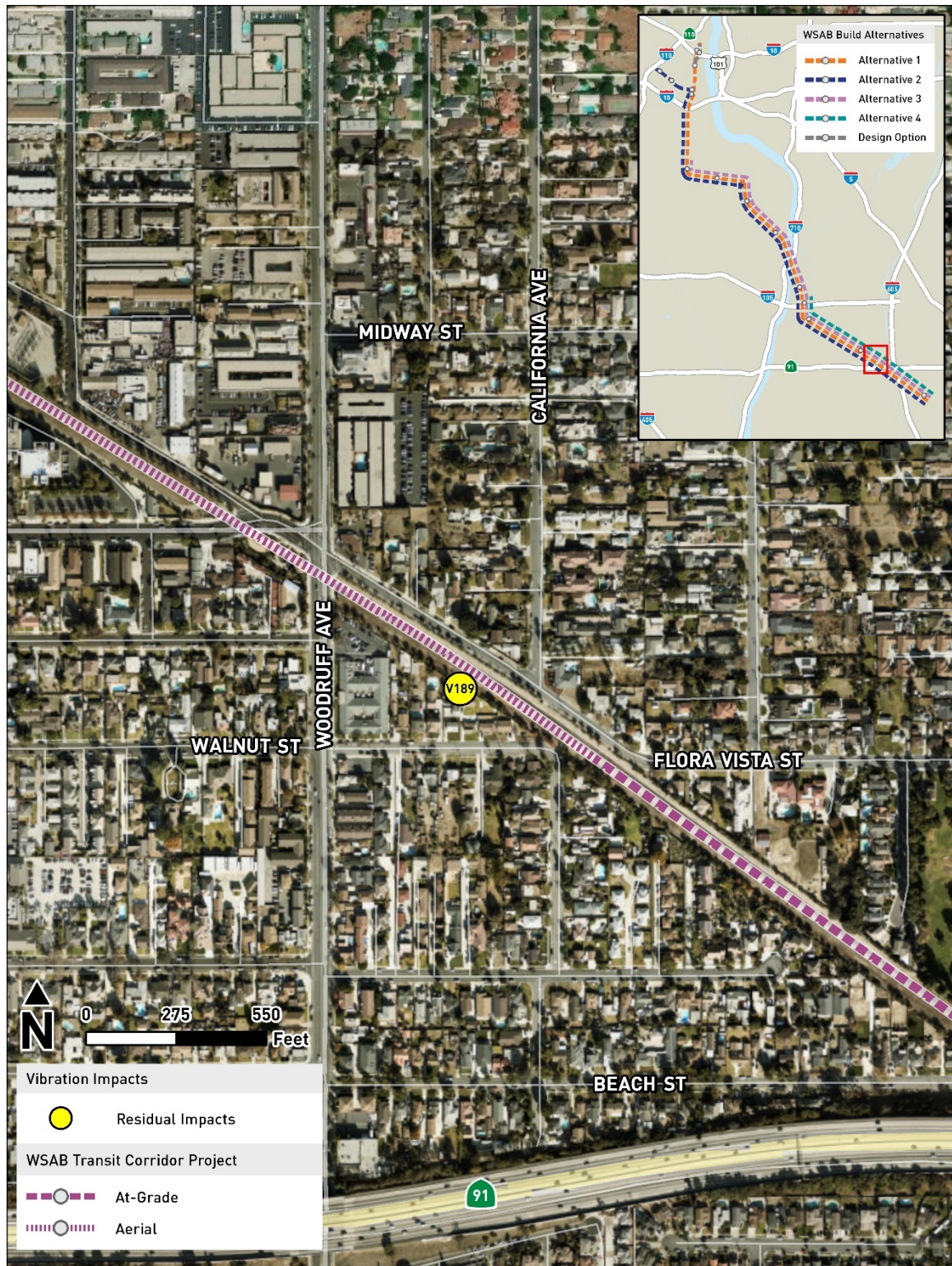
Source: Prepared for Metro in 2020

Figure 4.7-18. Vibration Impacts Remaining After Mitigation (City of Bellflower)



Source: Prepared for Metro in 2020

Figure 4.7-19. Vibration Impacts Remaining After Mitigation (City of Bellflower to City of Cerritos)



Source: Prepared for Metro in 2020

Alternative 4: I-105/C Line (Green) to Pioneer Station: Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would apply to Alternative 4. No underground portion is proposed and, therefore, no vibration impacts related to underground LRT pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment. Alternative 4 would affect vibration clusters 125 through 233. As shown in Table 4.7.13, although Mitigation Measures VIB-1 (Ballast Mat or Resilient Rail Fasteners) and VIB-2 (Low Impact Frogs) would reduce vibration impacts, 11 clusters would still be impacted by LRT vibration in the range of 1 VdB to 5 VdB. According to FTA guidance, there is a strong chance that after mitigation, ground-borne vibration levels at these 11 clusters would be below the impact threshold. Nonetheless, under NEPA, Alternative 4 impacts would be adverse even after implementation of mitigation. No vibration impacts have been identified at the freight track relocations.

4.7.5 California Environmental Quality Act Determination

4.7.5.1 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.

Alternative 1: Los Angeles Union Station to Pioneer Station

LRT: The subterranean portion of Alternative 1 would not generate pass-by noise audible to surface receptors. 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 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. Throughout the project area, Category 2 clusters would experience 76 moderate impacts and 171 severe impacts. Ten Category 3 clusters would experience moderate impacts and two would experience severe impacts. Therefore, without mitigation, impacts related to LRT noise would 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 would result in noise impacts.

Ancillary Facilities: Five moderate impacts and two severe impacts would occur as a result of ancillary facility noise. Therefore, without mitigation, impacts related to ancillary facility noise would be potentially significant.

Parking Facilities: No impacts would occur related to parking facility noise. Therefore, without mitigation, impacts related to parking facility noise would be less than significant.

Freight Track Relocation: Relocation of existing freight tracks would 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 Metro-owned PEROW to accommodate the Build Alternative alignments and maintain existing operations along the ROW where the proposed LRT tracks would overlap. Section 4.7.3.2 discusses the freight train noise and relocation of freight tracks associated with implementation of Alternative 1. The freight tracks would be relocated closer to sensitive receivers at two locations. At the first location, there would be an approximately 20-foot shift of the centerline of the freight tracks to the south of the La Habra Branch ROW along Randolph Street. The other location would be near the I-105 freeway, where the centerline of the freight tracks would shift approximately 15 feet. Residences along Facade Avenue and near Rosecrans Avenue would be affected by the relocated freight tracks.

Freight train noise at both of these locations have been added to the LRT noise. Under Alternative 1, 30 Category 2 clusters would experience moderate impacts and 24 would experience severe impacts. Five Category 3 clusters would experience moderate impacts and two would experience severe 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 would not typically be open when the freight is traversing Randolph Street at night. Therefore, without mitigation, impacts related to relocated freight track noise would be potentially significant.

Mitigation Measures: Mitigation Measure NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (Crossing Signal Bells), NOI-5 (Gate-Down-Bell-Stop Variance), NOI-6 (TPSS Noise Reduction, and NOI-7 (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) would reduce the number and severity of operational noise impacts. Mitigation Measure NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) may result in additional reductions in impacts but would require CPUC approval before implementation. After implementation of mitigation measures related to LRT noise, 103 moderate impacts and 60 severe impacts would remain at Category 2 clusters. Seven moderate impacts would remain at Category 3 clusters. Regarding relocated freight track noise, 33 moderate impacts and 9 severe impacts would 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-7 (Freight Track Relocation Soundwalls). Four moderate impacts and two severe impacts would remain at Category 3 clusters. Regarding ancillary facility noise, implementation of Mitigation Measure NOI-6 (TPSS Noise Reduction) would 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, five moderate and two severe ancillary facility impacts could remain. Impacts related to Alternative 1 would remain significant and unavoidable with mitigation.

Alternative 2: 7th St/Metro Center to Pioneer Station

LRT: The subterranean portion of Alternative 2 would not generate pass-by noise audible to surface receptors. Alternative 2 would follow the same alignment for at-grade and aerial segments. LRT pass-by noise impacts related to Alternative 2 would be largely the same as Alternative 1. However, under Alternative 2, headways would be decreased to 2.5 minutes during one hour of each weekday peak period between the 7th Street/Metro Center Station and the Slauson/A Line Station. Alternative 2 would result in 72 moderate impacts and 176 severe impacts at Category 2 clusters. Impacts at Category 3 clusters would remain the same as Alternative 1. Therefore, without mitigation, impacts related to LRT noise would be significant.

Ancillary Facilities: Five moderate impacts and two severe impacts would occur as a result of ancillary facility noise. Therefore, without mitigation, impacts related to ancillary facility noise would be potentially significant.

Parking Facilities: No impacts would occur related to parking facility noise. Therefore, without mitigation, impacts related to parking facility noise would be less than significant.

Freight Track Relocation: Alternative 2 would follow the same alignment as Alternative 1 for at-grade and aerial segments. Freight track relocation noise impacts related to Alternative 2 would be the same as Alternative 1. Therefore, without mitigation, impacts related to relocated freight track noise would be potentially significant.

Mitigation Measures: Mitigation Measure NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (Crossing Signal Bells), NOI-5 (Gate-Down-Bell-Stop Variance), NOI-6 (TPSS Noise Reduction), and NOI-7 (Freight Track Relocation Soundwalls).

Impacts Remaining After Mitigation: Alternative 2 would have the same impacts after mitigation as Alternative 1. Impacts related to Alternative 2 would remain significant and unavoidable with mitigation.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

LRT: Alternative 3 would not include a subterranean portion but would follow the same alignment for at-grade and aerial segments starting near the Slauson/A Line Station. Because of the shorter at-grade and aerial segment, noise impacts would be reduced overall compared to Alternatives 1 and 2. The northern tail tracks would end at civil station 645+50, which would reduce speeds and noise levels at clusters 33 through 45 at the northern terminus. Alternative 3 would affect clusters 33 through 347 and would result in moderate impacts at 59 of 289 Category 2 clusters and severe impacts at 153 Category 2 clusters. Ten of 26 Category 3 clusters would experience moderate impacts and two would experience severe impacts. Therefore, without mitigation, impacts related to LRT noise would be significant.

Ancillary Facilities: One moderate impact and two severe impacts would occur as a result of ancillary facility noise. Therefore, without mitigation, impacts related to ancillary facility noise would be potentially significant.

Parking Facilities: No impacts would occur related to parking facility noise. Therefore, without mitigation, impacts related to parking facility noise would be less than significant.

Freight Track Relocation: Freight tracks would be relocated at the same locations as Alternatives 1 and 2. Noise impacts related to freight track relocation would be the same as Alternatives 1 and 2. Therefore, without mitigation, impacts related to relocated freight track noise would be potentially significant.

Mitigation Measures: Mitigation Measure NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (Crossing Signal Bells), NOI-5 (Gate-Down-Bell-Stop Variance), NOI-6 (TPSS Noise Reduction), and NOI-7 (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) would reduce the number and severity of operational noise impacts. Mitigation Measure NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) may result in additional reductions in impacts but would require CPUC approval before implementation. Under Alternative 3, 94 moderate impacts and 59 severe impacts would remain at Category 2 clusters after implementation of mitigation measures. Seven moderate impacts would remain at Category 3 clusters. Impacts related to relocated freight track noise would be the same as those identified for Alternatives 1 and 2 after implementation of Mitigation Measures NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring) and NOI-7 (Freight Track Relocation Soundwalls). Regarding ancillary facility noise, implementation of Mitigation Measure NOI-6 (TPSS Noise Reduction) would 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 that will be determined as part of final design. Therefore, one moderate and two severe ancillary facility impacts could remain. Impacts related to Alternative 3 would remain significant and unavoidable with mitigation.

Alternative 4: I-105/C (Green) Line to Pioneer Station

LRT: Alternative 4 would not include a subterranean portion, but would follow the same alignment for at-grade and aerial segments starting near the I-105/C Line Station. However, noise impacts would be reduced overall due to the shortened length of the alignment. The northern tail tracks would end at civil station 1068+50, which would reduce speeds and noise levels at clusters 181 through 187. Alternative 4 would affect clusters 181 through 347 and would result in moderate impacts at 15 of 149 Category 2 clusters and severe impacts at 117 Category 2 clusters. Six of 18 Category 3 clusters would experience moderate impacts and two would experience severe impacts. Therefore, without mitigation, impacts related to LRT noise would be significant.

Ancillary Facilities: One moderate impact and one severe impact would occur as a result of ancillary facility noise. Therefore, without mitigation, impacts related to facility noise would be potentially significant.

Parking Facilities: No impacts would occur related to parking facility noise. Therefore, without mitigation, impacts related to parking facility noise would be less than significant.

Freight Track Relocation: Alternative 4 would not require the relocation of freight tracks north of civil station 1068+50 near the Main Street grade crossing. Freight track relocation would

therefore only affect clusters 183 to 213. Freight train noise at these locations have been added to the LRT noise. Under Alternative 4, six Category 2 clusters would experience moderate impacts and 15 would experience severe impacts. One Category 3 cluster would experience a moderate impact. Therefore, without mitigation, impacts related to relocated freight track noise would be potentially significant.

Mitigation Measures: Mitigation Measure NOI-1 (Soundwalls), NOI-2 (Low Impact Frogs), NOI-3 (Wheel Squeal Noise Monitoring), NOI-4 (Crossing Signal Bells), NOI-5 (Gate-Down-Bell-Stop Variance), NOI-6 (TPSS Noise Reduction, and NOI-7 (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) would reduce the number and severity of operational noise impacts. Mitigation Measure NOI-4 (Crossing Signal Bells) and NOI-5 (Gate-Down-Bell-Stop Variance) may result in additional reductions in impacts but would require CPUC approval before implementation. Under Alternative 4, 56 moderate impacts and 44 severe impacts would remain at Category 2 clusters after implementation of mitigation measures. Three moderate impacts would remain at Category 3 clusters. Regarding relocated freight track noise, 13 moderate impacts and 1 severe impact would 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-7 (Freight Track Relocation Soundwalls). One moderate impact would remain at Category 3 clusters. Regarding ancillary facility noise, implementation of Mitigation Measure NOI-6 (TPSS Noise Reduction) would 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 that will be determined as part of final design. Therefore, one moderate and one severe ancillary facility impacts could remain. Impacts related to Alternative 4 would remain significant and unavoidable with mitigation.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: With implementation of Design Options 1 2, noise related to underground LRT would not be readily transmitted to surface-level receivers. Design Options 1 and 2 would not result in additional operational noise impacts beyond those described for Alternative 1. Therefore, operational noise impacts related to the design options would be less than significant, and no mitigation measures are required.

Maintenance and Storage Facilities

Paramount MSF Site Option and Bellflower MSF Site Option: Noise levels related to MSF noise sources were modeled at the 18 sensitive use clusters near the Paramount MSF site option and the 57 sensitive use clusters near the Bellflower MSF site option. The modeling results indicated noise levels would not exceed the FTA noise impact criteria at nearby sensitive uses. The Paramount and Bellflower MSF site options would not result in impacts. Therefore, impacts related to noise at the MSF site options would be less than significant and no mitigation measures are required.

4.7.5.2 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 GBV and GBN.

No Project Alternative

Under the No Project Alternative, existing sources of ground-borne vibration, including trucks traveling along roadways, construction using heavy equipment, and active freight lines within the corridor, would remain the dominant GBV and GBN sources in the project area. No project-related operational vibration impacts would occur. Therefore, impacts would be less than significant, and no mitigation measures are required.

Alternative 1: Los Angeles Union Station to Pioneer Station

LRT Pass-By: As described in Section 4.7.3.2, one vibration Category 2 cluster would experience GBV and GBN impacts from underground LRT pass-by vibration and 101 vibration Category 2 clusters would experience impacts from at-grade and aerial LRT pass-by vibration. None of the Category 3 clusters would experience impacts. Therefore, without mitigation, impacts related to LRT pass-by vibration would be potentially significant.

Freight Track Relocation: Alternative 1 would not require significant changes to the freight track alignment that would result in impacts at sensitive land uses. No new sources of train vibration would be added to the existing freight tracks. The realignment of the freight tracks along Facade Avenue would move freight tracks closer to residences. The vibration level associated with freight trains at the new location would be 77 VdB at occupied building structures along Facade Avenue. The FTA impact criterion for residential properties exposed to infrequent vibration events is 80 VdB. Projected freight train vibration would not exceed the impact criterion. Therefore, impacts related to freight track relocation vibration would 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) would reduce LRT pass-by vibration impacts. However, 14 impacts would remain along the alignment after mitigation in the range of 1 VdB to 5 VdB. In accordance with FTA guidance, there is a strong chance that actual ground-borne vibration levels at these 14 locations would be below the impact threshold with mitigation. A FTA Detailed Vibration Assessment would be conducted during final design and may show that vibration impacts would not occur and control measures are not needed. Based on currently available information, impacts would be significant even after implementation of mitigation. Therefore, impacts related to LRT pass-by vibration may be significant and unavoidable.

Alternative 2: 7th St/Metro Center to Pioneer Station

LRT Pass-By: As described in Section 4.7.3.3, no vibration Category 2 clusters would experience GBV and GBN impacts from underground LRT pass-by vibration. Similar to Alternative 1, 101 vibration Category 2 clusters would experience impacts from at-grade and aerial LRT pass-by vibration. None of the Category 3 clusters would experience impacts.

Therefore, without mitigation, impacts related to LRT pass-by vibration would be potentially significant.

Freight Track Relocation: The evaluation of vibration effects related to the freight track relocation under Alternative 1 is also applicable to Alternative 2 because both alternatives would have the same effect on freight tracks. Projected freight train vibration under Alternative 2 would not exceed the impact criterion. Therefore, impacts related to freight track relocation vibration would 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) would reduce LRT pass-by vibration impacts. Similar to Alternative 1, 14 impacts in the range of 1 VdB to 5 VdB would remain along the alignment after mitigation. In accordance with FTA guidance, there is a strong chance that actual ground-borne vibration levels at these 14 locations would be below the impact threshold with mitigation. A FTA Detailed Vibration Assessment would be conducted during final design and may show that vibration impacts would not occur and control measures are not needed. Based on currently available information, impacts would be significant even after implementation of mitigation. Therefore, impacts related to LRT pass-by vibration may be significant and unavoidable.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

LRT Pass-By: Alternative 3 would be located at-grade or aerial and therefore no vibration impacts related to underground LRT-pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment compared to Alternatives 1 and 2. As described in Section 4.7.3.4, 96 vibration Category 2 clusters would experience impacts from LRT pass-by vibration. None of the Category 3 clusters would experience impacts. Therefore, without mitigation, impacts related to LRT pass-by vibration would be potentially significant.

Freight Track Relocation: The evaluation of vibration effects related to the freight track relocation under Alternatives 1 and 2 is also applicable to Alternative 3 because all three alternatives would have the same effect on freight tracks. Projected freight train vibration would not exceed the impact criterion for Alternative 3. Therefore, impacts related to freight track relocation vibration would 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) would reduce LRT pass-by vibration impacts. Similar to Alternatives 1 and 2, 13 impacts in the range of 1 VdB to 5 VdB would remain along the alignment after mitigation. In accordance with FTA guidance, there is a strong chance that actual ground-borne vibration levels at these locations would be below the impact threshold with mitigation. A FTA Detailed Vibration Assessment would be conducted during final design and may show that vibration impacts would not occur and control measures are not needed. Based on currently available information, impacts would be significant even after implementation of mitigation. Therefore, impacts related to LRT pass-by vibration may be significant and unavoidable.

Alternative 4: I-105/C (Green) Line to Pioneer Station

LRT Pass-By: Alternative 4 would be located at-grade or aerial and therefore no vibration impacts related to underground LRT-pass-by would occur. Vibration impacts would be reduced overall due to the shortened length of the alignment compared to Alternatives 1, 2, and 3. As described in Section 4.7.3.5, 62 vibration Category 2 clusters would experience impacts from LRT pass-by vibration. None of the Category 3 clusters would experience impacts. Therefore, without mitigation, impacts related to LRT pass-by vibration would be potentially significant.

Freight Track Relocation: Alternative 4 would not require significant changes to the freight track alignment that would result in impacts at sensitive land uses. No new sources of train vibration would be added to the existing freight tracks. Realignment of the freight tracks along Facade Avenue would move freight tracks closer to residences. The vibration level associated with freight trains at the new location would be 77 VdB at occupied building structures along Facade Avenue. The FTA impact criterion for acceptable levels at the interior of residential properties exposed to infrequent vibration events is 80 VdB. Projected freight train vibration would not exceed the impact criterion. Therefore, impacts related to freight track relocation vibration would 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) would reduce LRT pass-by vibration impacts. However, 11 impacts in the range of 1 VdB to 5 VdB would remain along the alignment after mitigation. In accordance with FTA guidance, there is a strong chance that actual ground-borne vibration levels at these locations would be below the impact threshold with mitigation. A FTA Detailed Vibration Assessment would be conducted during final design and may show that vibration impacts would not occur and control measures are not needed. Based on currently available information, impacts would be significant even after implementation of mitigation. Therefore, impacts related to LRT pass-by vibration may be significant and unavoidable.

Design Options—Alternative 1

Design Option 1: LAUS at MWD: GBV and GBN levels were modeled at each cluster along the underground segment for Design Option 1. No clusters would experience levels that are predicted to equal or exceed the FTA impact criteria. Design Option 1 would not include additional impacts beyond those described for Alternative 1. Therefore, operational vibration impacts related to Design Option 1 would be less than significant and mitigation would not be required.

Design Option 2: Add Little Tokyo Station: Predicted vibration levels would not change with the addition of the Little Tokyo Station. Design Option 2 would not include additional impacts beyond those described for Alternative 1. Therefore, operational vibration impacts related to Design Option 2 would be less than significant and mitigation would not be required.

Maintenance and Storage Facility

Bellflower MSF Site Option and Paramount MSF Site Option: As described in Section 4.7.3.7, no impacts would occur related to vibration at the Bellflower or Paramount MSF site option. Therefore, impacts would be less than significant and no mitigation would be required.

4.7.5.3 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 would occur and mitigation would 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 and Build Alternatives. The Affected Area for the purposes of evaluating the potential effects/impacts to biological resources (bio) is defined as 100 feet on both sides of the alignment and around the proposed station areas, as well as MSF sites, 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 2021q) (Appendix N).

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)
- 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)

Refer to Section 4.11.1 – Regulatory Setting and Methodology in the Water Resources section of this Draft EIS/EIR, Chapter 2, Section 2.5.7 – Anticipated Permits, Discretionary Actions, and Agency Approvals of this Draft EIS/EIR, and Section 3 – Regulatory Framework of the Biological Resources Impact Analysis Report (Appendix N) for additional information regarding regulatory approvals and the project regulatory setting.

4.8.1.2 Methodology

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 (CNDDDB) (CDFW 2017a), 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 CNDDDB 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 is defined as 100 feet on both sides of the alignment and around the proposed station areas, as well as maintenance and storage facilities, traction power substation (TPSS) sites, and parking facilities.

For purposes of the jurisdictional delineation, aerial photographs of all potential jurisdictional waters within the corridor; regional and site-specific topographic maps; the Soil Survey, Los Angeles County, California, Southeastern Part (United States Department of Agriculture [USDA], Natural Resources Conservation Service [NRCS] 1973); and other available background information were reviewed to better characterize the nature and extent of potentially jurisdictional waters and wetlands. 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. The *National Hydric Soils List by State: California* (USDA NRCS 2020b) was also reviewed to determine if any soil map units mapped in the site were classified as hydric.

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 in the Southern Section 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 the 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 on-site. 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, and 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 potentially 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 on November 5, 2020. Consistent with that request and the findings presented herein, the USACE preliminarily determined that waters of the U.S. may be present in the three locations in the Affected Area for bio (at the Los Angeles, Rio Hondo, and San Gabriel River crossings).

Impact Analysis

Potential biological effects of the Project were evaluated by examining existing biological conditions along and surrounding the proposed alignments, stations, maintenance and storage facilities, TPSS sites, and parking facilities. This analysis considered potential impacts on special-status plant and wildlife species or aquatic resources subject to USACE jurisdiction, and whether the Project would conflict with applicable biological plans, policies, or regulations. General indicators of significance, based on guidelines or criteria in the National Environmental Policy Act, 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 California Environmental Quality Act 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 78 feet to 294 feet above mean sea level. All proposed alignment sections are within previously developed areas, such as public right-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

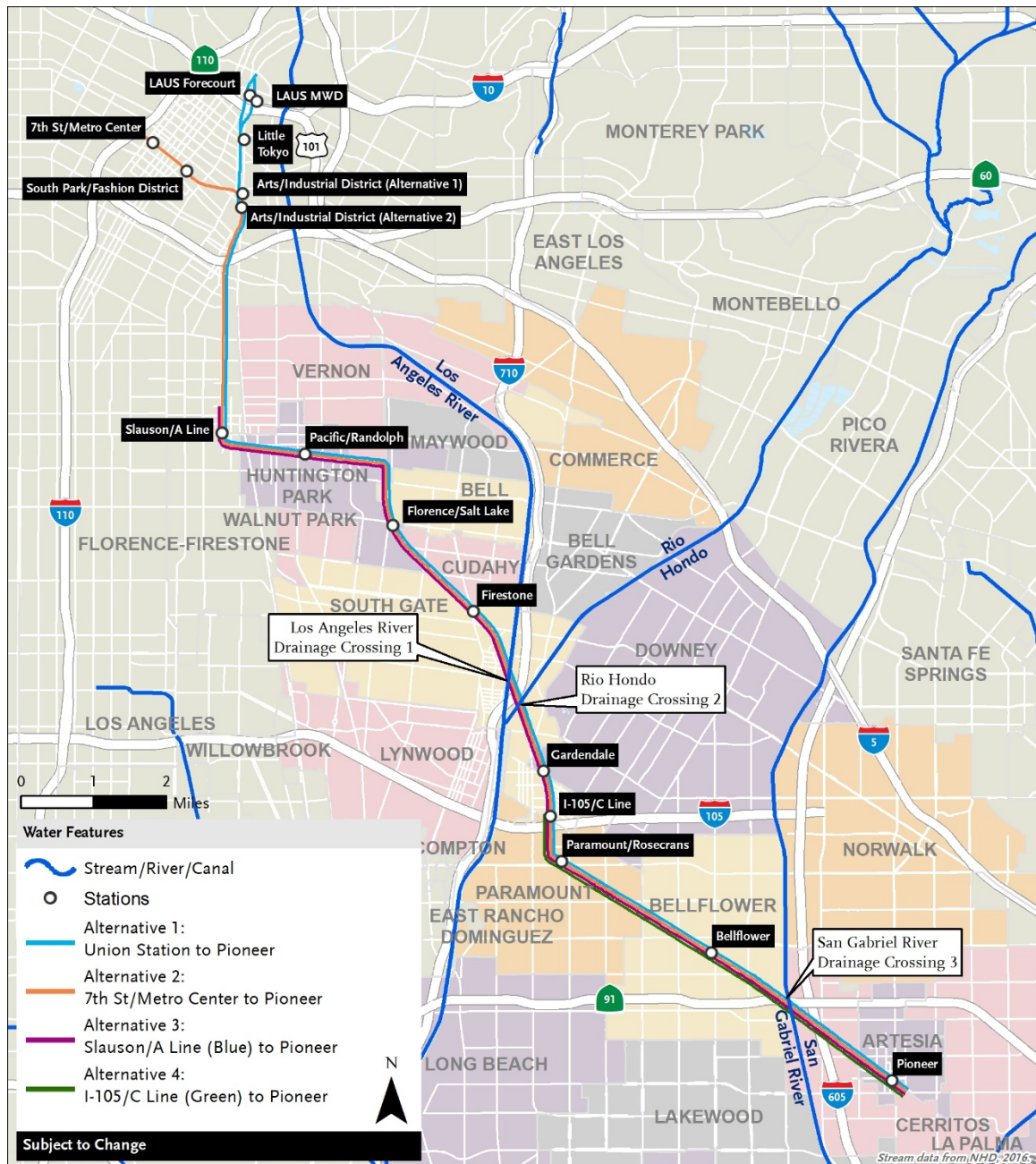
The Affected Area for bio includes three drainages within the watershed of the Los Angeles River (Figure 4.8-1). The proposed alignment for Alternatives 1, 2, and 2 would cross the Los Angeles River and the Rio Hondo Channel (a tributary to the Los Angeles River) near I-710, and all four Build Alternatives would cross the San Gabriel River at SR 91 in the City of Bellflower. The streambeds at the proposed 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 proposed alignment would cross numerous storm drain systems. However, these storm drains consist primarily of belowground concrete pipes. The proposed alignment would not cross any soft-bottomed drainage channels with a natural substrate.

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 (Appendix N).

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*).

Figure 4.8-1. Drainage Locations



Source: Imagery and base map provided by ESRI and its licensors ©2017. Project data from WSP and Metro 2020; stream data from National Hydrography Dataset 2016. Subject to change.

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., CNDDDB, other reports) on the site within the last five years.

Special-Status Species

The CNDDDB identified 23 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 (Appendix N) provides the species name, status, habitat requirements for all special-status species identified within a 5-mile radius of the Affected Area, 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. 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 (Appendix N) 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 January 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 in high buildings in downtown Los Angeles, as well as 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 utilize 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

One special-status vegetation community, the walnut forest (G1/S1.1), has 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, Rio Hondo, and San Gabriel Rivers 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 Build Alternatives would cross up to three drainages (Figure 4.8-1):

- Drainage Crossing 1: Alternatives 1, 2, and 3 would cross 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 and Section 10 of the Rivers and Harbors Act. 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: Alternatives 1, 2, and 3 would 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 contains approximately 1.63 acres of waters subject to the jurisdiction of the USACE and RWQCB (Figure 4.8-3). Because the Rio Hondo 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.
- Drainage Crossing 3: All four Build Alternatives would 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.

Wildlife Movements

The Project would be located within highly developed urban areas; therefore, it is unlikely that wildlife utilizes 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.

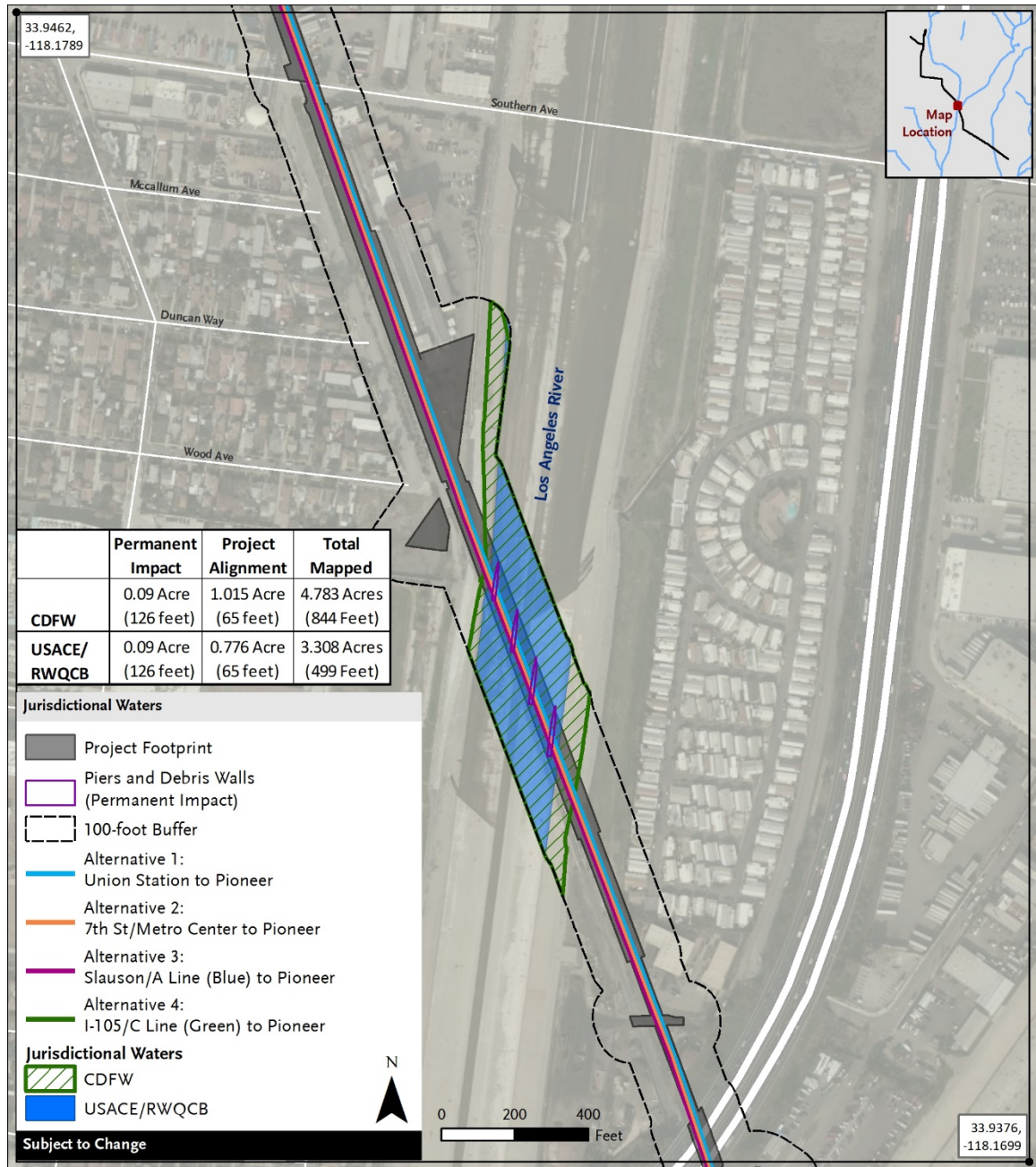
Resources Protected by Local Policies and Ordinances

Approximately 110 street trees protected by the Cities of Los Angeles, Huntington Park, Bell, South Gate, Downey, Bellflower, and Cerritos are present within the Affected Area for bio.

Conservation Plans

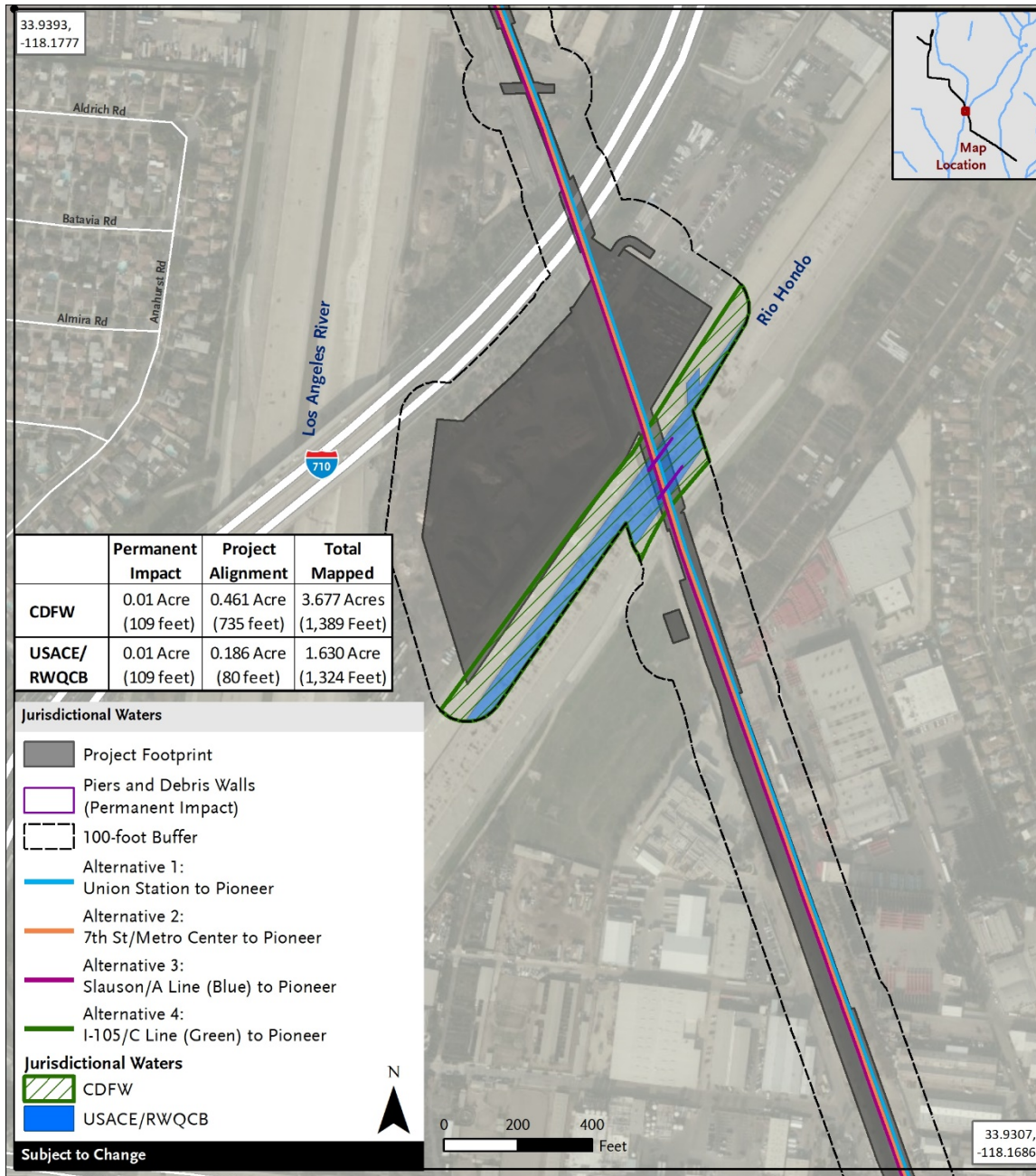
The Affected Area for bio is not identified as a Biological Resource Area or Significant Ecological Area by the City of Los Angeles, LA County, or any other jurisdictions traversed by the Affected Area. In addition, the Affected Area for bio is highly urbanized and not within or proximate to any native 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.

Figure 4.8-2. Drainage Crossing 1 Jurisdictional Delineation



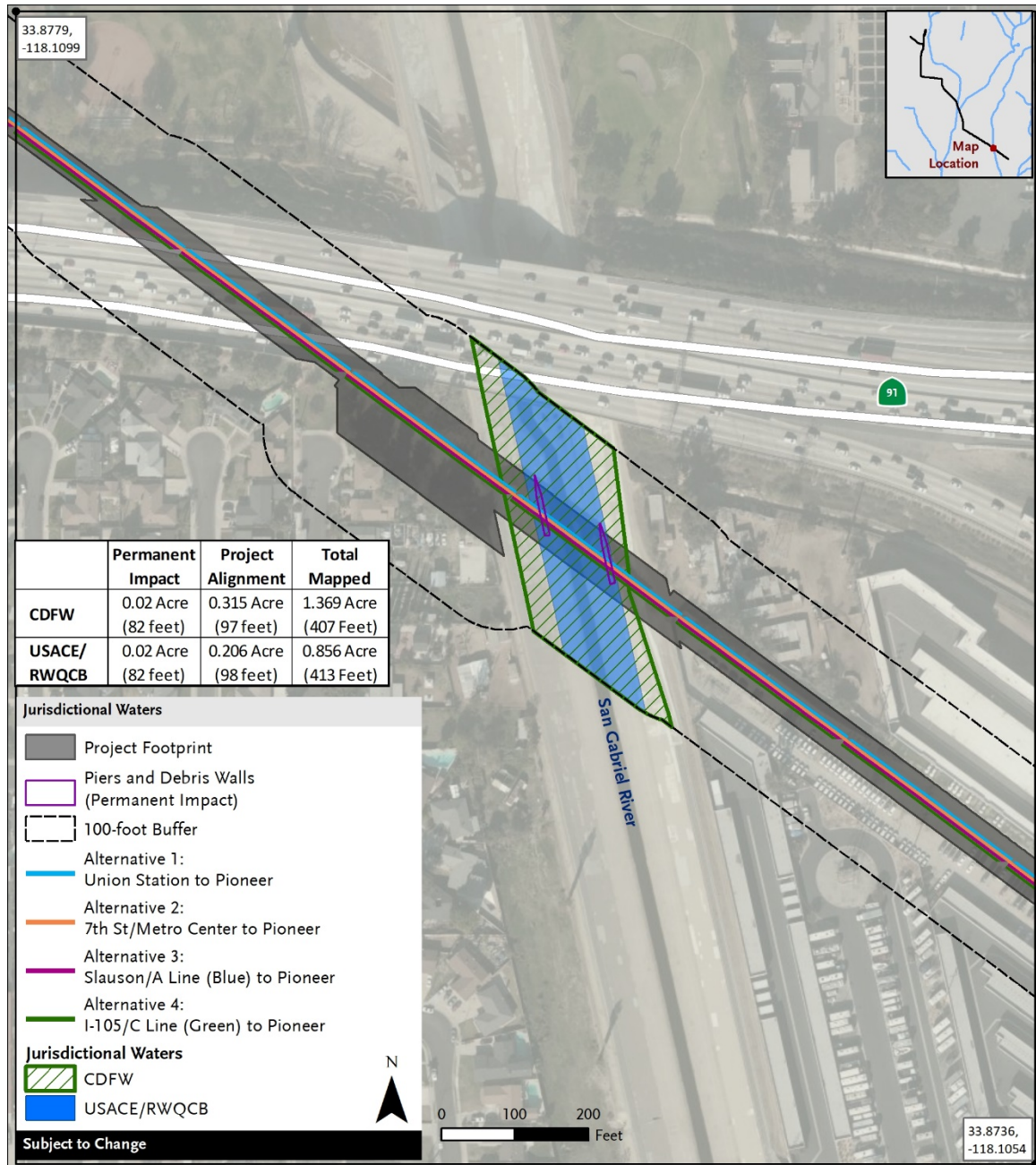
Source: Prepared for Metro in 2020

Figure 4.8-3. Drainage Crossing 2 Jurisdictional Delineation



Source: Prepared for Metro in 2020

Figure 4.8-4. Drainage Crossing 3 Jurisdictional Delineation



Source: Prepared for Metro in 2020

4.8.3 Environmental Consequences/Environmental Impacts

4.8.3.1 No Build Alternative

Under the No Build Alternative, the Build Alternative 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 the projects 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 Build Alternatives

As Alternatives 1, 2, 3, and 4 are substantially similar in regard to existing biological conditions (i.e., urban, disturbed), the potential effects and consequences were analyzed for the Project as a whole. The analysis presented below concludes that operation of the Project would result in no adverse effects related to special-status species, jurisdictional waters, and protected trees. However, potential effects associated with the Project are greater under Alternatives 1 and 2 due to their overall length (19.3 miles as opposed to 14.8 miles under Alternative 3 and 6.6 miles under Alternative 4). Alternative 4 poses the least potential effect as it would be the shortest and includes one river crossing as opposed to three (Alternatives 1, 2, and 3 include three river crossings).

Special-Status Species

The Project would 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 USFWS⁴. Therefore, operation of the Project would 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, a CDFW Species of Special Concern, may use high buildings or bridges within the Affected Area for bio as roosting habitat, specifically buildings in downtown Los Angeles and existing bridges crossing the Los Angeles River, Rio Hondo Channel, and San Gabriel River. Additionally, nesting bird habitat is present throughout the Affected Area for bio, including within proposed station areas, the Paramount and Bellflower maintenance and storage facilities, 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 Project is located in a heavily developed and disturbed area, and as such, operation of the Project 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 Project would result in no adverse effects related to special-status species and mitigation is not required.

⁴ 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.

Jurisdictional Waters

Based on the jurisdictional delineation conducted for this study, three crossings of jurisdictional water resources (i.e., the Los Angeles, Rio Hondo, and San Gabriel Rivers) occur within the Affected Area for bio. None of these crossings contain intact riverine or wetland vegetation. The project would span over these resources and there would be no disturbance to the bed, banks, and any associated vegetation, or discharge of fill material into the features. Under NEPA, operation of the Project would result in no adverse effects related to jurisdictional water resources and mitigation is not required.

Protected Trees

Operation of the Project would result in no adverse effect related to protected trees within the Affected Area for bio and mitigation is not required.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: These components are substantially similar to the rest of the Affected Area for bio in regard to existing biological conditions (i.e., urban, disturbed). Additionally, these components are underground, and operation of these design options would not result in impacts to biological resources. Therefore, the impact conclusions from the Build Alternatives are applicable to Design Options 1 (MWD) and 2.

Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option: The Paramount and Bellflower MSF site options 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 from the Build Alternatives are applicable and operation of the Paramount and Bellflower MSF site options would not result in impacts to biological resources.

4.8.4 Project Measures and Mitigation Measures

No biological impacts are anticipated as a result of project operation. Therefore, project and mitigation measures are not required.

4.8.5 California Environmental Quality Act Determination

Environmental impacts were analyzed for operation of the Project as a whole, inclusive of Alternatives 1, 2, 3, and 4; Design Options 1(MWD) and 2; and the Bellflower and Paramount MSF site options, because the urban nature of the Affected Area for bio is generally consistent throughout the extent of the Project.

4.8.5.1 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 Project would not be constructed and no new infrastructure would be built within the Affected Area for bio. 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 as a result of the Project.

Build Alternatives, Design Options, and MSF Site Options

The Project is located in a heavily developed/disturbed area, and as such, operation of the Project is not expected to present a new or unusual use within the area. As a result, the Project would be unlikely to affect wildlife species should they be present. Therefore, direct and indirect effects to special-status species as a result of project operation would be less than significant, and mitigation would not be required.

4.8.5.2 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 community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS and no impacts would occur as a result of the Project.

Build Alternatives, Design Options, and MSF Site Options

The Project is 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 CNDDDB. 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 would not occur as a result of Project operation. There would be no impact, and mitigation would not be required.

4.8.5.3 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 Project 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 as a result of the Project.

Build Alternatives, Design Options, and MSF Site Options

Operation of the Project would not result in impacts to state or federally protected wetlands. Therefore, no impacts would occur, and mitigation would not be required.

4.8.5.4 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 Project 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 and no impacts would occur as a result of the Project.

Build Alternatives, Design Options, and MSF Site Options

Operation of the Project 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, as the Project is located within developed, urban areas. As a result, it is unlikely that wildlife utilizes the immediate area for regional movement. Furthermore, CDFW does not identify any mapped California Essential Habitat Connectivity areas within the Affected Area, nor does the Affected Area for bio contain any Missing Linkages, as identified by the South Coast Wildlands Network. Therefore, no impacts would occur, and mitigation measures would not be required.

4.8.5.5 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 Project 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.

Build Alternatives, Design Options, and MSF Site Options

Operation of the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Therefore, no impacts would occur, and mitigation would not be required.

4.8.5.6 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 Project 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.

Build Alternatives, Design Options, and MSF Site Options

Operation of the Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. Therefore, no impacts would occur, and mitigation would not be required.